RESERVE BANK OF AUSTRALIA

Reserve Bank of Australia Review

Requests for Information from the Reserve Bank

September/October 2022

The Review of the Reserve Bank is welcomed by the Reserve Bank Board and the Bank's staff. It is an opportunity to take stock of Australia's monetary policy arrangements and the operations of the Bank and make sure they are fit for purpose for the challenges ahead.

The Review Panel has asked the Bank a range of questions and sought access to various documents relating to the key themes of the Review. This paper reproduces the questions asked by the Panel and the answers that the Bank has provided. Responses to a first set of questions were provided on 9 September 2022 and responses to a second set of questions were provided on 28 October 2022. Minor edits have been made to deal with issues of third-party confidentiality and to ensure clarity of the material for a wider audience.

The Bank has also provided a range of documents to the Panel in response to its questions, including both internal and published documents. The published documents that were provided to the Panel are listed in this document.

This material represents one of a number of ways in which the Bank has provided input to the Review. Members of the Reserve Bank Board and senior executives have also participated in meetings with the Panel, and all staff were invited to complete a confidential survey, participate in focus groups, and make public or private submissions to the Review.

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First Request for Information

September 2022

1. Monetary policy arrangements

1.1. Internal analysis or views of alternative monetary policy frameworks, and the continued appropriateness of the current flexible inflation targeting framework. *(Last 5 years)*

The Bank has argued publicly that a flexible inflation targeting framework has been, and remains, appropriate. This view is also widely held among the staff. The general reasons that have been outlined in favour of the framework are:

1. It has provided a strong nominal anchor because it is clear and credible.
2. It affords an appropriate degree of flexibility, accommodating temporary deviations of inflation from target in order for policy to support full employment and public welfare (more generally, it is nested within the broader objective of welfare maximisation).
3. It is relatively straightforward to communicate and provides a basis for accountability.

Support for the framework has, over the years, also come from the favourable macroeconomic outcomes since inflation targeting was introduced in the early 1990s, especially when compared with earlier periods with different monetary frameworks. Inflation has fluctuated over time but always returned to the 2–3 per cent target range and has averaged 2.5 per cent over the inflation-targeting period since 1993. The regime has helped underpin a strong and stable economy through a series of large and varied economic shocks.

The Bank's staff monitor policy debates and consider alternatives to the current regime on a regular basis. In particular:

- The Bank's analysis is informed by the research and conclusions of other central banks, including in their own reviews. In recent years, other central banks in advanced economies have concluded that some form of flexible inflation targeting is appropriate and have tended, if anything, to move closer to the relatively flexible formulation that has long been in place in Australia.
- Alternative models are explored by the invited papers at the Bank's annual conferences and research workshops. In 2018, the Bank held a conference with internal and external participants (including then current and past senior leadership of the Bank) on the topic of 'Central Bank Frameworks: Evolution or Revolution?'. The general sentiment expressed was that the flexible inflation targeting framework had delivered good outcomes and there was no strong argument for change; however, this view was not unanimous. This was also the conclusion of the 2004 conference dedicated to inflation targeting.

Staff thinking on alternative monetary policy regimes was presented to the Board in a paper to the February 2020 meeting. Among other things, this discussion pointed out that any assessment of the

monetary framework needed to consider the appropriate mix between fiscal and monetary policy in a low interest rate environment.

Broadly speaking, this body of work has focused on two main alternatives to flexible inflation targeting: make-up strategies; and nominal income targeting.

1. Make-up strategies

Several frameworks can be thought of as 'make-up' strategies for past inflation misses. After inflation undershoots the target, the central bank promises to keep monetary policy stimulatory to encourage an overshoot, and vice versa. *Average inflation targeting* looks back over a few years to offset misses, while *price level targeting* ensures full and permanent make-up of any prior miss. Price level targeting has not been used by any central bank.

In principle, these strategies could provide a stronger anchor for inflation expectations. Following a period of undershooting, expectations for an extended period of stimulus should also help promote current economic activity. That said, simulations find these benefits to be only modest at best.

A key challenge with such strategies is that they may not be seen as credible. When the time comes to let inflation overshoot, the central bank may have an incentive to tighten policy anyway. Similarly, it may be reluctant to pursue below-target inflation after an overshoot, at the cost of high unemployment. This credibility issue is likely to apply especially to central banks that have mandated objectives in addition to inflation. It is also harder to 'look through' and communicate the policy response to temporary shocks such as oil price or tax changes than it is with a flexible inflation target. Finally, inflation expectations might actually become less well anchored because inflation must vary over time for the price level to converge back to the intended path.

2. Nominal income targeting

Another alternative is to target nominal GDP rather than a price variable. This approach combines two common goals of monetary policy (output and prices) into one metric. This framework is favoured by some prominent academic economists.

Advocates of nominal income targeting argue that it is better placed to respond to supply shocks than strict inflation targeting, and does so more transparently than flexible inflation targeting. It may also help overcome challenges of the effective lower bound by allowing inflation expectations to move in response to changing economic conditions rather than being anchored at a fixed target. In particular, if real GDP growth declines, inflation (and inflation expectations) would be intended to rise as monetary policy is eased to return nominal GDP to its target. In turn, this would increase the available policy space when rates are already very low, by increasing the nominal neutral rate.

There are, however, a number of practical difficulties with nominal income targeting that help explain why it has not been adopted by any central bank. Revisions to GDP make it a moving target; it would be more likely that a policy action that seemed like the right thing to do at the time would turn out to have been mistaken in retrospect. In addition, nominal GDP targeting is sometimes criticised as being harder for the community to understand and relate to than an inflation target or dual mandate. While it is reasonably easy for the community to draw a connection between inflation and unemployment and their own welfare, this is harder for a more abstract concept like GDP. Relatedly, Australia experiences large swings in its terms of trade, and the resulting movements in nominal GDP would not be seen by most domestic households in their living standards. Using a measure of domestic spending such as Gross National Expenditure would mitigate this issue, although not completely.

There is also some debate around the policy prescriptions that would be implied by nominal income targeting. First, if applied strictly, it does not allow the central bank to abstract from temporary price volatility (e.g. oil prices), nor does it recognise that greater volatility in inflation is likely to impinge on growth. Second, high inflation and low growth would generate the same policy response as low inflation and high growth. In other words, the central bank must give equal weight to departures from inflation and growth from their target (although this transparency of trade-offs is also argued to be an advantage). In addition, dual mandates are usually specified in terms of unemployment, not GDP growth, and the two are not equivalent. All that said, a flexible form of nominal income targeting could, in practice, have many of the same characteristics as a flexible inflation target that has full employment as an objective.

The following documents consider these issues in further depth.

Documents: Alternative Monetary Policy Frameworks (and Specification)

Inflation Targeting and Economic Welfare (2019)	Speech	Link
Inflation and Monetary Policy (2016)	Speech	Link
Reserve Bank Conference 2018, 'Central Bank Frameworks: Evolution or Revolution?' • Introduction and summary • Twenty-five Years of Inflation Targeting in Australia	Conference	Link
Inflation Targeting: A Victim of Its Own Success (2015)	Research Discussion Paper	Link

1.2. Internal analysis or views on the specification of the inflation target, including its level and the width of the target band (2–3 per cent). *(Last 10 years)*

Australia's inflation target was introduced to lock in the low levels of inflation experienced in the wake of the early 1990s' recession. It was designed in an environment in which inflation targeting was largely untested and there was little external academic research to guide its optimal design in Australia.

The Governor at the time, Bernie Fraser, noted that the 'appropriate degree of price stability to aim for is a matter of judgement'. The 2–3 per cent 'thick point' and on-average target contrasted with the 0–2 per cent hard-edged targets that had recently been adopted in New Zealand and Canada, and had been proposed during the 1992 election. A rate of 2–3 per cent was seen as 'unlikely to materially affect business and consumer decisions' and would avoid the 'unnecessary costs entailed in pursuing a lower rate'. The target was borne out of a pragmatic view that even countries with a reputation for inflation control had not managed to keep inflation in such a narrow band. In addition, as a commodity exporter, Australia was subject to large swings in its terms of trade and exchange rate, and the inflationary consequences of this were too large and swift for the central bank to offset in time.

This framework has been little changed over the past three decades, but the Bank has been cognisant of three aspects that have come into focus in recent years: the level of the target; the flexibility it affords; and the way in which it is recorded and reviewed.[1]

The level of the target

The low-inflation environment of much of the past decade saw some in the community argue for lowering the target. Likewise, there were some arguments made to raise the target during the period of higher inflation in the mid-2000s. The Bank has publicly supported the current level of the target, arguing that it provides a balance between being set too low and too high. In particular:

- In practical terms, the level of the target has been able to be maintained over the period even though it is above that in some other economies.
- The target has been low enough to not materially enter into economic decision-making – that is, a lower target has not been needed to achieve the main benefits. Moreover, low rates of inflation internationally have posed a number of design issues for inflation targeting regimes, as nominal interest rates will more frequently reach the effective lower bound. As a result, a number of prominent economists have argued for higher inflation targets. At the Board's discussion of this issue in February 2020, it was observed that the higher inflation target in Australia means that the cash rate is less likely to hit the effective lower bound over time.
- A higher target has been seen as running the risk that inflation will affect decision-making, as occurred in previous decades in Australia when inflation was higher.
- Changing the target (in either direction) could damage long-term credibility if it were not done in an appropriate way. As the Governor noted in 2019 about lowering the target: 'It might have the short-run advantage of allowing us to say we have achieved our goal, but shifting the goalposts hardly seems a good way to build long-term credibility. Shifting the goalposts could also entrench a low inflation mindset.' Similar arguments can be made against increasing the target.

The Bank does, however, recognise that the precise specification of the target differs from that overseas, and that this is an issue to be covered in the Review.

Flexibility

The flexibility of the target comes from its specification as 'on average, over time'. As well as making it easier to look through large shocks, this allows the Board to consider other aspects of its mandate – namely, full employment and the welfare of the Australian people. The current *Statement on the Conduct of Monetary Policy* (signed in 2016) makes clear that financial stability is a part of this latter objective; there is flexibility to balance meeting short-term objectives with the build-up of longer term risks.[2] Departures from the target from above and below are considered symmetrically.

Again, the Bank has publicly supported the flexibility in this framework. Flexibility has allowed monetary policy to balance different trade-offs presented by a variety of shocks over the past three decades, including most recently the COVID-19 pandemic. As noted, among other central banks, some

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1 Bank research has also looked at the choice of target metric (CPI inflation) and concluded that it remains preferable to alternatives (replacing CPI with non-tradable inflation for instance). See Gillitzer and Simon (2015).

2 In 2016, the timeframe for achieving the inflation target was changed from 'over the cycle' to 'over time' and a more explicit reference to the link between monetary policy and financial stability was added.

that initially adopted hard-edged bands have since moved towards a more flexible target similar to Australia's.

Within that framework, though, questions can arise about how responsive policy should be to deviations from target. Views within the community will, and have, differed on whether the appropriate balance has been struck through different episodes. Some have also critiqued 'on average, over time' as too vague for the Bank to be properly held to account – that is, the time dimension is not as clearly measurable a benchmark as in some other countries.

Process for agreement and review

Finally, there has been some focus on the way in which the common understanding of the monetary policy framework is recorded. The *Statement on the Conduct of Monetary Policy* is an agreement between two individuals – the Governor and the Treasurer – which is a somewhat unusual arrangement among peer central banks. It is updated on a periodic basis as required, while some other central banks have long had, or recently introduced, regular pre-determined cycles of review (e.g. on a five-yearly basis in Canada and, going forward, New Zealand and the United States).

These issues are covered in further depth in the same documents that are listed for question 1.1.

1.3. Internal analysis of the effectiveness of macroprudential policies in containing risks. *(Last 10 years)*

Over the past decade, macroprudential measures have been used in two broad episodes in Australia. First, the Australian Prudential Regulation Authority (APRA) introduced restrictions on investor housing credit growth in 2014 and on interest-only housing lending in 2017. Second, APRA increased the interest rate buffer used in the serviceability requirement test for housing lending in 2021. The Bank's work on macroprudential polices has been concentrated on the build-up of housing-related risks in the lead-up to each of these episodes, and subsequently an evaluation of their efficacy.

Over this period, the Bank examined the range of measures used in comparable countries. This highlighted the relatively broad range of measures used, with the measure chosen influenced by the domestic structure of the housing lending market, the nature of risks, data availability and what measures were able to be used by the regulating authority. Macroprudential measures were seen to have been successful in addressing the primary risk (e.g. a high share of high loan-to-income (LTI) lending), but it was not always clear if they had lowered systemic risk. It was noted that design features could result in 'undesired' consequences (e.g. allowing a share of loans to exceed a LTI threshold resulted in some institutions increasing their high-LTI lending up to that threshold, and lenders writing larger high-LTI loans).

The Bank's work in the lead-up to the 2014 and 2017 measures focused on the nature of perceived risks in the housing market. In particular, lending was seen to be 'imbalanced' with a large and increasing share of lending for investment purposes. In addition, it was noted that the large increase in interest-only lending meant that many loans did not need to amortise (although they could with voluntary principal payments), which increased risks of future losses. Interest-only loans were disproportionately used by investors given the tax deductibility of interest payments. The evaluation work after these measures identified that they had each been very successful in reducing interest-only and investor lending. The measures also reduced housing price growth in regions that had a larger share of investor buyers. However, there also appeared to be some increase in borrowing by

owner-occupiers, presumably because of less competition from investor buyers and as lenders switched their focus in attempting to grow their lending book.

In the lead-up to the increase in the serviceability measure in 2021, Bank work considered the range of potential macroprudential measures, how successful they had been in other countries and what the potential side-effects could be. At the time it was not seen that weak lending standards were a problem contributing to excessive credit growth and system-wide risk. Rather it was assessed that low interest rates and generally buoyant conditions were encouraging high levels of risk-taking. In this environment the Bank assessed that the best macroprudential measure would be one that targeted the most vulnerable borrowers, those who were most likely to experience difficulty making debt repayments. The increase in the serviceability buffer achieved this by ensuring that borrowers would not be able to take out a loan so large that they would have little spare income after living expenses and debt repayments.

The following documents provide further details.

Documents: Effectiveness of Macroprudential Policy

Mortgage Macroprudential Policies (2021)	FSR chapter	Link
Macroprudential Limits on Mortgage Products: The Australian Experience (2021)	Research Discussion Paper	Link
Assessing the Effects of Housing Lending Policy Measures (2018)	FSR chapter	Link

2. Implementation

2.1. Internal analysis assessing the effectiveness of the RBA's monetary policies, including the RBA's bond purchase program, yield curve control, term funding facility and forward guidance. Please also include analysis assessing monetary policy tools or strategies that were not pursued. *(Last 5 years)*

Conventional tool: The cash rate

The Bank's primary tool for adjusting financial conditions is the cash rate. Changes in the cash rate flow through to interest rates faced by both borrowers and savers among households and businesses, which in turn affect economic activity and inflation through a variety of channels.

Bank staff assess these transmission channels in their regular presentations to the Board and in communication with the public. There have also been a number of detailed Board papers and Bank publications on the transmission of policy, using a variety of macroeconomic and statistical models. The effects of cash rate changes on the economy are regularly reassessed as these relationships may change with structural change in the economy. Of note:

- The pass-through of changes in the cash rate to household and business lending and deposit rates is relatively swift and typically very high. Variable lending rates have moved broadly one-for-one with changes in the cash rate. With the majority of household and business debt in Australia having variable rates or fixed for relatively short terms, this has translated directly into changes in households' and businesses' cash flows. The staff closely monitor household and business interest rates, and financial conditions more broadly, following cash rate changes and report these in the monthly board papers.
- In terms of the overall effect on inflation and activity, a range of models suggest that, on average, a 100 basis points increase in the cash rate is estimated to decrease annual GDP growth by about ½ to ¾ percentage points during the following two years, with the peak effect after about one and a half years. Inflation is estimated to decrease by a bit under ¼ percentage points per year over two to three years. These estimates are subject to considerable uncertainty.

Unconventional tools

Background

In 2019, with the cash rate already low, work was undertaken to examine a range of unconventional monetary tools, building on and updating prior work in this area. This included internal research, a paper for the Board and a speech by the Governor. The findings drew upon lessons from international experience, including from staff who are members of, and supported the work of, the Committee on the Global Financial System of the Bank for International Settlements. This group, which is currently chaired by the Governor, published a report on the cross-country experience with unconventional monetary policy tools.

Bank work included an assessment that it was not clear that the international experience with negative interest rates had been a success. While negative rates put downward pressure on exchange rates and long-term bond yields, they can create strains in parts of the banking system and problems for pension funds that need to fund long-term liabilities. In addition, they can encourage households to save more and spend less, and damage confidence in the general economic outlook and make

people more cautious. That said, there were a number of staff who argued in favour of negative interest rates, both at the time and subsequently.

In March 2020, with the onset of the pandemic, the body of work on unconventional policy tools was drawn upon and proposals presented to the Board on: a yield target; the term funding facility (TFF); forward guidance; bond purchases to address market dysfunction; and additional liquidity provision to the market through open market operations. These measures were adopted.

Subsequently, there was analysis presented to the Board relating to: how the measures were working; strategies for their use and exit; and potential further tools. In 2020, the TFF was increased and extended, and the bond purchase program was implemented. In 2021, work included options regarding the yield target and the bond purchase program – considered on multiple occasions – which ultimately led to the yield target being discontinued in November 2021 and the pace of weekly bond purchases being reduced. The Board also ended the TFF drawdown period in June 2021 as scheduled. In 2022, the Board decided to end purchases under the bond purchase program, and decided not to reinvest the proceeds from bonds as they matured.

Effectiveness

Since their implementation in 2020, assessments of the effects of these various unconventional policy measures on market yields, intermediaries' borrowing and lending rates, asset markets and financing activity were regularly covered in Board papers and public documents.

Unconventional policies can be expected to stimulate economic activity through many of the same channels as conventional monetary policy, by lowering interest rates that are typically affected indirectly through changes in the cash rate. Quantifying the overall effect of unconventional policy tools on output and inflation in Australia is difficult, as not enough time has passed for a full statistical analysis of the period in which these tools were used. However, models and international evidence can provide some guidance.

Simulations for Australia using the MARTIN model suggest that, when policy is at the effective lower bound, deploying a range of unconventional policies together (including policies that lower mortgage rates, business lending rates and bond yields along the curve) can generate outcomes similar to conventional cash rate cuts. However, the channels of transmission differ: unconventional policies, especially those affecting the yield curve, tend to rely more heavily on the exchange rate channel.

As the unconventional policy tools have been discontinued or closed to new activity, more formal reviews have been undertaken, including: an assessment of the TFF (September 2021 Board meeting, supported by internal pieces of work, some of which were published); and a review of the yield target (June 2022 Board meeting, subsequently published). Reviews of the bond purchase program and forward guidance are under way and due for consideration by the Board and public release later this year.[3] A research discussion paper on the effects of the bond purchases has also been published.

The general approach to reviewing the unconventional monetary policies has been to examine whether the policy actions met their objectives, whether there were any unwanted effects and what lessons can be drawn from the experience. The reviews were commissioned by the Board, with the intent of reflecting frankly on what the policies achieved and what lessons could be learned. They benefited from input from a wide range of staff.

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[3] *Update* – These documents have subsequently been published. See Reviews of the Monetary Policies Adopted in Response to COVID-19.

In general, the reviews have concluded that the measures undertaken achieved their objectives of lowering funding costs and supporting the provision of credit to the economy. The package of policy measures was seen as providing insurance against very bad economic outcomes, at a time when the already low level of interest rates limited the scope for lowering the cash rate. Because the measures were introduced as a package, weighing the net benefits for each individual policy measure is complicated and so drawing implications for policy in a forward-looking sense is not straightforward.

A key lesson has been that a greater focus on the upside could have led to earlier decisions to remove or stop adding stimulus. Indeed, following the reviews, the Board has agreed to strengthen the way it considers the full range of scenarios when making monetary policy decisions, especially when they involve unconventional policy measures. This scenario analysis will include the flexibility of policies to respond to changing circumstances and the associated operational and communication challenges.

The following documents provide further details.

Documents: Effectiveness of Monetary Policy Tools

Cash rate		
The Transmission of Monetary Policy through Banks' Balance Sheets (2018)	Conference paper	Link
The Household Cash Flow Channel of Monetary Policy (2016)	*Bulletin* article	Link
Unconventional tools		
The Yield and Market Function Effects of the Reserve Bank of Australia's Bond Purchases (2022)	Research Discussion Paper	Link
Review of the Yield Target (2022)	Published review	Link
Inflation and Monetary Policy (2022)	Speech	Link
The Economic Effects of Low Interest Rates and Unconventional Monetary Policy (2020)	*Bulletin* article	Link

2.2. Internal reviews of the RBA's forecast performance. *(Last 10 years)*

Forecast reviews are an important part of the Bank's forecast process. An annual review of the accuracy of the Bank's economic forecasts is presented to the Board, to assess what we have learned about the economy and our forecasting approach over the preceding year. The annual review draws on a wide range of inputs through the year on topics such as new econometric models and forecast techniques, forecast accuracy for specific variables and alternative sources of information.

Comparisons between Bank forecasts and other economic forecasters are also conducted. That process includes regular discussions with the Treasury and other agencies in Australia, a quarterly survey of private sector economists, and reviews of other available forecasts. These comparisons provide alternative interpretations of the outlook and a benchmark to assess accuracy. The Bank's published forecasts have been a little more accurate than the median market forecaster in the near term, and are around median for longer horizon forecasts.

The following sections summarise the key insights from the Bank's forecast reviews for some recent episodes.

Low inflation and subdued wages growth in the 2010s

Inflation undershot the Bank's forecasts in the second half of the 2010s. A range of factors contributed to lower inflationary pressures over this period, as was the case abroad. It took time for these to be fully appreciated and incorporated into the Bank's forecasts, in part because structural changes in the economy are difficult to gauge in real time in any forecasting framework.

An important reason for these misses was that there was more spare capacity in the economy than had previously been assumed. Labour supply trended higher despite demographic changes. Meanwhile, domestic activity was weaker than expected owing to the larger-than-anticipated effects of fiscal consolidation and, later in the period, a weak housing market.

Relatedly, the Bank persistently overestimated wages growth over much of the decade. The degree of spare capacity in the labour market was larger than estimated in real time, including in the form of underemployment. Of particular note was that net labour force participation increased by more than expected and firms were able to tap the global labour market for skills in short supply. Another factor was that as the mining boom unwound, firms sought to constrain the relatively high level of wages in mining-exposed sectors and regions. Changes in government wages policies and the bargaining environment also played a role. These subdued wage pressures were accompanied by heightened retail competition and declining inflation expectations, which altogether weighed on domestic inflationary pressures.

Australia's experience with inflation and wages growth over this period was common across many other advanced economies. Inflation was typically below central banks' targets throughout the 2010s, even as unemployment rates approached low levels. Similar to the factors seen domestically, explanations from international reviews have focused on: central banks underestimating the extent of slack because they did not initially recognise a decline in NAIRUs; unexpected disinflationary pressures from globalisation and technological progress; declining longer term inflation expectations; and an apparent, but unanticipated, decline in the neutral rate of interest, which has subsequently been attributed to factors such as population ageing, slowing productivity growth, rising inequality, increased risk aversion following the financial crisis, and globalisation.

Weaker-than-expected domestic activity in the late 2010s

As mentioned, domestic GDP growth was weaker than expected in the late 2010s. Consumption and dwelling investment were important contributions to this forecast miss, in large part because the negative spillovers from lower housing prices were more pronounced than expected. Household disposable income also grew more slowly than expected. Alongside ongoing weakness in wages growth, unexpectedly strong growth in tax payments (from improved enforcement) meant that growth in household disposable income was weaker than measures of wages growth would ordinarily imply.

The resilience of economic activity during the pandemic

The onset of the COVID-19 pandemic was the largest economic shock in Australia since the Great Depression of the 1930s. Although the initial downturn in activity was largely in line with expectations, the rebound in activity and the labour market was much stronger than forecast in mid-to-late 2020. While better-than-expected health outcomes played a central role in explaining these forecast misses, the smaller-than-expected impact of subsequent lockdowns reflected the fact that

households and businesses adapted and found ways to operate effectively while in lockdown – a pattern that was also observed in other advanced economies.

Policy support was a key reason why households and businesses were able to adapt as they did during and after lockdowns. The extent of fiscal support by federal and state authorities in 2021 exceeded earlier expectations of the staff. The large and agile policy response ensured household and business incomes were supported during lockdowns so people reverted to spending levels that were very close to pre-lockdown levels as soon as restrictions eased. Private-sector balance sheets were bolstered by these strong income flows and increases in asset prices, which were partly the result of expansionary monetary policy.

The recent increase in inflation

The increase in inflation since mid-2021 has been a very large surprise relative to earlier expectations. In August 2021, the Bank was forecasting that inflation over 2022 would be 1¾ per cent. The Bank is now expecting inflation over 2022 to be around 7¾ per cent. Other forecasters have recorded similar forecast errors for inflation, with a similar experience across most advanced economies.

Both supply and demand side factors have contributed to the increase in inflation. On the supply side, shocks such as the pandemic and Russia's invasion of Ukraine have contributed to higher prices for globally traded goods and energy. On the demand side, the stronger than expected recovery and tight labour market have added to price pressures, particularly in some sectors. That has been accompanied by a shift in inflation psychology; it is easier for firms to put their prices up and the public is more accepting of this compared with the previous environment characterised by restrained pricing and competitive pressures. Further work is under way to understand why there has been such a large surprise and what it means for our understanding of the inflation process.

The following documents provide further details on the Bank's reviews of its forecast performance.

Documents: Reviews of Forecast Performance

Document	Type	Link
Explaining Low Inflation Using Models (2019)	*Bulletin* article	Link
Insights into Low Wage Growth in Australia (2017)	*Bulletin* article	Link
Why Is Wage Growth So Low? (2015)	*Bulletin* article	Link
Estimates of Uncertainty around the RBA's Forecasts (2012)	Research Discussion Paper	Link

2.3. Update of the RBA historical forecast dataset.

An update to this dataset has been provided to the Panel.

2.4. Information about the evolution of the RBA's thinking about the neutral rate of interest (r*) and the level of full employment (including the NAIRU) over time.

The workhorse macroeconomic models used in central banks, including the Reserve Bank, all involve core variables that are not observable but must be inferred from other data. These variables include:

- the *non-accelerating inflation rate of unemployment (NAIRU)*: the rate of unemployment below which wages growth (or inflation) increases, or increases faster than current inflation expectations
- the *neutral real interest rate*: the level of the policy rate, adjusted for inflation, that is neither expansionary nor contractionary.

Estimating these variables is difficult. For example, estimating the neutral interest rate involves inferring the effect of current monetary policy on the economy, which is subject to 'long and variable lags' and the effects of other influences on activity, including fiscal policy and global developments. This also requires an assessment of whether the economy is expanding above or below trend, which requires jointly estimating trend or potential output growth. An appropriate measure of expected inflation, itself unobservable, is then needed to translate the estimated neutral real rate back to the corresponding actual (nominal) policy rate.

The Bank uses a range of models in its forecast framework to account for the uncertainties and limitations of a single model. Consistent with standard and leading-edge practice in central banks, state-space models and Kalman filter techniques are used to estimate the unobserved variables. The Phillips Curve model relating unemployment to wages growth and current and expected inflation is estimated jointly. The models also allow for non-linear relationships. Finally, an average of nine different model estimates of the neutral real rate is taken.[4] Over the past few years, the Bank has also made several changes in estimating these inferred variables to help reduce the degree of uncertainty.[5]

Nevertheless, the inherent uncertainties remain large, changes are difficult to identify in real time and even after the fact, and the Bank typically does not make these inferred variables the centrepiece of its communication.

These uncertainties aside, estimates of both the NAIRU and neutral real rate are lower than they were a decade ago. The decline in the NAIRU is difficult to explain and may have been driven by improved job matching by internet job sites, shifts in bargaining power and path-dependence/learning by employers. The decline in the neutral rate has been variously related to declining potential growth, higher risk aversion, rising inequality in some parts of the world and the fact that most models do not adequately allow for fiscal developments. Such trends are consistent with international experience, in part because forces underpinning the structural decline in global risk-free rates have placed downward pressure on interest rates abroad as well as in Australia.

These developments had a downward influence on the policy rate over an extended period. That was especially apparent in the period around 2019, when the cash rate was reduced not because of a deterioration in economic activity but rather a judgement that the economy could support a lower rate of unemployment than previously thought likely.

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[4] Each model follows one of three approaches: financial market expectations of future interest rates; estimates from a semi-structural time series model of the economy; or the implied long-run convergence point of a more flexible time series model of the economy.

[5] This has included: allowing for a break in economic behaviour at the start of the inflation targeting era; bringing overseas experience into assessments of the NAIRU; using disaggregated regional data to estimate the curvature of the Phillips Curve relationship; adjusting for the effects of the pandemic and other recent supply shocks; and refining assessments of potential growth and inflation expectations.

The Board recognises that estimates of the NAIRU and neutral real interest rate are highly uncertain and can change over time. Given this, it uses these estimates as just one input into its decision-making and is guided as much by the data as it is by estimates of unobservable variables.

The following documents provide further details.

Documents: NAIRU and Neutral Real Interest Rate

NAIRU		
Is the Phillips Curve Still a Curve? Evidence from the Regions (2021)	Research Discussion Paper	Link
The Labour Market and Spare Capacity (2019)	Speech	Link
Watching the Invisibles (2019)	Speech	Link
The Economic Outlook and Monetary Policy (2019)	Speech	Link
Uncertainty (2017)	Speech	Link
Estimating the NAIRU and the Unemployment Gap (2017)	*Bulletin* article	Link
Neutral real interest rate		
Inflation, Productivity and the Future of Money (2022)	Speech	Link
Uncertainty and Risk Aversion – Before and After the Pandemic (2021)	Speech	Link
How Do Global Financial Conditions Affect Australia? (2019)	*Bulletin* article	Link
Global Influences on Domestic Monetary Policy (2017)	Speech	Link
The Neutral Interest Rate (2017)	*Bulletin* article	Link

2.5. Information about the RBA's forecasting tools and methodology, including the role of broader engagement (e.g. business liaison) in informing forecasts. What new things did the RBA do to address unique challenges of the pandemic and improve forecasting performance? *(Last 5 years)*

Forecasting tools and engagement

The Reserve Bank publishes its forecasts of economic activity, the labour market and inflation each quarter in the *Statement on Monetary Policy*. In addition to the numerical forecasts, the *Statement* also discusses the broad analysis underlying these forecasts and the main risks and uncertainties. The forecasts that are published in the *Statement* are discussed at the Board meeting three days prior to publication and are developed through a series of internal meetings and senior-level review over the preceding month. Outside of this quarterly cycle, the forecasts are kept under review by the staff, with interim updates presented to the Board during times of rapid change in the economy.

The forecasting process has five key elements:

1. **The day-to-day assessment of trends in the economy.** The starting point is to understand current conditions in the economy and the financial system and what that suggests for the

future. Staff continually monitor the pulse of the domestic and global economies, and developments in financial markets and the financial system as a whole. Data updates are analysed, including how developments are tracking relative to previous forecast expectations.

2. **The use of formal econometric models for specific variables.** This includes simple, single-equation models and multi-equation models. Forecasts for each variable typically draw on multiple model inputs, rather than just a single model, because of the considerable uncertainties in the modelling process. Most of the time, staff look for the central tendency of the various models and use them to inform a more judgemental process. Models are regularly reviewed and refined, with new methods adapted from the literature.
3. **Information obtained from the Bank's liaison program.** Each quarter Bank staff across the country conduct around 200 meetings with businesses, agencies and community groups to better understand what is happening right now and what is likely to happen in the future. This information is systematically gathered and summarised in the form of Likert scales. A key feature of the liaison program is the scope to adapt the non-core topics for discussion and engagement with the Bank's contacts, as well as the number and length of liaison meetings. This information informs the near-term economic forecasts ('nowcasts') and assumptions used in the forecast models, and can explain the underlying drivers of developments (including what conditions might see particular outcomes in the future). There are several examples where liaison was particularly important in the years leading up to the pandemic, including: identifying the drivers of subdued wages growth and weak retail sector inflation; expanding our understanding of the role of interest rates in business investment decisions when hurdle rates are sticky; the impact of natural disasters, such as bushfires and floods, on local economies; and the scale and the timing of investment in the resources sector. In these cases, liaison provided us with valuable information that was not available elsewhere and had a significant role in shaping our forecasts.
4. **Insights and scenario analysis using MARTIN**. Economic Group's full-system model, MARTIN, has become integral to the forecasting process in recent years, particularly in developing alternative scenarios to the baseline forecasts. The use of MARTIN allows us to capture economic relationships that are similar to those used in constructing the baseline forecasts, but with fewer resources. As well as facilitating more scenario analysis, MARTIN has been used to extend the forecasts beyond the usual two- to three-year horizon to assess the medium-term outlook. MARTIN forecasts conditioned on staff near-term forecasts are also used by the forecasting teams to complement their single-equation models. Other model-based tools have also been used internally to help assess the economic outlook, including model-implied uncertainty bands and forecast error decompositions.
5. **Applying judgement.** The forecasts are discussed with senior management and in some cases there are judgement-based adjustments. The Bank's forecasts are also compared with those of other forecasters as a sense check; if we are far from other forecasters, there should be good reasons for this. This process includes extensive engagement with the Australian Treasury and other agencies, and discussions with and surveys of forecasters in the private sector.

For the external sector, the Bank's forecasts for economies other than China have been based on the consensus of external analyst forecasts since 2020. A staff assessment found little difference in forecasting accuracy between the Bank and consensus forecasts. This change allowed staff resources to be redirected to thematic cross-country analysis of developments that are relevant to our understanding of the Australian economy. Consensus forecasts are timely, frequently updated and

widely used, and include a consistent set of forecasts for activity, inflation and unemployment. The staff continue to forecast the outlook for China, drawing on the expertise of staff in Beijing.

Innovations in response to the pandemic

A range of innovations were brought into the forecasting process in response to the unique challenges of the pandemic. In particular:

- *The use of a range of more timely data was expanded*. That has included data on payments patterns for consumer spending and population mobility, labour market statistics such as higher frequency measures of job advertisements, and text analysis to provide a timely read on economic activity. These indicators helped to assess the state of the economy during a period of rapid change and improved near-term forecasting, particularly for consumption.
- *Forecast methods were refined and scenario analysis expanded*. MARTIN was adapted to capture the specific characteristics of the pandemic and policy response, including through the fiscal, financial and external sectors. Scenario analysis was used extensively to better understand the economic uncertainty associated with different health outcomes. Scenarios have also been an effective way to communicate the extent of uncertainty about the outlook to the broader public.
- *The intensity of liaison and other engagement increased*. The liaison team held 600 interviews over the first five months of the pandemic in 2020, which was 65 per cent higher than usual. A set of special questions was introduced to address pertinent issues (e.g. on hours worked, supply chains, office space requirements, input cost and price pressures, and fiscal support). State-level analysis increased, given the different experiences with, and policy responses to, COVID-19. Finally, Bank staff engaged more intensively with the Australian Treasury, state treasuries, the Australian Bureau of Statistics and other government agencies to provide support and to exchange ideas and information.

Forecast reviews and continuous improvement

Economic outcomes are subsequently examined against our expectations to see what we can learn. This process of continual testing, learning and re-testing is at the core of our forecasting process. An important part of this is the annual forecast review conducted by staff in Economic Group to assess the accuracy of the Bank's economic forecasts over the past year. Forecast methods are also discussed and compared in our external engagement with other agencies, central banks and the private sector. In 2016, Adrian Pagan (University of Sydney) and David Wilcox (Federal Reserve Board of Governors) were commissioned by the Bank to conduct a formal external review of Economic Group's forecasts and analysis. The development of the MARTIN model and the shift to using consensus forecasts for overseas economies were in large part in response to the review's recommendations.

The following documents provide further details.

Documents: Forecasting Tools and Liaison

The Reserve Bank's Liaison Program Turns 21 (2022)	*Bulletin* article	Link
Tracking Consumption during the COVID-19 Pandemic (2022)	*Bulletin* article	Link
MARTIN Has Its Place: A Macroeconometric Model of the Australian Economy (2019)	Research Discussion Paper	Link
Meet MARTIN, the RBA's New Macroeconomic Model (2018)	*Bulletin* article	Link
External Review of RBA's Economic Forecasts and Analysis (Pagan and Wilcox Review) (2016)	External review	Link
Economic Forecasting at the Reserve Bank of Australia (2016)	Speech	Link
The Role of the RBA's Business Liaison Program (2015)	Speech	Link
The RBA's Business Liaison Program (2014)	*Bulletin* article	Link

2.6. The decision-making documents that are presented to the Reserve Bank Board to support monetary policy decision-making. *(Last 5 years)*

Board members are provided with a range of materials to inform their decision at each meeting. These papers are delivered four days before the Board meeting, to ensure members have adequate time to evaluate the information and consider what this means for policy settings, and to allow for the information to be as up to date as reasonable. These papers are then supplemented by presentations at the Board meeting.

Three papers are provided to Board members at every meeting:

- The **Economic Conditions** paper covers key macroeconomic developments in the international and domestic economies. It is mostly a factual account of recent developments. Historically, this paper was focused on short-term changes in the data, but in recent years those facts have increasingly been presented in a thematic and medium-term context.
- The **Financial Markets** paper discusses financial conditions in international and domestic markets. International coverage including policy settings and communication by other central banks, and developments in bond, credit, equity and foreign exchange markets. Coverage of domestic financial conditions includes money, bond, credit and equity markets, and the evolution of credit growth – with a focus on the first stage transmission of monetary policy – and how the Bank's balance sheet has changed.
- The **Monetary Policy** paper summarises the most important messages in the Economic Conditions and Financial Markets papers, before presenting the policy considerations that staff view as most relevant for the Board's deliberations. The recommendation to the Board has historically been framed as a specific suggestion for whether and by how much policy should be adjusted. However, on a small number of occasions the recommendation has been less specific, focusing instead on a limited number of options.

Two other papers are also produced for Board meetings with a fixed schedule:

- The **Economic Outlook** paper is presented to the Board four times a year, shortly before the release of the *Statement on Monetary Policy*. It is produced by Economic Group and discusses

forecasts for the global and domestic economy. A significant portion of this paper is devoted to the risks around these forecasts; these are sometimes drawn out by presenting scenarios.

- The **Financial Stability** paper is produced by the Financial Stability Department and is provided to the Board twice a year, shortly before the release of the *Financial Stability Review*.

Over the past decade, these regular papers have been supplemented by 'special board papers'. These papers cover topics that warrant a separate discussion because of their importance and often medium-term nature; they were introduced in response to a desire by Board members to spend more time on issues of strategic relevance to monetary policy. In recent years, the Board has typically discussed up to eight special board papers annually. Examples from recent years include the neutral interest rate, various aspects of unconventional monetary policy (both options and mechanics), inequality and monetary policy, and the implications of climate change. The topics for these papers are chosen in consultation with Board members, who review a list proposed by the Governor and add their own requests for topics each December. The Governor decides on a planned list for the year ahead, which is adapted as the economic situation evolves and new issues emerge.

At the Board meeting itself, the Assistant Governors for Economic Group and Financial Markets Group deliver presentations. These presentations cover the key themes relevant for the Board's discussion that month, and are discussed in advance with the Governor and Deputy Governor. Other presenters attend the Board meeting when the Financial Stability or a special board paper are on the agenda.

3. Communication

3.1. Internal analysis of the public's engagement with publications of the RBA, including number of unique views for flagship reports (SMP, FSR, Board Minutes, etc.) and engagement with press conferences. *(Last 5 years)*

The Bank communicates its policy decisions and related analysis through publications, speeches, press conferences (specifically, media and markets briefings) and media releases. This helps to ensure a high degree of transparency around the Bank's decision-making, both to facilitate accountability and promote understanding of those decisions in the community. The Bank's website is an important vehicle for this public engagement, and is visited by around 370,000 users per month.[6] Website traffic and other indicators of how the public engage with these products are regularly monitored and analysed by the Communications Division.

Flagship publications

Readership of the *Statement on Monetary Policy* (SMP) and *Bulletin* both increased during the COVID-19 pandemic, with the Economic Outlook section consistently being the most viewed chapter of the SMP. Readership of the Governor's statement issued following monetary policy decisions has increased more recently, particularly since the Board began raising the cash rate target in May 2022. The monetary policy minutes following Board meetings tend to attract a smaller and probably narrower readership than the policy announcements themselves.

Senior staff present the key themes of the SMP to business and community groups across the country after publication each quarter. The consistent feedback from these and other such discussions is that the Bank's publications provide a valued source of impartial and rigorous analysis on the state of the economy and financial markets.

The Bank's flagship products have evolved over time. In 2020, an 'At a Glance' overview was added to the *Financial Stability Review* (FSR) to allow users who would otherwise not read the publication to have easy access to the key content, as is becoming common practice internationally for many similar publications. The SMP has become more thematic and narrative based. Several further changes are under consideration for the SMP, with a view to ensuring it is accessible to a wide audience. That follows a recent internal review of viewership, the flagship reports of other central banks and changes in audience expectations, and is an initiative of the Bank's external communication strategy.

Press conferences

During the COVID-19 pandemic, the Bank began holding public press conferences (with media and financial market participants) when there was a significant shift in the monetary policy stance. Three press conferences were held in 2021, two in 2020 and one in 2022 to date. Each of these has been held on the afternoon of a Board meeting so that the Governor can explain policy decisions in more detail and answer questions. The sessions are broadcast live on the Bank's website and on television (typically, ABC News and Sky 24).[7] In June 2022, the Governor was interviewed on the ABC's *7.30* program to further explain the Board's decision to begin lifting the cash rate from emergency settings.

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[6] Each unique device ID is counted as a separate user; excludes devices connected to the Bank's network.

[7] In addition to live-streaming of audio and video, the Governor's statement is published on the website at the same time, with audio and a transcript of the question and answer session published soon after. Questions are not pre-

These public appearances have been in addition to the longstanding practice of fielding questions after regular public speeches, as well as appearances before parliamentary committees. Altogether, the Governor typically makes a public appearance on a monthly basis. All such public appearances are live-streamed and posted to the Bank's website, which is less commonly done among other central banks (a number of which post videos of press conferences and only some speeches).

Between 30 and 50 individuals have attended each press conference, around half of whom have been media representatives and half private-sector economists at the last few sessions. It is difficult to measure viewership by the broader public; this has been up to several thousand live streaming through the Bank's website, plus those who have watched the broadcast via television networks.

Initiatives to increase public engagement

The Bank has worked to enhance its external communications in recent years, and developed an external communications strategy in 2021. The strategy includes improving the accessibility of information, such as by modernising the Bank's website (making it more user-friendly and easier to access popular content, and building a system to manage content more effectively); emphasising and extending the ways in which the Bank listens to the public; making greater use of videos and podcasts; and using new approaches to track and evaluate communication.

3.2. Analysis or surveys about public trust in the RBA and what external stakeholders think about the RBA? *(Last 5 years)*

The Bank gauges public sentiment towards the organisation through regular direct and two-way engagement with a broad range of external stakeholders. These interactions provide insight into how the Bank is perceived and issues of concern for different groups in the community, which can vary substantially. They do not involve any formal surveys, but information is collated, analysed and reported across the Bank. That engagement includes:

- **Media**: The Bank engages with the media via background discussions and by hosting lunches for the Governor and other senior staff to engage with key media participants, as well as Q&A sessions at regular public appearances. The Bank's Communications Division monitors media coverage, and has increased the scope and depth of this work in recent years to better gauge which issues are important to the public, analyse sentiment, and ensure coverage is accurate to support public understanding of the Bank's actions and responsibilities. Over this period, the sentiment of media coverage of the Bank has been largely neutral, with non-neutral coverage on balance more negative than positive.
- **The general public**: On average, the Bank receives around 3,000 public enquiries per year by phone and email; in recent years, it has also received comments on social media posts and direct messages on social media platforms. Emails to the Bank are frequently addressed to and read by the Governor. In the past year, there has been a notable increase in questions and comments on monetary policy decisions, particularly from members of the public wanting to understand why interest rates were being increased. Over this period, most enquiries have been general enquires for information, while around 6 per cent were complaints. Board members also engage with the

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screened, and effort is made to ensure all participants are given fair opportunity to ask questions. No priority is given to particular representatives, except to ensure balance between market economists and media if necessary.

general public through dinners with representatives of local communities when Board meetings are held outside Sydney.

- **Academic economists**: The Bank has convened a panel of academic economists annually since 2019 to hear external feedback and perceptions of the Bank, with a focus on monetary policy frameworks and settings. Diary notes are distributed widely across the Bank (although the panel operates under the Chatham House Rule). The Bank has recently announced that in future this panel will be chaired by the Governor, increase in size and meet more frequently (at least biannually).
- **Private-sector economists**: The Bank has had longstanding engagement with private-sector economists through various channels. To strengthen the dialogue, it was recently announced that a panel of private-sector economists will also be established. As with the academic panel, this will be chaired by the Governor, involve senior Bank staff and meet at least biannually. The agenda for the first meeting, to be held in October 2022, will include the current challenges facing the economy and the appropriate role of forward guidance in monetary policy (ahead of a review of the Reserve Bank Board's approach to forward guidance to be discussed at its November meeting).
- **Businesses and community organisations**, via the Bank's liaison program. *The liaison program is discussed in depth in question 2.5.*
- **Small businesses**, via the Small Business Financial Advisory Panel, which meets annually to discuss issues relating to the provision of finance, as well as the broader economic environment for small businesses. The Bank also meets with a number of small businesses and small business groups through the liaison program.
- **Financial market participants**, through the Bank's regular market operations and liaison with bank officers and market participants. The latter has become more structured in recent years, with the establishment of formal market intelligence rounds. Bank staff also attend various forums that provide a further opportunity to hear from market participants, including forums with AFMA, and the Bank participates in and chairs the Australian Foreign Exchange Committee.
- The **education sector**, via the Educators Advisory Panel and the wider work of the Public Access and Education team, to promote economic education and literacy including among secondary school students.

Some themes from these engagements in recent years have included:

- The Bank is respected as an independent, authoritative organisation that, over the past 30 years and more, has played an important role in supporting economic stability. The Bank is a valued source of impartial and rigorous analysis on developments in the Australian economy, financial markets and financial system.
- During the late 2010s, some observers criticised the Bank for being too focused on financial stability and not lowering interest rates further, which would have stimulated growth in employment and wages. Relatedly, some felt that the Bank should have communicated its policy reaction function more clearly during this period, particularly with regard to how it was trading off its different statutory objectives.
- During the pandemic, policies to support the economy were well received and seen as supporting public confidence in partnership with the government's broader fiscal policy and

health measures. Communication at the time was seen as clear, with forward guidance providing valued assurance of ongoing monetary support.

- The subsequent withdrawal of policy stimulus has been subject to a number of criticisms:
  - The disorderly cessation of the yield target resulted in some reputational damage to the Bank, most prominently in the financial markets community.
  - The earlier-than-expected increase in the cash rate in May 2022 led to criticism of the Bank's earlier guidance around how long the cash rate would remain low. While that forward guidance had been conditional on the state of the economy, it proved difficult to ensure that this was understood across all parts of the community and not perceived as a promise.
  - Finally, the Bank has also been criticised for holding interest rates at low levels for too long given the rapid economic recovery and increase in inflation.
- Over time, media coverage and public enquiries have highlighted the effects of monetary policy on different groups in the community, given that changes in interest rates affect borrowers and savers differently. There was a particular focus on the adverse effects on the interest income of savers (especially retirees) when interest rates were reduced through the 2010s, while the more recent focus has been on the adverse effect on the cost of servicing debt for borrowers as interest rates have risen.
- Over the past couple of decades, there has been ongoing attention on the extent to which the Bank's policies have contributed to the sustained rise in housing prices.

4. Governance

4.1. Documentation on the functioning of the Board, such as a Terms of Reference/Board Charter and performance assessment framework. *(Present)*

The Board draws its authority and responsibilities from section 10 of the *Reserve Bank Act 1959*; it does not have a separate Terms of Reference or Board Charter. The Board undertakes an annual survey of its effectiveness rather than having established a performance assessment framework (see below).

The *Statement on the Conduct of Monetary Policy* sets out the agreed understanding between the Governor, as Chair of the Reserve Bank Board, and the Government on the key elements of Australia's monetary policy framework. The terms of reference for 'other policy' responsibilities and matters relating to the financial statements, Audit Committee Charter and work health and safety matters are derived from legislation (the Reserve Bank Act, the *Public Governance, Performance and Accountability Act 2013* (PGPA Act) and the *Work Health and Safety Act 2011* (WHS Act), the latter to the extent it may apply to the Board); these are discussed further below in question 4.4.

Documents: Board Governance	
Statement on the Conduct of Monetary Policy (2016)	Link

4.2. The number and share of Board decisions about the cash rate target that agreed with the recommendations made by the RBA Staff to the Board. *(Last 10 years)*

At each of its meetings over the past decade the Board has voted in support of the recommendation made by the staff. This should not be interpreted as the Board being a rubber stamp for the staff recommendation. It is important to note the following:

- The Board meets monthly and the staff recommendation in any particular month is influenced by the Board discussions at previous meetings. It is a rare event that the recommendation would come as a surprise to Board members. At most meetings, the Board has some discussion of possible future policy actions and this discussion helps shape the staff recommendation at subsequent meetings. The decision process is best described as iterative and the recommendation in any month reflects a combination of the staff's analysis and the discussion of the Board at preceding meetings.
- There have been a small number of occasions where the staff have not put a specific recommendation to the Board, but rather set out a couple of options to be worked through at the Board meeting. This has been the case when the economic situation is fluid and uncertain, and where previous discussions have not fully covered the various possibilities. When no explicit recommendation has been made, the Board has reached a decision through discussion.
- The Governor often discusses the staff view and whether there is a consensus or not, as well as the arguments in favour of the case contrary to the recommendation.
- At each meeting, the Governor asks all Board members for their views about the current policy decision, with the discussion often touching on the outlook and how members' views are evolving about future policy decisions.

4.3. Results of the RBA's annual survey of Board members about its own operations and processes. *(Last 5 years)*

Each year since 2014 the Board has completed a survey of its effectiveness, with the results discussed at its December meeting. Several main themes have emerged from these surveys, to which the Bank has responded (sometimes with some iteration to achieve the preferred model), including the following:

- The Board assesses the papers and presentations as being of a high quality.
- Board members support the current frequency and length of meetings and value meetings and community engagement outside Sydney.
- Members have sought more papers on longer-term issues (the Bank responded to this with the addition of a special paper at most meetings).
- It has been noted that, unlike in the case of corporate boards, members have little involvement in succession matters or the appointment of new Board members, or overseeing the management of the Bank.
- Members have observed that staff could make more effective use of the expertise of Board members.
- Members sought more time for discussion and shorter staff presentations (the Bank responded to this with more focused presentations, as well as the Governor ensuring there was more time for general discussion and by inviting members to submit questions for discussion prior to the meeting).
- Members value post-meeting lunches with people who offer a broad range of perspectives.

4.4. Internal analysis about the format of meetings, such as time spent on various categories of Board considerations (e.g. organisational strategy, organisational management and operations, monetary policy deliberations, etc). *(Last 5 years)*

The Board meets 11 times a year, on the first Tuesday of every month (except in January). Meetings typically run from 9:00 am until around 12:45 pm and are followed by a lunch with an invited guest. Prior to the pandemic, two meetings a year were held outside Sydney and followed by a community dinner. Papers are provided to the Board on the Friday morning prior to the meeting.

Monetary policy deliberations

The bulk of the Board meeting is taken up with the monetary policy decision. The meeting starts with presentations of the economic data and outlook by the Assistant Governor (Economic) and financial market developments by the Assistant Governor (Financial Markets). These presentations typically take around two hours. They are usually followed by the presentation and discussion of a special paper; on some occasions, the paper will be related to the current monetary policy decision.

The Governor then summarises the policy issues and the Bank's recommendation. Following that, members engage in a free-ranging discussion, which is concluded by the Governor asking each member for their view on the current policy decision.

The finalisation of the draft of the post-meeting statement is left to the Governor, with members sometimes offering broad observations on communication.

As noted above, the Board survey each year includes questions related to the conduct of meetings. A key observation in recent years was that members sought shorter presentations with more focus on longer term issues and less on the flow of data, to facilitate more discussion. In response, presentations have become more focused around a few key questions and the Governor has ensured more time for general discussion. Board members are invited to submit questions and suggested topics for discussion the day before the meeting, to help structure the meeting appropriately.

Organisational strategy, management and operations

Under the *Reserve Bank Act 1959*, the Governor has the statutory responsibility to manage the Bank, as the accountable authority. According to the Act, the Board 'is responsible for the Bank's monetary and banking policy, and the Bank's policy *on all other matters, except for its payments system policy*' (emphasis added). This last clause was added when APRA and the Payments System Board were established in 1998. Its intent was to make clear the Reserve Bank Board retained the broader responsibilities for the Bank's policies beyond those that relate to the payments system.

The implications of having responsibility for 'policy on all other matters' have been discussed on a number of occasions and external legal advice has previously been obtained (albeit some time ago). The Board has decided on an approach to these other policies in which the Governor provides an annual report to the Board. That report lists the policies that set a strategic direction or articulate a framework for decision-making in the areas of governance, risk, human resources, health and safety, and major assets and resources. It also covers significant changes to these policies over the preceding year and details their compliance arrangements. The Board has not seen its responsibilities as extending to the approval of individual policies, nor the Bank's budget and major projects. Rather, these are determined and implemented by the Governor.

That said, the Board and its sub-committees do provide advice or fulfil other responsibilities on some matters related to the operation of the Bank. Of note is the Audit Committee, which is structured as a sub-committee of the Board and comprises non-executive Board members and external members. The Audit Committee reviews the appropriateness of the Bank's financial reporting to assist the Board (which is required to approve the Bank's annual financial statements in terms of the Reserve Bank Act and the PGPA Act). The Audit Committee also assists the Governor with performance reporting, systems of risk oversight and management and systems of internal control; these are duties that sit with the Governor under the PGPA Act. In practice, this has included regular reviews of the Bank's major activities in areas such as IT, risk management, anti-money laundering/counter-terrorism financing and building works. The Audit Committee typically meets four times per year and its Charter is approved by the Board (in terms of the Reserve Bank Act). Since the advent of the WHS Act, it has also been the practice of the Board to receive and discuss an annual report, supplemented by interim reports, on WHS matters that are prepared for the Bank's Executive Committee.

Board survey results indicate that members feel there is an appropriate balance of time spent between monetary policy and other matters, given the focused nature of the Board's statutory responsibilities.

Further background is available in the following document:

Documents: Meeting Format and Board Responsibilities		
Reserve Bank Board Audit Committee Charter (2022)	Charter	Link

4.5. Reviews of the functioning of the RBA's Policy Discussion Group and Pre-Policy Discussion Group meetings. *(Last 10 years)*

The current policy discussion process has been refined over many years. It is a sequence of policy meetings starting at the section level in Economic Group and Financial Markets Group and feeding up into more senior internal meetings and ultimately the Board meeting (Figure 1). The process is designed to seek views from all staff in policy departments, not only the senior staff.

Figure 1: Timeline for Internal Board Processes

1. *Two weeks prior to the Board meeting:* Departments circulate 'Monthly Reviews'. These documents provide the most recent information on domestic economic conditions, domestic markets and financing conditions, and developments in international economies and financial markets. These documents form the basis of the Economic Conditions and Financial Markets board papers.[8]

2. *Two weeks prior to the Board meeting:* The Governor and Deputy Governor attend Group-level meetings (pre-Policy Discussion Group, or pre-PDG) with all policy staff in Economic Group and Financial Markets Group. At these meetings staff present key updates in their various areas of responsibility, which is followed by a discussion of monetary policy. Lead-off speakers are sometimes scheduled to make different cases for policy options. Staff are encouraged to offer their views on the recommendation to the Board. In most recent months, this has included views on the size and timing of interest rate increases. In the past couple of years, it included views on the use of unconventional monetary policy tools, their size and when it would be appropriate to cease them.

3. *One week prior to the Board meeting:* Policy Discussion Group (PDG) is attended by the Governor, Deputy Governor, Assistant Governors, Heads and Deputy Heads of policy departments, Secretary and Deputy Secretary.[9] These staff meet to discuss the draft board papers and the policy recommendation. Questions and comments are sought from participants on the information provided in the papers in order to probe the narrative. Following this, the meeting is open for views on the recommendation to the Board. There is typically very open discussion at this point, and there are sometimes strong differences in views.

8 During months in which the economic forecasts are presented to the Board, the internal board process is supplemented with a forecast review process that is internal to Economic Group. This includes papers detailing the initial forecasts and a review meeting for all staff in Economic Group. When scenarios are considered helpful for the policy process, there is a further parallel process to develop plausible scenarios.

9 In months where a CPI release has occurred, the senior manager of Prices, Wages and Labour Market in Economic Group attends the PDG meeting. Senior managers also attend when they are lead author on a special board paper.

4. *Following PDG:* The Monetary Policy paper, including the recommendation to the Board, is finalised via deliberation between the Governors and Assistant Governors of the policy groups. The range of views that emerges in the pre-PDG and PDG discussions is regularly conveyed to the Board – primarily verbally at the meeting, but sometimes also in the policy papers.
5. *First Tuesday of the month:* The Board meeting.

Following the Board meeting, it has become standard practice over the past decade for the Assistant Governors of Economic and Financial Markets Group to summarise to their staff how the discussion at PDG and the Board meeting proceeded. These summaries do not attribute any comments to specific Board members or staff. These meetings are an opportunity to convey key questions for the staff and Board to consider in subsequent meetings, and have frequently become a forum for frank policy discussion.

There have not been any formal reviews of the functioning of the pre-PDG or PDG meetings in recent years. Nonetheless, there have been ongoing changes to the format and structure of the pre-PDG meetings to promote open policy discussion among policy staff at all levels. For example:

- From the mid-2000s, the Governor and Deputy Governor began attending these meetings to directly hear views from a wide range of staff.
- Over the past decade, the set-piece presentations have become more focused on thematic issues that raise open questions for discussion rather than updates on the flow of data.
- The amount of time dedicated to policy discussion has increased, especially in the Financial Markets meeting, where policy decisions and strategy previously received little discussion.
- 'Lead-off' speakers are used more frequently to summarise views within subsets of the Group and/or present alternative views for discussion, to help convey the views of staff who are less comfortable speaking in larger forums.

There have been fewer changes to the format and structure of the PDG meetings. However, in recent years, the Governor as Chair of the meeting has placed increased emphasis on ensuring that participants are actively called upon to share views, and the Governor often seeks comments on the communication challenges associated with particular policy options. The greater use of special board papers has also meant that a wider group of staff have had an opportunity to attend to present and express their views on the stance of monetary policy.

5. Institution

5.1. Results of the RBA's biennial engagement survey of staff, including comparisons with external organisations. *(Last 10 years)*

The Bank has conducted staff-wide engagement surveys on a two-yearly cycle since 2013. The purpose is to gain insights from staff on factors that are impacting positively or negatively on their employment experience. The most recent survey was conducted in November 2021.

A third-party provider has conducted the survey since its inception, to ensure it is anonymous and so the Bank's results can be compared with a large sample of domestic and international organisations. The Bank-wide results are communicated to all staff and detailed briefings are held at a department level. Following analysis of the results of each survey, a set of actions are developed at both a Bank and department level to address those areas where change is needed.

Since the survey's inception, overall staff engagement has been positive. The net positive response in the survey has been between 80–85 per cent, and was most recently above the national average among other organisations. Areas where the Bank has consistently performed well are staff's connection to the values, ethics and objectives of the Bank, and the Bank's leadership and management. The Bank has tended to underperform on a range of career-related issues (recognition, rewards and retention) and around risk culture (empowerment and organisational change).

Career-related issues

A Bank-wide 'job families' program was introduced in early 2021 to assist staff development and career opportunities. This introduced an additional career stage to provide a marker of successful progress among analysts. There has also been an increased rate of promotions as the labour market has tightened and staff turnover has risen. A new pilot project has been launched to facilitate better career conversations around employee motivations and career aspirations.

The most recent survey showed an improvement in staff views regarding career opportunities; however, it also showed that staff views of rewards, retention and work pressures had declined from previous years. To address these concerns, the executive sought further feedback and agreed on actions to manage workload. The Bank also undertook further analysis of fatigue and work pressures in an externally run survey of psychosocial risks in 2021. Actions taken included: de-prioritising some enterprise-wide projects; emphasising that management were empowered to prioritise; simplifying processes; approving more headcount for key areas of work pressure or new functions; and bolstering recruitment capabilities. A deep dive on workload and fatigue was presented to the Risk Management Committee in May 2022 with a set of recommendations endorsed. Analyst roundtables were held on graduate remuneration to encourage transparency and openness on remuneration across cohorts. This year, the Bank published remuneration entry points for all roles at the Bank to provide greater transparency.

Risk culture

A key theme through staff engagement has been excessive risk aversion. As an institution, the Bank takes quite large risks to deliver on its responsibilities (e.g. balance sheet tools for monetary policy, or major innovations such as RITS Fast Settlement Service and Next Generation Banknotes). However, there is evidence that many staff are averse to innovating and taking risk, tend towards 'gold plating', and prefer to push decision-making upwards. There have also been related signs that the culture is

not particularly conducive to 'speaking up', be it to provide constructive challenge on the options for monetary policy, for example, or to call out instances of unethical behaviour. Alongside the engagement survey, these findings came from the psychosocial risk survey and a survey of risk culture in 2018.

In response, there has been a significant program of work in recent years to address these various aspects of risk culture. This has included:

- an updated risk appetite statement to articulate areas where we are comfortable taking more risk, which highlights the costs of risk reduction and value of innovation; this statement has been complemented by departments self-assessing their risk cultures and practices
- internal reviews of the public reports on culture at the Commonwealth Bank and Westpac and the findings of the Financial Services Royal Commission, to draw possible lessons for the Bank
- an informal group of department heads working on ways to encourage staff to 'challenge', by questioning policy options and accepted ways of doing things
- increased leadership training, including on 'EQ', conflict resolution and psychological safety of staff (recommendations from the psychosocial risk review), as well as on running inclusive meetings
- a program of work to encourage speaking up, including direct messaging from the Governor, establishing a 'Speak up Network' and providing resources to assist people who want to speak up
- launch of the Innovation Academy (an online hub for upskilling and learning about innovation mindsets, techniques, academic theory and practices)
- goals for all staff related to risk and innovation.

Engagement survey scores have since improved, including on empowerment and encouragement to innovate and find new ways of doing things. That said, improving risk culture remains an ongoing focus area for the Bank.

Other insights

The extent to which staff rate senior management effectiveness in decision-making and communication has shown steady improvement since 2015. A Bank-wide initiative that has been introduced is a significant increase in leadership development. Considerable effort has also been placed on communicating and explaining the rationale of decisions. Examples of this include publishing a Bank-wide summary of decisions taken by key executive-level committees.

In addition to the engagement survey, the Bank has been making increased use of pulse surveys. A new tool was introduced in 2021 to enable both regular and ad hoc surveys to be undertaken. There have since been 12 pulse surveys, including to gauge the success of initiatives introduced as a result of the 2021 Engagement Survey. In addition, a Bank-wide pulse survey on hybrid working was conducted in 2022, which found a high level of overall satisfaction (score of 93, with little variation across demographic groups) and identified several areas for further attention.

5.2. Results of any RBA stakeholder surveys. *(Last 5 years)*

This question is addressed in the answer to question 3.2.

5.3. RBA's current Diversity and Inclusion Plan *(Current)*; and Analysis of staff diversity and/or reporting against the Diversity and Inclusion Plan, including along the dimensions of gender, education, ethnicity and Indigenous Australians. *(Last 5 years)*

The Bank established a Diversity and Inclusion (D&I) Council in November 2016. Prior to that it had a D&I Committee, which was chaired by the Head of Human Resources with a number of employee representatives. In 2016, however, it was decided to uplift D&I in the Bank with the creation of the D&I Council and six Employee Resource Groups (ERGs) – Gender Equity, Flexibility, Indigenous Australians, Accessibility, Race and Cultural Identity, and LGBTI +Allies.[10] To underline the importance of the D&I Council, it is chaired by the Deputy Governor. Members are the Chairs and Executive Sponsors of the ERGs, who are mostly senior executives as well as key HR Representatives such as the Head of HR, Head of Talent Development and the Senior Consultant Leadership and Diversity.

At an enterprise level, the Bank's actions over the past five years are captured in the D&I Plan 2018–2021 and the D&I Strategy from the end of 2020.

- *D&I Plan 2018–2021*: The enterprise actions focused on reviewing the effectiveness of the Bank's diversity network, encouraging staff to raise D&I issues, D&I training and awareness for staff and managers, and D&I events. The D&I Plan also detailed a large number of actions and initiatives from the individual ERGs in support of D&I in their specific areas.
- *D&I Strategy*: This strategy was the outcome of a review of the state of D&I at the Bank, which incorporated workforce data, feedback from our people and guidance from cross-industry good practice. The Strategy sets out the Bank's D&I Vision as well as three key strategic focus areas: Leadership Commitment; Inclusive Culture; and Employee Lifecycle and Processes. A three-year action plan has been established to progress these three focus areas, including initiatives at enterprise and ERG levels.

Diversity in staff education is not covered by the Bank's regular D&I reporting. With regard to level of education, around 85 per cent of staff in the policy groups have a Bachelor's degree or higher (note that some staff in the policy areas occupy administrative roles).[11] In particular, 43 per cent of staff have a Bachelor's degree as their highest education level, 31 per cent have a Master's degree and 8 per cent have a PhD.

Of the staff in the policy groups who work in policy roles (i.e. excluding project and administrative support staff that work in policy groups), at least three-quarters completed an undergraduate degree in commerce, finance and/or economics. Around 70–75 per cent of staff who completed undergraduate studies in commerce, finance and/or economics did so at a university in 'The Group of Eight'.

[10] The Flexibility ERG was disbanded in late 2020 and replaced with the Ways of Working Business Reference Group in response to the Bank's transition to hybrid working. The Indigenous Australians ERG has been renamed the First Nations ERG.

[11] *Update – At present, the Bank's collection process for data on staff education and qualifications is inconsistent. For the most part, the Bank collects qualification data at the point of hiring, so subsequent qualifications may not be captured unless provided voluntarily by employees. Moreover, because graduates are typically hired before they are awarded a degree, internal records may not be updated upon degree completion.*

Analysis of staff diversity and the progress of the Bank's D&I initiatives is contained in the following document.

Documents: Diversity and Inclusion

RBA Annual Report – Our People[12] (2022)	Public report	Link

5.4. List of active Employee Resource Groups (ERGs).

- LGBTI +Allies
- Race & Cultural Identity
- First Nations
- Accessibility
- Gender Equity

5.5. Analysis of the professional profiles of policy staff in Economic Group, Financial Markets Group and Financial Stability Department, including: (1) average tenure at RBA by employment level (2) share that started as a RBA graduate by employment level, excluding staff currently on graduate program (3) share of senior staff appointments over past 5 years that were of candidates external to the RBA by employment level, and (4) a qualitative assessment of internal movement, including how often staff tend to change teams.

Tenure, graduate program and external appointment

Table 2 presents a summary of key statistics on professional profiles including: (1) staff tenure; (2) the share who started as a graduate; and (3) the share of appointments (i.e. filled vacancies) that were external hires. Note that internal movement is discussed separately in the following section. These data cover staff in the core 'policy groups' (Economic, Financial Markets and Financial System Groups) and who work in policy roles (i.e. it excludes project and administrative support staff that work in these groups). The following points are relevant:

- ***Tenure***: Average tenure is nine years overall, and typically lengthens with seniority. That said, there is a very wide range of tenure at each level, with a mixture of staff who are newer to the Bank and others who have spent much of their career here.
- ***Started as a graduate***: Around two-thirds of current policy staff started their career at the Bank as graduates (excluding current graduates). This figure varies by seniority, being lower for Analysts as well as Department Heads and Assistant Governors, and somewhat higher for staff at intermediate career stages of Manager through to Deputy Head. A criticism that has been levelled at the Bank is that the large share of senior staff that have started as graduates and risen through the ranks results in insufficient diversity of opinion. The Bank has been cognisant of this, and has made efforts in recent years to increase its external hires at both junior and more senior levels.

[12] The Equity & Diversity Annual Report was published on the website until 2019. From 2020, information about equity and diversity has been published in the 'Our People' section of the RBA Annual Report. The Equity & Diversity Annual Report is published internally as a stand-alone document.

- ***External senior appointments***:
  - All vacancies have been advertised externally at Assistant Governor level since the beginning of 2018, at Head of Department level since 2020, and in recent years also typically for Deputy Head of Department level.
  - Around one in six appointments to management roles (Manager and above) in the policy groups was filled by an external hire over the past five years. That compares with around one in 13 appointments in the prior five years (none of which were above Senior Manager). The share of appointments that were external hires rose for all levels from Manager through to Head of Department. The only level without an external appointment in the past five years was to Assistant Governor; that said, the most recent appointment was an internal candidate who had been hired externally as a Head of Department four years earlier. There has also been significant external recruitment into executive roles outside of the policy areas, including the current Assistant Governor for Corporate Services Group.
  - In addition to external hires, staff are periodically seconded into management roles from other organisations for periods up to several years (eight staff over the past decade).

Table 1: Professional Profiles of Staff in Core Policy Groups[(a)]

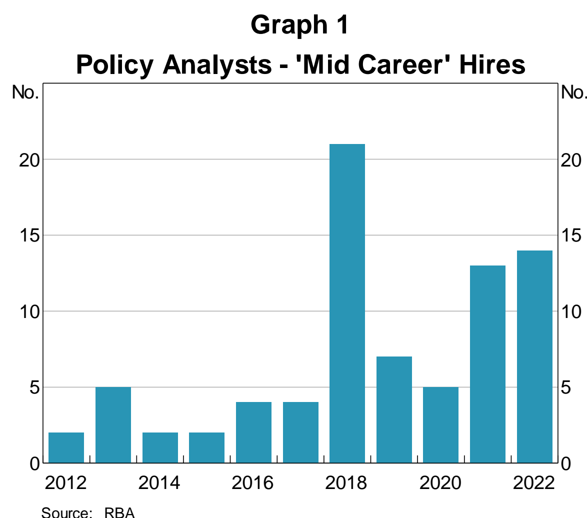
	Number of staff	**Tenure** Years		**Started as graduate** % of staff	**External hires[(b)]** External / total appointments	
		Average	Range		Past 5 years	Previous 5 years
Graduate	38	1	1–2	100	–	–
Analyst	139	5	0–37	65	64 / 168	15 / 145
Manager	58	13	0–33	76	5 / 31	3 / 32
Senior Manager	35	18	0–35	71	2 / 15	2 / 22
Deputy Head of Department	10	24	17–35	80	1 / 5	0 / 7
Head of Department	8	28	21–37	63	1 / 3	0 / 2
Assistant Governor	3	23	5–32	67	0 / 1	0 / 2
Total (Manager and above)	**114**	**17**	**0–37**	**74**	**9 / 55**	**5 / 65**
Total	**291**	**9**	**0–37**	**60**	**72 / 223**	**18 / 210**

(a) Data as at 17 August 2022; staff changes after that date are not captured in the analysis. Includes staff in Economic Group, Financial Markets Group and Financial System Group, but does not capture some staff in the 'Analysis' job family are in other areas of the Bank (e.g. Risk Management and Compliance and Note Issue departments). Excludes staff in data management, projects and administrative support roles.

(b) Defined as the number of vacant positions filled by an external appointment during the period (i.e. a flow rather than a stock), and is compared against the total number of vacant positions filled. Includes one Deputy Head of Department that is an external appointment but has not yet commenced employment. For Analysts, total appointments include graduates promoted to analysts at the end of the Graduate Development Program.

Source: RBA

- ***External analyst appointments:*** At non-managerial levels, the Bank has also made significant efforts in recent years to recruit 'mid-career hires' – Senior and Lead Analysts with experience from outside the Bank. The number of such external hires has risen to be around 10–20 per year in recent years (putting aside the period of slower mid-career hiring early in the pandemic) (Graph 1). By comparison, the size of the graduate intake in core Policy Groups is typically around 20 per year.



In addition, many staff gain experience outside the Bank through secondments to international organisations, foreign central banks, regulators or other parts of the Australian public service. More than half of the current policy executive have previously spent time seconded to other organisations. In addition, high-performing staff are provided with sponsored post-graduate study, deliberately across a broad range of domestic and international institutions.

Internal movement

Staff are able to gain diverse policy experience within the Bank by moving internally, via either transfer or promotion.

Transfers are the more frequent way of moving between different policy areas.[13] Over the past five years, policy analysts have rotated every two and a half years on average (specifically, 125 transfers per year on average among the roughly 290 policy analyst staff). A challenge with this regular pace of rotations is to ensure a sufficient depth of expertise. Accordingly, rotations among managers and senior managers tend to last somewhat longer. Of these transfers, around half have been to a different group and half to another role in the same group (although potentially to a different department in that group).

The Bank has a number of processes in place to ensure the regular rotation of staff:

- Graduates rotate once during their two-year program, while Analysts typically rotate every two to three years, with rotations coordinated by Heads and Deputy Heads of the relevant

[13] For both transfers and promotions, movement in the policy groups is predominantly among these groups, although there is some movement to and from other departments that utilise economic and financial skills, including Risk Management and Compliance and Note Issue departments.

departments. Some positions are advertised internally and staff are able to apply to transfer if they choose.

- For Managers and Senior Managers, Department Heads regularly review opportunities for rotations. Rotations for Heads and Deputy Heads are considered by the Bank's Talent Management Committee as part of its quarterly assessment of the senior staff talent pipeline.[14]

Promotions also often result in staff moving between different areas of the Bank. Over the past five years, around 50 per cent of promotions involved staff moving into a different group (and 60 per cent into a different department).[15] That said, there is variation between the policy groups, with promotions in Economic Group more likely to be staff within the group than promotions in Financial Markets and Financial System Groups. This partly reflects the fact that Economic Group has a larger number of policy analysis positions than other groups, and does not capture the fact that most staff who are promoted in policy areas have prior experience in other parts of the Bank.

5.6. Number of external hires into policy departments of the RBA by calendar year, as a share of total number of policy staff.

These data were provided to the Panel.

5.7. Internal analysis or aggregated summaries of the results of exit interviews.

In 2018, the Bank introduced a system to standardise and digitise employee exit surveys, allowing for issues to be tracked and trends to be analysed. The exit survey is optional, with around one-third of exiting staff having completed the survey over the past four years. Respondents are asked to rate their level of satisfaction with of a score between 1 (not satisfied) and 5 (satisfied) across a number of categories. There is also an opportunity to provide free-form written comments. The key results are as follows:

- The categories that have consistently scored positively include flexible work, communication across all levels (Bank-wide, department and team), diversity and inclusion, and friendly work environment.
- The category that is consistently lowest is career progression opportunities. Other categories with low scores have been involvement in decisions, remuneration & rewards, and utilisation of skills, knowledge & experience. These results align with those from the engagement survey.
- The top three reasons for leaving have remained the same over the past four years – these are learning and development, career progression opportunities and career pathways.
- Overall, exiting senior managers had the most positive perspectives about the Bank.
- Both men and women had similar satisfaction overall, although there were some differences. Women felt less satisfied with the utilisation of their skills, knowledge and experience. Men felt less satisfied with employee benefits, the executive and access to flexible work arrangements.

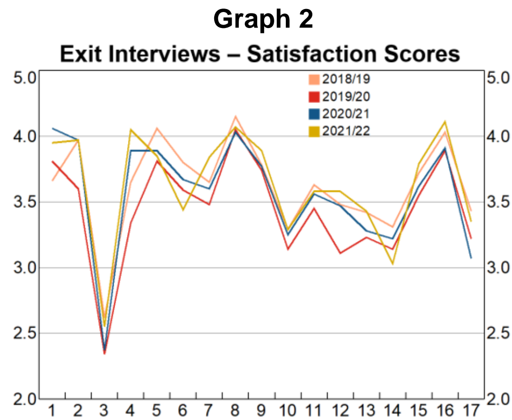
[14] The Talent Management Committee comprises the Deputy Governor (Chair) and the five Assistant Governors. This Committee also periodically reviews the senior manager cohort.

[15] Excludes promotion from Graduate to Analyst at the end of the Graduate Development Program.

- Overall, staff exiting from policy groups had the lowest satisfaction, predominantly influenced by lower scores for Bank-wide communication, remuneration & rewards and recognition of contribution.
- The top three reasons for joining the Bank over the past four years are brand, stability and career progression opportunity. These have remained fairly consistent over the reporting period.

Graph 2

Exit Interviews – Satisfaction Scores



Legend

1. Access to Flexible Work Arrangements
2. Bank wide communication
3. Career Progression Opportunities
4. Department communication
5. Diversity & Inclusion
6. Employee Benefits
7. Executive (Department Heads and Above)
8. Friendly Work Environment
9. Immediate Manager
10. Involvement in decisions affecting my work
11. Learning & Development Opportunities
12. Level of responsibility
13. Recognition of my contribution
14. Remuneration & Rewards
15. Senior Management (L6 and Above)
16. Team communication
17. Utilisation of my skills, knowledge & experience

Second Request for Information

October 2022

High-level Questions

H1. In August 2019, the RBA Board discussed a *Special Board Paper* on unconventional monetary policy. The paper recommended state-based guidance to provide flexibility to react to unexpected developments, noting a number of risks associated with calendar-based forward guidance. In October 2020, the RBA Governor added a more explicit calendar -based element to the RBA's forward guidance, noting that 'we do not expect to be increasing the cash rate for at least 3 years' (and later, 'until 2024 at the earliest').

- **Was there a Board paper that went to this issue?**
- **What considerations led the RBA to add this calendar-based element to its forward guidance? What factors contributed to the change in advice from that provided to the Board in August 2019? Did the RBA Board raise any specific concerns about the use of calendar-based guidance?**
- **Was the calendar-based element canvassed in pre-policy discussion groups and policy discussion groups? How was this issue discussed by staff during these forums?**

The Bank is currently conducting a review that examines its use of forward guidance regarding the cash rate over the pandemic period. The review will cover the background to the decisions, the approach followed during the pandemic, some observations from the experience and the Bank's future approach. The review will be provided to the Panel once it is available, after the November Board meeting.[16]

H2. In October 2020, the RBA Board also stated that it would focus on actual inflation outcomes, rather than only forecast outcomes, in setting policy.

- **How did the Board consider the risks associated with this shift in strategy, including the higher risk of inflation overshooting? How did the Board plan to manage this risk?**

See response to question H1.

[16] *Update* – this document has subsequently been published. See Review of the RBA's Approach to Forward Guidance.

H3. An additional Board meeting was held on 18 March 2020 at which (among other things) the announcement of the 3-year yield curve target and term funding facility were agreed.

- **What materials informed the Board's decision on these new policy initiatives?**
- **In addition to the above, what staff analysis was conducted to support the introduction of these policies, for example relating to their intended effects (including the transmission channels and ultimate economic impact), their design parameters, and the financial risks to the RBA they entailed under different possible outcomes? (We note that the published 'Review of the Yield Target' states that 'Internal work in 2019 had also explored the potential for use of a yield target'.)**
- **What consideration was given in advance to exit strategies?**

In 2019, the Bank reviewed the unconventional monetary policy tools it might use in a situation where they could be needed. The cash rate had reached low levels (though not yet the lower bound) and it was prudent to further develop options. That analysis drew on overseas experience, including through the Governor's chairing of a report by the Committee on the Global Financial System of the Bank for International Settlements, and the Deputy Governor's involvement in an independent review of the Bank of England's approach to quantitative easing. The analysis also built on a considerable body of earlier work by the Bank, including prior discussion by the Board.

The policy options were debated among the staff at both working and senior levels and at the Board meeting itself. The outputs included an internal note (discussed by a group of senior policy staff involved in the pre-Board policy meeting), a special Board paper and a speech by the Governor. Staff also began to develop implementation plans.

This analysis offered several insights that proved important for the later policy design that was adopted for the packages implemented during the pandemic.

First, the precise effects of even a well-designed program were highly uncertain. While the policies were likely to work through similar channels as conventional policy settings, overseas evidence indicated that their effects were difficult to measure and would vary in different circumstances.

Second, all unconventional policy options involved considerable risks to the Bank, both financial and reputational. These stemmed from changes in the balance sheet, a greater presence in financial markets and the inherent difficulties in exiting such policies. Experience abroad was that extraordinary measures had continued well beyond crisis periods and it was unclear when (and if) many would ultimately be unwound.

These insights suggested that these policies were not to be used as a smooth continuum from lowering the cash rate; they were more suited for pressing adverse circumstances. Moreover, it was not feasible finely to calibrate their design. The key would be a significant and credible package with mutually reinforcing elements that addressed the nature of the shock at hand.

Finally, to ensure the greatest overall benefit, it would be important to tailor a package to the characteristics of the Australian financial system. Alongside lowering the cash rate, two options stood out as offering the strongest benefit while also balancing risks:

- Lowering yields out to the three-year mark through forward guidance for the cash rate reinforced by buying government bonds. This nearer-term part of the curve is important in Australia (both for funding economic activity and its effect on the exchange rate). It was also noted that a three-year program would involve less financial risk than a longer-term program and was expected to be easier to exit.
- A term funding program, which could substantially lower funding costs across the economy given the bank-centric nature of the Australian financial system. Such schemes had been employed in the United Kingdom and Europe over the prior decade, particularly where the credit channel was at risk of becoming impaired. Such a program would need to be large and in place for several years to reduce bank funding costs materially. The large pool of pre-positioned, high-quality collateral in the banking system (for liquidity insurance) meant this could be achieved with strong credit protections for the Bank.

With regard to lowering three-year yields, this internal work explored the possibility of a yield target rather than buying set quantities of bonds out to that maturity. A target was easier to implement at this part of the curve than the longer end (as the target and forward guidance for the cash rate would reinforce one another). Moreover, the relatively low level of government debt in Australia meant that purchases to defend the target would not need to be large, adding to credibility and reducing financial risks. It also meant that a quantity-based program at the near end of the curve might relatively quickly reach practical limits and damage market functioning. Finally, it would be easier to communicate a price-based policy to the broader public, reinforcing its effectiveness. Nevertheless, this choice was not settled, and more generally this work recognised that any program would need to match the circumstances; a yield target was arguably more suited to a larger shock.

In February/March 2020, as the severity of the COVID-19 health and economic crisis became apparent, Bank staff designed a package of unconventional policies. This took place over a short period of time through a deliberative process. A small number of experienced staff members led the design of the yield target and Term Funding Facility. These staff had deep expertise in domestic financial markets and a number of them had first-hand experience of unconventional policies while working in another central bank (including direct experience of design, risk management and exit considerations). Options were developed for key design choices, with the process involving challenge sessions with the Governor and Deputy Governor and senior staff from across the Bank (including the economic, financial markets, risk management and legal areas). These discussions were also informed by close liaison with other central banks that were facing similar design choices on their new policies. This was an intensive and iterative process. The key conclusions were summarised in two notes that informed the final Board recommendation.

That work highlighted a number of key risks related to these policies:

- It anticipated that the eventual exit from the yield target would be complicated if the market came to expect a rise in the cash rate while the target was still in place. Accordingly, the intention was to remove the target before a rise in the cash rate was contemplated. Until that time, forward guidance and the Bank's balance sheet capacity were considered effective for maintaining the target. This situation was to be regularly monitored. As noted in the review of the yield target, staff raised the option of discontinuing the yield target in July 2021 following positive economic surprises, but there were also counter-arguments at the time to continue.

- Both policies involved a degree of interest rate risk. This was inherent in the yield target given it would involve buying some bonds (albeit probably less than a quantity-based scheme). In the case of the Term Funding Facility, a key design principle was to make the scheme attractive enough that it would be used by the banks in scale, with no concerns about stigma. This supported the choice of a fixed rather than variable interest rate, alongside other design choices, resulting in the Bank assuming some interest rate risk. To quantify the interest rate risk, scenarios were considered for these policies where the cash rate and yields rose by around 200 basis points. The resulting costs were found to be within the Bank's existing capital buffer.[17] Moreover, these costs would crystalise if and when the economy recovered, meaning that the policies had been effective in their primary objectives.

To discuss the proposed package, the Board was scheduled to meet over two days for the first time in its history (18 and 19 March 2020). This was to provide time for the Board to assess the benefits and risks of the package, and for the staff to adapt it if necessary, prior to a public announcement of the package and a subsequent press conference. The Board discussed the policy proposals in detail and was able to reach a strong consensus regarding the package on the first day. The second day of meetings was not required.

The Board was aware of the risks posed by these policies and it accepted them as necessary and appropriate. The dire circumstances at the time warranted actions that would not be considered in normal times. The Board recognised that unconventional policies by their nature involved taking risks, by employing both the balance sheet and the credibility of the institution. Indeed, the very act of taking such risks was one of the reasons why the policies were judged as being likely to stabilise financial conditions and the broader economy, thereby shoring up confidence.

Moreover, a major concern was that a more modest policy package might be seen as insufficient. This could have damaged public confidence and worsened the situation. Several other central banks quickly needed to scale up or broaden their initial interventions. In all, the Board saw that achieving its mandate required a robust, comprehensive package from the outset, mindful that it could involve potential costs subsequently. Even so, the package did not exhaust the options available in either scale or scope, but was targeted to provide greatest effect at the time.

The following document provides additional background:

Documents: Yield Target and Term Funding Facility

Unconventional Monetary Policy: Some Lessons from Overseas (2019)	Speech	Link

[17] Scenarios involving large-scale purchases of longer-term bonds were not considered at that stage as they were not part of the initial package.

H4. To what extent were the potential financial/budget implications for the RBA of the bond purchase program considered by staff and the Board ahead of its implementation? What modelling was done to explore these risks? What consultation, say with Treasury or the Treasurer, was undertaken to assess these risks?

Ahead of the bond purchase program (March – November 2020)

The Board began assessing the interest rate risk associated with bond purchases in March 2020. At the time, the Bank was purchasing bonds to support the functioning of the government bond market and the initial policy package involved purchases to support a target for 3-year Australian Government Securities. These purchases involved more interest rate risk than the Bank had historically taken (although less than the later bond purchase program). The Board considered those risks as appropriate and necessary in the circumstances, and scenario analysis based on the potential size of these purchases showed the risks to be covered by the Bank's capital.

In the months that followed, the Board monitored the rise in interest rate risk as the portfolio expanded. It also looked in more detail at the impact on the Bank's capital and dividends in different scenarios, with this topic receiving further attention at the Audit Committee. In May 2020, a paper discussed at the Board (and the Audit Committee) highlighted that:

- The bond holdings were paying a yield at that time that was above the cost of funding (the rate paid on reserves, which is close to the cash rate). As a result, the portfolio would be positive for profits while the cash rate was at its current level or below.
- The bonds exposed the Bank to two sources of interest rate risk. First, a rise in the cash rate above the yield on the portfolio would reduce profits.[18] Second, the value of the bonds would decline if the market came to expect a higher future path for the cash rate; their price would decline and they would be marked to market on the Bank's books. A weekly report estimated the capital needs for these risks (based on a scenario for a 200 basis point rise in interest rates across the curve), and was prepared by Finance for the Deputy Governor and senior staff in the Finance and Financial Markets areas. A broader suite of interest rate scenarios was reported to some subsequent meetings of the Audit Committee.[19]

In July 2020, the Board concluded that no additional capital would need to be sought from that year's earnings, despite the increase in interest rate risk on purchases to date (of about $50 billion). The Board intended to hold the bonds to maturity, which provided scope to look through fluctuations in their price. In addition, monetary policy settings in Australia and globally meant that interest rates were likely to remain low for an extended period.

Around this time, the Audit Committee also examined other central banks' bond purchases and how they managed the risks (August 2020). The bond portfolios of other central banks were much larger and riskier than the Bank's. Their programs mostly bought set quantities of bonds (unlike a yield target), had generally been in place for many years and included longer maturity bonds. The paper

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18 That said, there would be some offset from increased seigniorage income as rates rose; earnings on assets would rise while banknote liabilities would continue to not pay any interest.

19 These included an immediate rise in yields of 200 basis points across the curve; a rise in yields at the long end; a more gradual rise in yields; and these moves plus an appreciation of the Australian dollar resulting in losses on foreign exchange reserves (given that the exchange rate tends to appreciate when domestic yields rise relative to those abroad).

found that that the capital of these central banks had not increased in line with the increased size and risk of their balance sheets since the financial crisis. Apart from having different accounting policies, central banks adopted several strategies in response: building provisions for market risk; obtaining a Government indemnity; retaining earnings to build capital and recapitalisations. This paper was also provided to the Board.

Bond purchase program (November 2020 onwards)

The Board was well aware of the financial risks and capital implications of further bond purchases by the time that it considered a bond purchase program (BPP) (for an initial $100 billion in November 2020 and further $100 billion in March 2021). The nature of those risks had been thoroughly discussed by the Board and especially by the Audit Committee (the Chair and one other member of the Audit Committee also sit on the Board).

Moreover, an issue discussed at the time was whether the Bank was taking enough interest rate risk with its bond purchases. Other central banks were taking more duration out of their markets, and so placing more downward pressure on their yields and in turn exchange rates. The BPP would see the Bank take more duration out of the Australian market by buying in larger volumes and for longer maturities, helping to further support the economy after a historic contraction and amid significant risks to the recovery. In short, the policy objective and the balance sheet risks went hand in hand.

The Board discussed whether or not to seek a government indemnity for the BPP, and decided it was neither necessary nor desirable. The Board recognised that an indemnity would insulate the Bank's balance sheet from the effects of the BPP, but it would have no effect on the overall public sector balance sheet; the impact of the BPP would simply be transferred from the Bank’s balance sheet to the government's balance sheet. There was also a risk that an indemnity could weaken perceptions of the Bank’s independence, as it could lead to the Government having some input into the design of bond purchases through the terms of the indemnity. The decision also reflected the fact that a large loss – that resulted in a negative equity position – would not affect the ability of the Bank to do its job. A number of central banks in other countries had operated for extended periods with negative equity.

In early 2021, the Board again considered whether the Bank needed more capital, given the substantial interest rate risk of the BPP. By March, valuation losses from a rise in yields had depleted the reserves that had accrued from historical valuation gains on the Bank’s securities and foreign exchange assets. Further losses would eat into the Reserve Bank Reserve Fund, essentially its capital, and so reduce dividends.[20] A further rise in yields of 100 basis points would fully deplete the Reserve Bank Reserve Fund and mean no dividends would be payable for some years while capital was rebuilt.

The Board concluded that it would not be appropriate to add very significantly to the Bank’s capital. The Board had for many years used an internal framework to guide the target level of capital (which is not a mandatory minimum). Strictly applied, this suggested a large increase in target capital from $14 billion to more than $40 billion because of the increased valuation risks of the bond holdings. This was calculated from valuation losses if yields rose by a further 200 basis points in short order, across the curve. However, as noted above, the Board intended that the Bank would hold the bonds to maturity when they would be repaid in full and, in any case, such a large rise in yields seemed unlikely

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[20] The Bank’s general reserve established under the Reserve Bank Act. The reserve is funded by transfers from earnings, and maintained to provide for losses which may arise from the risks on the Bank’s balance sheet and its operations.

given the efforts of central banks around the world to keep yields low (including with forward guidance). The framework had been designed for the earlier, very different situation in which the Bank bought and sold small quantities of bonds for liquidity purposes, not one in which it was imparting significant monetary stimulus.[21]

The Board agreed to adjust the framework so that the capital target was instead based on the risks to annual profits from a rise in the cash rate ('earnings at risk'). This approach raised the Bank's capital target by around $2 billion, because the market path was for the cash rate, and so interest paid on reserves, to go above the fixed yield earned on the bond portfolio. The Board was mindful that valuation losses could result in a negative equity position, but this would not affect the Bank's ability to perform any of its functions. Over the longer term, the Bank could draw on seigniorage income to rebuild its capital. These changes were explained in the 2020/21 Annual Report.

As part of the regular annual consultation on the distribution of the Bank's earnings, the Governor and Treasurer agreed that $1.2 billion of earnings would be retained to build capital and a dividend paid of $2.7 billion for 2020/21.

The Audit Committee also considered whether the accounting treatment of the bonds remained appropriate (November 2021). In particular, it looked at whether there was merit in examining a change from market value to book value to better reflect the risks to the Bank, given the intention to hold these bonds to maturity. That accounting treatment had long been used by some other central banks. However, a full review in consultation with the external auditor indicated that there was a high hurdle to changing the Bank's longstanding accounting policy and a change in how monetary policy was implemented would not meet that hurdle. The Committee also noted that such a change would have created inconsistencies across the overall public sector accounts.

In 2021/22, the Bank recorded a large accounting loss of $36.7 billion. While underlying earnings were positive, large unrealised valuation losses were recorded on domestic government bonds, resulting in negative equity and no dividend being paid to the Government (as outlined in a speech by the Deputy Governor). While the Bank can continue perform its functions effectively, it is important that capital is restored over time. This can be achieved through the Bank's profits over the years ahead, and the Board expects that future distributable earnings be applied, in full, for this purpose. The Treasurer endorsed this approach, while noting that this decision remains at the discretion of the Treasurer under the Reserve Bank Act. Given that there is a credible path to restoring the Bank's capital, the Board has not sought a capital injection from the government.

Engagement with the Treasury

The Bank has engaged with the Treasury frequently throughout this period. The Treasury was not consulted in the design of the BPP itself, but the Secretary to the Treasury sits on the Board and so was fully informed of the risks. There were also a number of high-level discussions with the Government (before the BPP and since) to make clear that there was a risk to the Bank's financial position from its pandemic response. If interest rates rose the Bank would experience losses, but that would mean the policies had been effective in their primary objective of supporting the recovery.

There was also regular working dialogue with the Treasury on the outlook for and risks to the Bank's dividends, to provide input to the Australian Government's budget process. This included formal dividend updates as part of the Budget and Mid-Year Economic and Fiscal Outlook (MYEFO), and the

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21 Moreover, given that revaluation risks would be largely offset elsewhere on the public balance sheet, holding such a large amount of capital for this purpose would not have been an efficient use of public funds.

Pre-Expenditure Review Committee estimates. Each July, the Governor (on behalf of the Board) formally consults with the Treasurer on the distribution of the Bank's earnings.

The first estimate that no dividend would be paid was provided in September 2020 for earnings in 2022/23. In subsequent updates, downside risks to dividends were regularly flagged. In February 2022, a forecast was formally provided for no dividends for the following two years (2021/22 and 2022/23), and a scenario based on the market path for cash rate showed no dividends would be payable over the full Budget forecast horizon (to 2025/26).

The following document provides further details.

Documents: Potential financial/budget implications of the Bond Purchase Program

'Earnings, Distribution and Capital' (2021)	Annual Report chapter	Link

H5. How have the lessons identified in the recently published reviews of the yield target and bond purchase program been incorporated into the RBA's thinking and decision making? What is different as a result of these experiences?

The lessons identified from the reviews of the yield target and bond purchase program (BPP) primarily related to use of these unconventional monetary policy tools when the cash rate is near the effective lower bound. These lessons are mainly for consideration in the event that the need for such monetary policy tools arises again.

The more general lesson arising from these experiences is the benefit of clearly retaining flexibility to respond to changing circumstances and different scenarios, particularly when the proximity to the effective lower bound is not a consideration. The explicit time-based nature of the yield target helped ease financial conditions, but as the distribution of possible economic outcomes shifted with the economic recovery, the yield target was not well suited to respond. By contrast, the fairly short timeframes of each of the various phases of the BPP to which the Board committed facilitated a timely and relatively smooth end to purchases under the BPP.

The benefit of clearly retaining flexibility over policy has been incorporated into the Bank's deliberations and actions on monetary in the current environment, where the cash rate is now clearly above the effective lower bound. Given the inherent uncertainty about future economic conditions, the Board has returned to a more flexible approach to its forward guidance about future monetary policy actions. It has provided guidance about the likelihood of change in the cash rate as judged to be appropriate, but only in a limited way over relatively short horizons. There may be long periods when conditions are such that even this guidance is judged not to be needed. This approach gives the Board flexibility if required to respond to unanticipated events and manage associated communication. While this more flexible approach to forward guidance is different from that used during the pandemic period, it is in effect a return to practices prevailing before the pandemic.

As part of its reviews of the yield target and BPP experience, the Board also agreed to strengthen the way it considers a full range of scenarios when making monetary policy decisions, especially where they involve unconventional policy measures. This scenario analysis will also consider whether the policy has enough flexibility to respond to changing circumstances and how to manage the associated operational and communication challenges.

H6. Noting that the Board draws its authority and responsibilities from the *Reserve Bank Act 1959* and has no separate Terms of Reference or Charter, how does the Board measure its own performance? Is there any documentation used to measure performance beyond the annual board survey?

The Board assesses its effectiveness, operation and processes by way of the annual board survey. The external members are typically non-executive directors on commercial boards and hence have a good basis on which to compare the effectiveness of the Board.

H7. Are there any other Board policy documents, aside from the Code of Conduct for Reserve Bank Board Members which is published on the website?

The *Statement on the Conduct of Monetary Policy* sets out the agreed understanding between the Governor, as Chair of the Reserve Bank Board, and the Government on the key elements of Australia's monetary policy framework. The Governor sought the endorsement of the Board before agreeing to the *Statement on the Conduct of Monetary Policy*.

The Code of Conduct and charter of the Board Audit Committee are published on the website. There are no other specific Board policy documents.

Documents: Board policy documents

Reserve Bank Board Audit Committee Charter	Charter	Link

H8. The Annual Report on the Bank's Policies – 2020/21 noted that there were 162 incidents reported under the Risk Management Policy. What types of incidents were these?

Incident reporting is used to investigate and learn from operational events. Two types of events are reported. An *incident* has an impact outside the Bank's risk appetite and is the result of a failure in controls or the absence of controls. A *near miss* is an event where a control has failed or is missing, but thanks to good luck or the effectiveness of other controls, the impact was within the Bank's risk appetite. These do not include incidents related to Work Health & Safety or the Code of Conduct, which are reported separately.

These events are wide ranging. Of the 162 incidents and near misses in 2020/21, about a third were technology related (Table 2). Breaches of procedures, payment processing, information management and physical/IT security each accounted for between 10 and 15 per cent. Similar shares were observed in the prior year.

Table 2: Incidents and Near Misses

		2019/20		2020/21	
Incident type		**No.**	**Per cent**	**No.**	**Per cent**
Technology	Failure or impairment of IT systems	53	37	55	34
Compliance	Procedures not being met due to process/human error	18	12	25	15
Payment	Events impacting the process or complete external payments	16	11	22	14
Information	Information management breaches, e.g. erroneous access	20	14	22	14
Security	Includes physical access and IT security	12	8	18	11
Contract	Related to employment or external contracts	3	2	8	5
Building & machinery	Property related incidents, e.g. fire alarm, cabling	7	5	6	4
Legal	E.g. copyright issues	3	2	3	2
Portfolio	Financial market securities holdings related incidents	12	8	2	1
Other	Unclassified operational incidents, e.g. human error resulting in an incorrect process in a system	1	1	1	1
Total		**145**	**100**	**162**	**100**

Most reported events had an 'insignificant' or 'minor' impact, or were 'near misses' (Table 3). There have never been any incidents with the highest impact rating ('significant'). Three events in 2020/21 were classified as 'major': incorrect data entry on a government customer term deposit transaction (which was corrected); inadvertent publication of materials before schedule; and the failure of an automatic security door. Lessons learned included around software to support market sensitive communications, updates to procedures manuals and improved maintenance of physical infrastructure. There was one 'major' incident in the previous year: the failure of a number of government payments from being processed because of an internal technology issue. A data centre outage in August 2018 was classified as 'major'. Investigations into the outage of the core systems for real-time payments in October 2022 are currently under way.[22]

Table 3: Impact Rating of Incidents and Near Misses

	2019/20		2020/21	
Impact rating	Number	Per cent	Number	Per cent
Near miss	22	15	31	19
Insignificant	43	30	44	27
Minor	52	36	63	39
Moderate	27	19	21	13
Major	1	1	3	2
Significant	0	0	0	0
Total	**145**	**100**	**162**	**100**

The most common root cause for the incidents and near misses in 2020/21 was human error or oversight in procedures or communication (accounting for over 50 per cent of events). Only 2 per cent of incidents and near misses had a financial impact, averaging around $1,100 per event.

Total reported incidents and near misses have increased over the past couple of years. This partly reflects efforts to strengthen reporting culture through highlighting the benefits of reporting. The increase is also likely to reflect increased workload driven by higher vacancies and significant projects and the increasing complexity of the Bank's systems and processes.

[22] See 2019 Assessment of the Reserve Bank Information and Transfer System – Material Developments and Technology Outage. *Update* – also see Final Incident Report RITS and FSS Incident – 12 October 2022.

Each incident or near miss has an owner, who is encouraged to identify (with their management and/or executives) the key lessons learned based on underlying root causes. To promote greater transparency and accountability, Heads of Department are encouraged to sign off on these events, and those that raise broader lessons are reported to a broader group of staff. To ensure that lessons are applied quickly, all events must be recorded in the Bank's risk system within five business days and a full report is due to the Risk Management Committee within 30 calendar days. There have been ongoing improvements in timeliness of reporting (89 per cent on time in 2020/21 compared with 63 per cent in the previous year), and in the development of lessons learned (at least one for almost all events in 2020/21).

H9. Could the Bank provide a summary of its work related to climate change? Including how it builds its understanding of the issues and assesses the implications for different areas of bank policy?

Climate change directly affects the economy and the financial system and so has implications for the setting of monetary policy and the Bank's financial stability mandate. The Bank has built its understanding of these issues and assessed their implications though internal work and external engagement. The latter includes the Bank's participation in the Council of Financial Regulators Climate Working Group, as well as engagement with other central banks, both directly and through forums such as the Network for Greening the Financial System (NGFS), the Financial Stability Board, the G20 Sustainable Finance Working Group and the Executives' Meeting of East Asia Pacific Central Banks (EMEAP).

Work related to climate change has generally been conducted within existing teams, as part of or in addition to their core responsibilities. The amount of climate-related work has increased over the past few years, reflecting the importance of the topics and the greater focus of international organisations on climate-related issues. The Bank has recently created a Climate Analysis & Policy section to bring together climate-related streams of work and created two new dedicated positions. The increase in climate-related resourcing at the Bank has been based on near-term needs, in the context of overall resourcing constraints, and has been less than at some other central banks.

To date, the Bank's work on climate change has focused on understanding how climate change affects the structure and operation of the economy and the implications for monetary policy; understanding how climate risks translate into financial stability risks; and monitoring climate-related trends in financial markets and related policy discussions.

The effect of climate change on the structure and operation of the economy

The impact on economic activity from climate change can result from both physical risks and transition risks. Physical risks include more frequent and intense extreme weather events as well as gradually emerging effects on temperature, rainfall and sea level. Transition risks are associated with the process of moving to a less carbon-intensive global economy.[23] To understand how climate change might affect the economy via these channels and the implications for monetary policy, work has focused on:

- *Understanding the likely direction of structural change in the Australian economy,* including via engagement with the business community through the Bank's liaison program. Changes in policy,

23 These include risks related to changes in policy (both in Australia and other economies), technology and behaviours that can result in changes to costs, income, profits, investment and the value of assets.

preferences and technology globally will affect the Australian economy through international trade of goods, services and capital. Given the importance of resource exports for Australia, the Bank has considered the impacts of net zero transitions in major trading partners, finding that Australia's coal exports could decline significantly by 2050, with a more modest effect likely for LNG exports, and some offsetting increase in green energy exports.

- *Monitoring developments in energy markets,* including how energy use, cost and availability will evolve amid energy transition, both domestically and overseas.
- *Developing modelling capacity,* including incorporating rainfall into the Bank's MARTIN model, developing capacity to use a large-scale structural model to assess the economic effects of climate transition scenarios, and use of a DSGE model to understand macro-level structural changes (e.g. for the neutral real interest rate).

Climate-related risks to financial stability

Physical risks from increased variability and extremity of climatic conditions will reduce the value of certain assets and income streams. This could result in increased claims on insurers, unexpected credit losses for banks and write-downs to the value of financial investments. Policy and technological changes that address climate change will moderate these physical risks, but may increase the transition risks associated with the move to a lower emissions global economy. Sudden or unexpected changes in regulations, technology or consumer preferences, or uncertainty about prospective policy settings, could quickly lower the value of assets or businesses in emissions-intensive industries, some of which may become economically unviable or 'stranded'.

Australian financial institutions are vulnerable to these growing risks and, if they are not adequately managed, there could be considerable implications for financial stability. Recent work to understand how climate risks translate into risks to financial stability has included:

- *Analysis* of the risks posed by climate change to banks' loan portfolios, insurers' asset and liabilities and superannuation funds, including by incorporating climate risks into top-down stress testing models. Of note:
    - Mortgages represent a significant source of exposure to the effects of climate change for banks. If the prices of dwellings used as collateral for loans does not fully reflect the impact of climate change, future price falls could leave banks with less protection against default. Preliminary analysis by the Bank shows that by 2050, a small proportion of properties could see a significant decline relative to current prices.
    - Banks are also exposed to transition risks via their lending to emissions intensive sectors. Preliminary estimates by the Bank are that lending to such industries (including lending that does not face significant climate exposure) accounts for around 20 per cent of banks' business loans exposure.
- *Support for APRA's Climate Vulnerability Assessment,* being conducted with the five largest banks to measure the potential financial risks to banks and understand how banks may adjust their business models in response.

Climate-related trends in financial markets

It has been estimated that private sector financing in the order of US$125 trillion globally will be required between now and 2050 to fund the investments needed to achieve net zero emissions.

Investors are increasingly integrating climate change and other sustainability considerations into their investment strategies. In response to growing demand, the financial sector has developed a range of products that can be used to fund projects with specific green or other sustainability related credentials. Further, some industries with high emissions may find accessing financing much more difficult.

The Bank's work in this area has included monitoring these trends and developments in international climate policy and regulation and considering the implications for the domestic financial system. Ongoing work in this area includes:

- Considering how to ensure there are no impediments to support the ability of financial markets accurately to price climate-related risk and opportunities. As part of the CFR climate working group, the Bank has contributed to discussions on improving climate-related disclosures and understanding how emerging international approaches to defining sustainable investments, such as sustainable finance taxonomies, can be adapted to Australia's needs.
- Monitoring and analysis on climate-related investment trends and implications for the cost and availability of finance in Australia. Information from the Bank's business liaison program and investor liaison suggest that some firms, both in Australia and overseas, are finding it more difficult and expensive to access finance due to climate-risk considerations by investors. For example, according to contacts in the domestic coal industry, Australian bank financing for new coal projects is either unavailable or extremely difficult to obtain.
- Monitoring the growth of domestic green bond and asset-based securities markets.
- Exploring the Bank's ability to publish its own climate-related financial disclosures to improve transparency around its exposure to climate risks.

In contrast to some other central banks, the Reserve Bank does not include climate considerations in its own financial market operations. The Bank's holdings of both domestic and foreign assets are in the form of sovereign (or quasi-sovereign) debt securities and money market instruments, and do not include outright holdings of corporate bonds and equities (which have tended to be the main focus of climate-related investment requirements). The Bank also does not apply any climate-related criteria to its eligible collateral. The Bank is exploring which climate-related financial disclosures it could publish, drawing on the recommendations of the Task Force on Climate-related Financial Disclosures.

Further details on this work is in the following documents.

Documents: Climate Change

Climate Change Risk in the Financial System (2022)	Speech	Link
Climate Risks and the Australian Financial System (2021)	Speech	Link
Climate Change Risks to Australian Banks (2021)	*Bulletin* article	Link
Towards Net Zero: Implications for Australia of Energy Policies in East Asia (2021)	*Bulletin* article	Link
Council of Financial Regulators Climate Change Activity Stocktake 2021 (2021)	External publication	Link
Climate Change and the Economy (2019)	Speech	Link

Request for Information

1. Monetary policy arrangements

1.1. Any internal analysis on the impact of Australian monetary policy settings on risks to the stability of the Australian financial system. *(Past 10 years)*

The effect of Australian monetary policy settings on risks to the stability of the financial system were a particular focus in Bank analysis and Board discussions through the period when macroprudential measures were implemented by APRA in 2014, 2017 and 2021.[24]

Through this period, the Bank expressed concerns that low interest rates risked a build-up of medium-term vulnerabilities associated with high and rising household indebtedness. The issue at hand was not the stability of the banking system, which was well capitalised for even a very severe downturn. Rather, the concern was macroeconomic in nature. Low interest rates were encouraging rapid growth in household credit, which was well above growth in aggregate nominal income. There was a risk that strength in the housing market could give way to exuberance, with expectations of further price rises leading borrowers to take on more debt in expectations of capital gain. There was also concern that banks were competing to provide credit by easing lending standards. A subsequent downturn in the housing market or a negative shock to incomes could see households seek to rapidly reduce leverage. That would result in a sharp cut to consumption, concentrated among a group of households in financial distress, and a costly downturn. The broad framework for these concerns was set out in several internal documents in the first half of the 2010s, including a special board paper in 2015, and publicly in FSRs and speeches.

The focus of the concerns shifted over time. They initially centred on very strong growth in borrowing by investors in the property market and an associated easing in lending standards.[25] After the initial macroprudential measures, concerns shifted in 2017 to interest-only borrowing, while concerns in 2021 were around the broader rise in household leverage (and associated decline in servicing capacity) rather than lending standards. But in each case, the concerns centred on the macroeconomic risks and the role of very low interest rates in encouraging potentially excessive risk-taking.

An important question in the pre-pandemic period was whether a further cut to interest rates (from already low levels) would add materially to the systemic risks that were clearly building. The Board had discussed this topic in 2017, when the policy rates had been steady at 1.5 per cent for close to a year. That discussion was supported by two special board papers – one prepared by the Bank and the other by a well-renowned academic and former Federal Reserve official and member of the Board of Governors. This work followed the Bank's annual research conference, which had brought together an international group of academics and policymakers and focused on the interaction between monetary policy and financial stability. (The Board discussion also looked at the appropriate policy response, which is covered in the response to the next question.)

This work noted that an international body of empirical research had generally concluded that the costs of addressing financial stability risks with interest rates outweighed the benefits. Internal work in the Bank's Economic Research Department drew similar conclusions applying these approaches to

[24] For further details of these policies, see the first request for information.

[25] While investors did not appear to pose an elevated credit risk to the banks, they play an unusually large role in the Australian property market, tend to be financially motivated buyers and could amplify the housing price cycle.

Australia. That work focused on the probability of a financial crisis, so did not account for the benefits of a household sector that is more resilient and less at risk of distress.

More generally, the historical record provided ample reason to be cautious. The major macroeconomic events of recent decades in advanced economies all tended to have a financial element – a build-up of financial imbalances had either provided the source of shocks or amplified them as debt was reduced. There were a number of examples where easy monetary policy looked to have played a role in the accumulation of financial imbalances. It is also challenging to incorporate the financial sector and balance sheets into economic models, making it difficult to assess how an adjustment might unfold.

Documents: Monetary Policy and Financial Stability Risks

Cost-benefit Analysis of Leaning against the Wind (2019)	Research Discussion Paper	Link
Household Debt, Housing Prices and Resilience (2017)	Speech	Link
Financial Stability Review – Overview (September 2014)	*Financial Stability Review*	Link
Sources and management of systemic risk (2014)	Public submission to the Financial System Inquiry	Link

1.2. Any internal analysis on the coordination of monetary and macroprudential policy settings, including the potential for cyclical macroprudential policy to complement and/or offset the impact of monetary policy. *(Past 10 years)*

The appropriate combination of monetary and macroprudential policy was a key theme of the discussions outlined in the previous response. In general, the Board saw a strong case for macroprudential measures to help contain the build-up of systemic risks. But it also saw reasons to be careful in relying on these tools as a means to pursuing even more stimulatory monetary settings than was already they case.

First, there were concerns that the build-up of vulnerabilities might become considerably more pronounced as stimulus was dialled up further (that is, the response might be non-linear).

Second, Australia already had a strong prudential regime in place, and there were concerns about the effectiveness of macroprudential tools and their possible side-effects. The key concerns, and their implications for the strategy for monetary policy, were:

- It could be difficult to calibrate macroprudential policies and be sure that enough had been done to contain the risks of a more activist monetary policy path. Unless the measures were quite forceful, their effects could be marginal. Experience with the initial measures was also that they required a substantial degree of suasion from APRA to ensure that they ultimately had the desired effects.
- The effectiveness of any measure was likely to wane over time. In an environment where households' and lenders' underlying desire to take risk was strong, the problems could ultimately manifest in different ways. Some authorities abroad had found that the effects of their restrictions had faded within a relatively short period. In Australia, the initial excesses in investor lending gave way to concerns about interest-only and then high debt-to-income lending.

- Relatedly, there was also a risk of a 'ratchet effect' if more and more measures were needed over time and they proved difficult to remove. There had been little experience internationally of macroprudential tools being relaxed. If the measures ultimately became structural, they could create distortions and inefficiencies in the financial system and encourage activity to move outside the prudential perimeter, reminiscent of the 1970s experience. (There has since been rapid growth in non-bank lending in Australia, although the stock of lending remains relatively small and below the share of housing credit prior to the global financial crisis.)
- Finally, there was also some discussion as to whether macroprudential tools might at some point be counter-productive. Lower interest rates would encourage borrowing but tighter macroprudential policies would discourage borrowing. This tension was not easily resolved. That said, other channels such as the exchange rate channel could become more important. In addition, macroprudential policies would affect the 'tails of the distribution' rather than the transmission of policy to the 'median' household.

At the same time, some aspects of the Australian situation were recognised by the Board as conducive to effective use of macroprudential tools. Of particular importance was the strong relationship with APRA, which facilitated good policy coordination. That was not the case in many other jurisdictions. Leakages were also potentially less likely in Australia's relatively concentrated and bank-centric financial system than in some other financial systems where there was greater reliance on non-bank finance.

A final consideration was the flexibility of the Bank's mandate. This meant the Board could pursue a more gradual path to returning inflation to target if this alleviated medium-term financial stability risks (as formally acknowledged in the renewed *Statement on the Conduct of Monetary Policy* in September 2016). In particular, that gave the Board latitude to consider a 'low for longer' strategy rather than further rate cuts in the near-term followed by earlier rate increases. This situation differed from that of a number of other central banks, which have less flexible mandates that specify inflation as the primary target (and financial stability as only a secondary consideration). The inflation forecasts over this period also consistently showed a return to target over a few years, such that the benefits of a swifter return were also felt by the Board to be marginal.

The documents listed for question 1.1 are relevant to this question, as are the following additional references:

Documents: Coordination between Monetary and Macroprudential Policy

Has the Way We Look at Financial Stability Changed Since the Global Financial Crisis? (2017)	Speech	Link
Macroprudential Policy: A Suite of Tools or a State of Mind? (2012)	Speech	Link
Macroprudential Supervision and the Role of Central Banks (2012)	Speech	Link

1.3. Any formal communication to APRA about whether changed macroprudential policy settings could assist better economic outcomes by providing headroom for monetary policy decision making. *(Past 10 years)*

As noted in the response to the previous question, the Board did not actively seek to gain additional room to ease monetary policy through the use of macroprudential tools. However, there was very

close communication and cooperation between the Bank and APRA regarding the need for macroprudential tools, their design and monitoring their effects in each of the three episodes discussed. These discussions centred on the need to mitigate the financial stability risks that could emerge as side-effects of monetary policy settings needed to achieve macroeconomic objectives.

Formal communication between the Bank and APRA on macroprudential settings and their interaction with monetary policy occurs through the Council of Financial Regulators (CFR), which is chaired by the Governor. The Governor is in regular contact with the Chair of APRA to share information on the work of the two organisations. Bilateral discussions also occur regularly between the Bank and APRA across several levels of seniority.

As well as the main CFR meetings, the CFR Housing Risk Working Group (HRWG) has supported APRA's consideration of the need for, and form of, macroprudential policy responses. The HRWG comprises representatives from each of the CFR agencies, including the Bank.

2. Implementation

2.1. Historical SMP forecasts for growth in the wage price index. *(Past 10 years)*

This dataset has been provided to the Panel.

2.2. Forecasts presented to the Board at the time of key decisions about the time horizon of the yield curve target and forward guidance. *(Past 5 years)*

The forecasts presented to the Board are contained in the quarterly Economic Outlook paper. Between these quarterly updates, the broad implications of incoming data for the forecasts are discussed and, occasionally, updated forecast profiles are presented following major events.

The salient aspects of the forecasts at the time of key decisions for the yield target and forward guidance were as follows:

March 2020: Announcement of three-year yield target and state-based forward guidance

The Board did not have a full set of updated forecasts for the economy for its special meeting in mid-March 2020, but a very sharp contraction in domestic economic activity was widely expected. The size of the fall in activity would depend on potential lockdowns and other restrictions put in place to contain the virus, as well as voluntary social-distancing measures. An assessment quantifying the extent of the potential downturn was provided to the Board at the April meeting, two weeks later.

The central forecasts published in the May 2020 *Statement on Monetary Policy* were for a much sharper contraction in economic activity than during the global financial crisis, which fiscal and monetary policy was not able to fully offset. These were broadly in line with the average forecast of market economists for 2020 and 2021.

November 2020: Three-year yield target extended and rate lowered; time frame considered likely to meet the conditions for a cash rate increase added to forward guidance communication – 'at least three years'

Incoming data suggested that the economic downturn was not as severe as expected, although GDP had still recorded the largest peacetime contraction since the great depression. Moreover, a COVID-19 outbreak in Victoria introduced uncertainty and there were signs that the initial pick-up in the labour market in other states was faltering. The recovery was expected to be modest, with GDP not expected to return to its pre-pandemic level until the end of 2021. The unemployment rate was expected to peak at 8 per cent and remain above pre-pandemic levels at the end of the forecast period (end 2022), while wages growth and inflation were expected to remain below 2 per cent.

Upside and downside scenarios that depended primarily on the evolution of COVID-19 were considered, alongside other important sources of uncertainty. The balance of risks was assessed to be skewed to the downside, and even in the upside health scenario inflation was not expected to exceed 2 per cent by the end of 2022.

February – March 2021: Three-year yield target defended amid rise in global bond yields; time-based communication extended in line with the yield target – 'until 2024 at the earliest'

The domestic economy had continued to recover more quickly than expected. GDP and employment were expected to reach their pre-pandemic levels over 2021, around 6 – 12 months earlier than previously expected. The unemployment rate was thought to have already peaked at 7½ per cent and

was expected to decline steadily to around 5¼ per cent by the end of the forecast period (mid-2023). However, the level of GDP was still expected to remain below that forecast in February 2020. Spare capacity in the labour market was expected to remain considerable, and wages growth was at a multi-decade low. Both wages growth and underlying inflation were expected to remain below 2 per cent over the forecast period.

Upside and downside scenarios that depended on the evolution of the COVID-19 and the speed of the vaccine rollout were considered. The downside scenario assumed intermittent domestic outbreaks of the virus and associated restrictions on activity. Even in the upside scenario, inflation was expected to remain below 2 per cent over the forecast period.

July 2021: Yield target not extended to the next three-year maturity bond; mild step back in language on time communication in forward guidance – 'central scenario … condition will not be met before 2024'

The latest formal forecasts at the time of the July 2021 Board meeting, which were from May, showed further improvement in the outlook. Those included extended forecasts to the end of 2024 to assist the Board in the discussion of monetary policy. GDP per capita was expected to be on a higher trajectory than expected prior to the pandemic. The unemployment rate was expected to decline to around 4½ per cent by mid-2023, before edging a little lower. Wages growth was expected to pick up a little faster than previously anticipated. Headline inflation was expected to peak briefly above 3 per cent in the June quarter 2021 (reflecting base effects), before dropping back below 2 per cent. But underlying inflation was expected to remain modest, rising to around 2 per cent in mid-2023 and just inside the target range by end 2024.

The data since May 2021 provided further evidence that the economy was recovering faster than expected. The economy was showing a tendency to bounce back quickly once outbreaks were contained and restrictions eased, and the latest lockdowns appeared to be less damaging to broader spending. That said, price wage and pressure had been less responsive.

The improvements in economic conditions had increased the likelihood of alternative plausible upside scenarios for the economic outlook. However, these developments had not changed the assessment that progress towards the inflation goal was likely to be gradual and that a substantial overshoot on inflation was unlikely, noting that the starting point (even for goods inflation) was noticeably below target. Significant downside risks also remained, including setbacks to the vaccine rollout, fresh virus outbreaks and the possibility of new variants.

November 2021: Yield target discontinued; forward guidance time communication stepped back further – 'the Board is prepared to be patient'

The economic situation in Australia and globally was improving rapidly, reflecting high vaccination rates and, in Australia, the economy reopening after the Delta-related lockdowns (which had delayed the recovery). That said, the health situation remained uncertain and further bouts of tightened restrictions on activity appeared likely.

Underlying inflation and wages growth were expected to increase gradually to 2½ per cent and 3 per cent by the end of the forecast period (the end of 2023), though the Board noted that the risks to inflation were 'tilted to the upside'. Inflation had picked up in many advanced economies. In Australia, the September quarter 2021 outcome for inflation had been higher than expected. Underlying inflation was back in the target range, but wages growth was still low. The Board assessed that it was appropriate to take time to assess the evolution of events, and the Governor indicated publicly that,

depending on how the economy evolved, an earlier increase in interest rates was possible, though 2024 remained the central expectation.

February – April 2022: Forward guidance on wages condition evolves from 'materially higher'; and the Board is still 'prepared to be patient', though that language is removed in April

At the February 2022 meeting, the Board had inflation data for the December quarter 2021, which again was above expectations. Headline inflation was at that time expected to peak at 3¾ per cent and underlying inflation was expected to peak at 3¼ per cent in mid-2022, before declining back to the target range. There were still significant upside and downside risks to the outlook, and the Board assessed that it was too early to conclude that inflation was sustainably within the target range.

Shortly before the March 2022 Board meeting, Russia invaded Ukraine. The most immediate effect was a surge in energy and other commodity prices, and potential further disruption to global supply chains, both of which were likely to lead to higher global inflation in the near term. The inflation risks had shifted to the upside, with it judged to be likely that underlying inflation would be above the target range for some time. At the April meeting, the Board was advised that inflationary pressures in Australia remained high and were 'likely to persist for longer than previously expected'.

May 2022: Cash rate increased by 25 bps, guidance changed to 'ensuring inflation returns to target over time'

The inflation data for the March quarter 2022 were again stronger than expected. The forecast for inflation was revised higher and it was expected to remain above the target range over the following few years. Headline inflation was expected to peak at 6 per cent (and underlying inflation at 4¾ per cent), before declining to 3 per cent by the end of the forecast period (June 2024).

The evidence from the Bank's liaison program and a range of surveys was that wages growth was picking up faster than expected a few months prior. Given the recent high inflation outcomes, it was anticipated that the Fair Work Commission would award a substantive nominal wage increase to award wages. The unemployment rate was expected to decline to 3½ per cent and wages growth was expected to pick up from 2¼ per cent to 3¾ per cent over the forecast period. The risks to the inflation outlook were skewed to the upside.

The following document is provides further details.

Documents: Forecasts for Board relevant to decisions on Yield Curve Target and Forward Guidance		
Review of the Yield Target (June 2022)	Published review	Link

2.3. Additional information on Board discussions about the risks of forward guidance beyond the papers already provided. *(Past 5 years)*

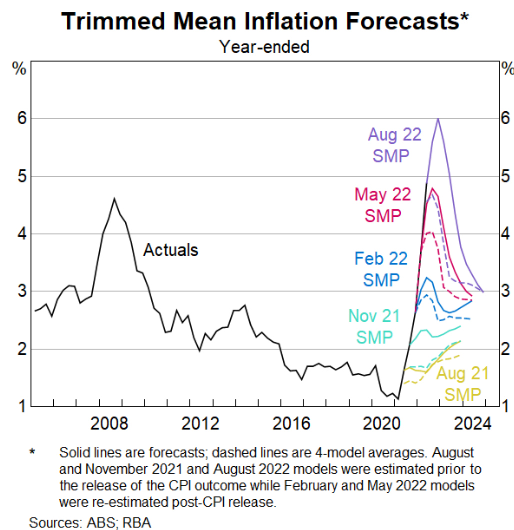
See response to question H1.

2.4. Model-based forecasts of inflation used to inform SMP forecasts over the past year, including the RBA's Phillips curve, mark-up and tradeables/non-tradables models (refer Cassidy et al 2019). *(Past 2 years)*

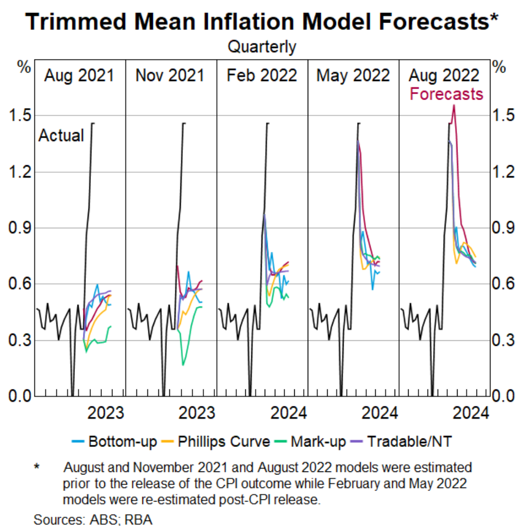
The Bank uses four main models to inform the inflation forecasts, as outlined in Cassidy et al 2019. That includes two models for aggregate inflation – a single-equation Phillips curve and a mark-up model – as well as two models that forecast inflation at the sectoral level – a tradable and non-

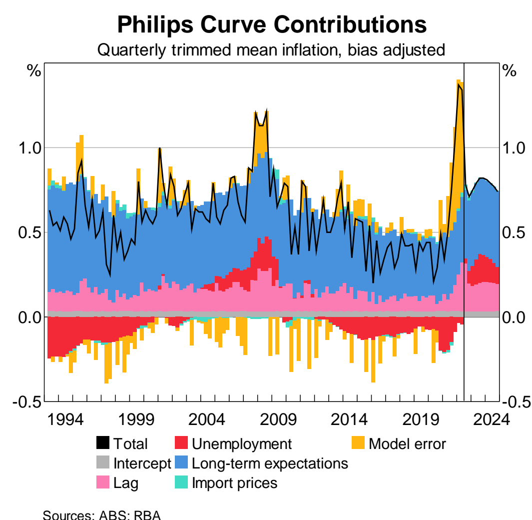
tradable model and a more disaggregated nine-component ('bottom-up') model. A model average forecast is used as a base for the trimmed mean inflation forecasts, with additional judgement applied as appropriate.

Each of these models materially underestimated inflation over the past year. The models are well equipped to capture domestic demand-driven inflationary pressures, but had more difficulty incorporating supply-driven inflation, the signal from global inflation surprises or changes in firms' pricing behaviour. In part, that is because they rest on the average statistical relationships that prevailed in the past (as do all estimated models).



A number of the models attempt to capture global, supply-side inflationary pressures through import prices, but the predicted effect was much more muted than what eventuated. The aggregate models transmit only between 1 and 5 per cent of any import price increase to trimmed mean inflation, while the tradable model transmits around 15 per cent (to that part of the basket). The component-level models performed only slightly better than the Phillips Curve model. This muted effect reflected that previous supply shocks tended to be small, short-lived and narrowly based compared with the current episode. As a result, firms tended to absorb the effects of these shocks in their margins, while volatile items tended to be trimmed out of the calculation. The large supply shock component in the recent import price increases is unprecedented during the inflation targeting period on which the models are trained.



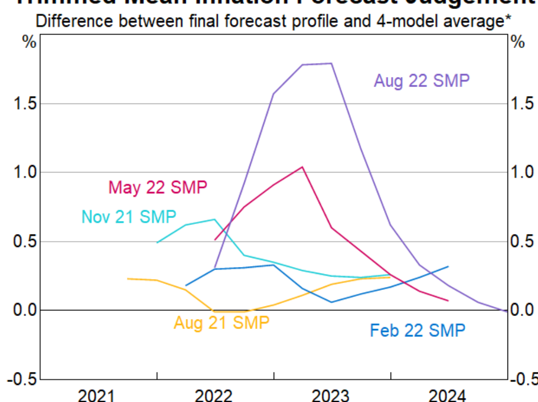


Over the past year, the approach to using the models has changed to give more emphasis to sector-level developments, and the profiles have increasingly been adjusted for other information (so-called 'judgement adjustments' to the average model profile).

- The forecast profile for underlying inflation in the August 2021 *Statement on Monetary Policy* closely followed the Phillips curve model; a closing of the unemployment gap contributed to higher inflation, while low inflation expectations and recent weak inflation outcomes weighed on the forecasts. A modest amount of upward judgement was applied to the final profile to reflect supply-chain pressures.
- Upgrades to the forecast profile over the past year largely reflected inflation surprises and judgement. Revisions to inflation expectations and the unemployment gap have also contributed to model forecast upgrades. More upward judgement has been applied in recent forecast rounds to better account for supply-driven inflation that the models could not detect. In the February 2022 *Statement on Monetary Policy*, a higher weight was placed on the bottom-up model in the near-term, as disaggregated models were perceived to provide a better indication of one-off, 'non-cyclical' factors such as supply chain disruptions. In addition, the May 2022 and August 2022 forecasts applied significant discretionary upward judgement in the early part of the forecast period, reflecting liaison and survey evidence of increased pass-through of cost pressures to consumer prices, as well as price pressures persisting for longer than anticipated in other countries.

Trimmed Mean Inflation Forecast Judgement

Difference between final forecast profile and 4-model average*



* The August and November 2021 and August 2022 models were estimated prior to the release of the CPI outcome and the November 2021 'judgement' partly reflects upward revisions to the final forecasts following a positive surprise on the September quarter inflation outcome. The February and May 2022 models were re-estimated post-CPI release.

Source: RBA

The annual review of the Bank's forecasts is currently under way and will examine the inflation forecast misses over the past year. The findings will be provided to the Board for the November 2022 meeting.

The following document provides further details.

Documents: Model-based forecasts of inflation

Inflation and the Monetary Policy Framework (2022)	Speech	Link

2.5. In the 'Review of the Bond Purchase Program', the RBA noted that: "An important consideration in introducing the BPP was that almost all other advanced economies had done so. The fact that Australia did not have such a program was contributing to Australian yields being higher than elsewhere and putting upward pressure on the exchange rate; the spread between 10-year yields for AGS and US Treasury bonds had risen to be around 25–30 basis points in mid-2020, from around –70 basis points in 2019."

Could you please provide *(2019-2022)*:

- **analysis done prior to November 2020 on the effect of bond purchases overseas on yield differentials and the exchange rate; and**
- **information about how other advanced country government bond yields (aside from the US – e.g. Euro area, Japan, Canada, NZ, UK) moved relative to Australian yields from 2019-2022?**

The effect of bond purchases on yields and exchange rates

The Bank's earlier assessment of the effect of bond purchase programs on yields (and yield differentials) and exchange rates was informed both by international evidence as well as Reserve Bank research.

The international evidence suggested that bond purchases could be expected to lower both domestic yields and the exchange rate. In 2019, the Committee on the Global Financial System (CGFS) of the Bank for International Settlements conducted a cross-country analysis of the effects of unconventional policy tools.[26] The Governor currently chairs the CGFS and the Assistant Governor (Financial Markets) is a member, and Reserve Bank staff were a part of the group that prepared the report.[27] Of note:

- A survey of 23 central banks as part of the CGFS report found that asset purchases (before, during and after the global financial crisis) were generally perceived as effective at influencing financial conditions, but to varying degrees. To the extent yields were lowered, an exchange rate channel could also be observed.
- That conclusion was also supported by a review of the empirical literature. The estimated effects of asset purchases on government (and corporate) bond yields ranged from slightly positive values to reductions of more than 100 basis points. Meanwhile, the effects on exchange rates ranged from slight appreciations to depreciations of 4 to 6 per cent.

The Bank's reviews of the international literature also found broad consensus that government bond purchases lowered domestic yields across the curve and contributed to an economy's exchange rates being lower than otherwise (see Atkin, Hartstein and Jääskelä (2021)). Event studies, which are widely

[26] See CGFS (Committee on the Global Financial System) (2019), 'Unconventional monetary policy tools: a cross-country analysis', CGFS Papers No 63, Bank for International Settlements.

[27] In November 2019, the Governor gave a speech summarising some key observations from the CGFS report and explored how those observations might be applied to Australia.

used to identify these effects, suggested that an announcement that reduces long-term bond yields by 100 basis points typically results in a 3 to 9 per cent depreciation of the exchange rate.[28]

Studies of the Australian dollar also provided evidence for the exchange rates effects of unconventional policies. Quantitative easing (QE) programs abroad appeared to have contributed to a higher value of the Australian dollar than otherwise well before the pandemic, in the period following the end of the mining investment boom. At this time, the exchange rate had not depreciated by as much as the Bank's models implied given the decline in the terms of trade and the reductions in domestic interest rates. Kent (2016) observed at least part of this difference reflected a prolonged period of very low interest rates and unconventional monetary policies in the major economies.

The Bank's models of the Australian dollar also suggested that a purchase program that lowered domestic yields relative to those abroad would be expected to result in an exchange rate depreciation (all else equal).[29] Shorter-term yields tended to have a larger effect on the Australian dollar than longer-term yields, consistent with liaison by the Bank's dealing room through the years. These results were also supported by research that used a historical event study of the exchange rate around monetary policy announcements.

While both the international and Australian evidence pointed to a likely exchange rate channel, the size of the effect was uncertain and likely to vary over time. Some event studies, such as Ferrari, Kearns and Schrimpf (2017), indicated that the sensitivity of the exchange rate to changes in interest rates had increased over time, as policy rates declined to low levels and the effective lower bound became increasingly binding. However, other research suggested that bond purchase programs overseas may have had a smaller effect on longer term interest rate differentials and exchange rates than conventional policies (although there was still an effect).

A special board paper in July 2020 on further monetary policy options observed that the effects of bond purchase programs were greatest when long-term bond yields embedded expectations of substantially higher future policy rates and significant term premiums. Such conditions prevailed when QE programs were first introduced during and following the global financial crisis. But they were no longer present in July 2020. That may have weakened the impact of lower long-term yields resulting from bond purchases through 'price' channels (similar to those operating for conventional policy – lowering the cost of capital for borrowers, supporting riskier asset prices and exerting downward pressure on exchange rates). Indeed, the term premium in Australia had already declined over the prior decade or so, which Bank research had suggested was the result of asset purchase programs by foreign central banks and associated portfolio rebalancing flows.[30]

Yields in Australia and other advanced economies, 2019–2022

Prior to the pandemic, yields on Australian government securities (AGS) were below those in the United States and Canada and above those in Europe and Japan. At the onset of the pandemic, these differentials collapsed as most yields converged at very low levels. Through mid-2020 spreads between yields on shorter term Australian government debt and those in most other advanced

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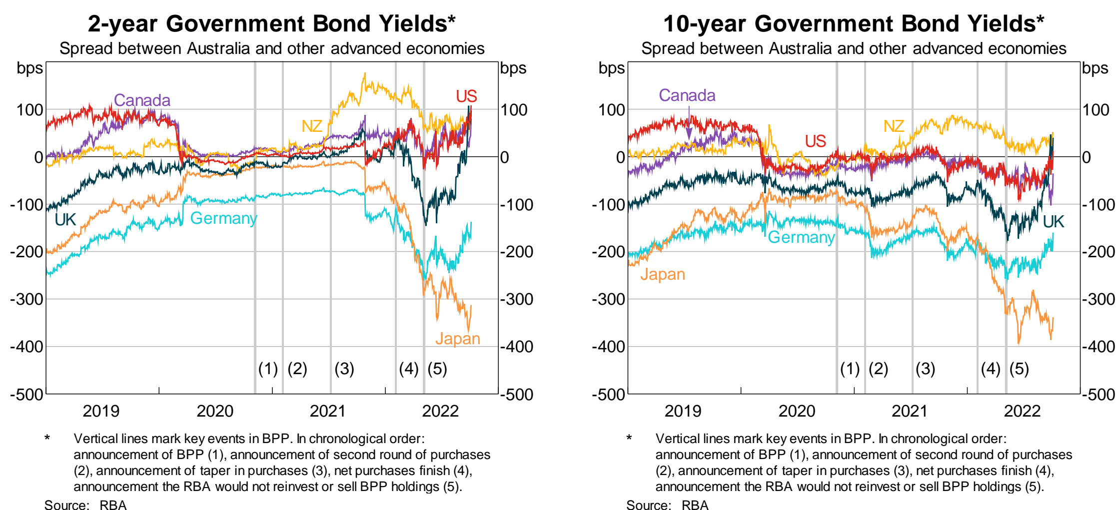
28 For example, Ferrari, Kearns and Schrimpf 2017 and Glick and Leduc 2018; Rogers, Scotti and Wright 2014.

29 See Chapman, Jääskelä and Smith (2018) and Hambur, Cockerell, Potter, Smith and Wright (2015), attached below.

30 Hambur and Finlay (2018) found a large portion of the decline in yields on Australian government securities since the global financial crisis reflected lower real term premia, mirroring the decline in US term premia, suggesting that influence of global factor such as foreign central banks' asset purchase programs and the associated portfolio rebalancing flows. This was consistent with research by Bauer and Neely (2014) and Neely (2015), which found that spillovers from foreign central bank quantitative easing programs had affected Australian bond markets through a 'portfolio balance' channel.

economies were little changed, while longer term yields in Australia rose moderately relative to those abroad.



Several other central banks implemented QE programs, which saw their yields move lower relative to those on AGS between March 2020 and November 2020.

- In the weeks following the Bank of Canada's announcement of its QE program on 27 March 2020, 10-year Canadian yields declined by approximately 20 basis points more than 10-year Australian yields.
- A similar market reaction occurred in the month following the Reserve Bank of New Zealand's announcement of its Large Scale Asset Purchase (LSAP) program on 23 March 2020 and after the expansion of its LSAP program on 12 August 2020.
- In the United Kingdom, 10-year UK gilt yields declined relative to 10-year AGS yields in the month following the Bank of England's expansion of its existing QE program on 19 March 2020 before widening in subsequent months.

Following the initial announcement of the Bank's bond purchase program (BPP, marked (1) on both graphs) in early November 2020, the spread between yields on AGS and other advanced economy government bonds narrowed moderately (by 4 to 8 basis points overnight), driven by a decline in Australian yields. The size of the decline was broadly similar at both the short- and long-end of the curve and the effect was relatively short-lived, with the spread between Australian yields and those for other advanced economy bonds widening over subsequent weeks. However, as discussed in the Review of the Bond Purchase Program, there were widespread expectations that a BPP would be introduced at the time of the November 2020 announcement. After taking these earlier communications into account, staff estimates are that the announcement effect of the BPP was to lower longer term AGS yields by around 30 basis points. It is likely there would have been a material increase in yields had a BPP not been adopted.

For most other key events highlighted in the graphs, the spread between yields on AGS and other advanced economy government bonds was little changed. Since late 2021, yield differentials have mainly reflected policy rate increases by central banks and differences in inflation expectations.

Documents: Bond purchases, yields and exchange rates

Determinants of the Australian Dollar Over Recent Years (2021)	*Bulletin* Article	Link
A Forward-looking Model of the Australian Dollar (2018)	*Bulletin* Article	Link
Affine Endeavour: Estimating a Joint Model of the Nominal and Real Term Structures of Interest Rates in Australia (2018)	Research Discussion Paper	Link
After the Boom (2016)	Speech	Link
Modelling the Australian Dollar (2015)	Research Discussion Paper	Link

2.6. The decision-making documents that were presented to the RBA Board at its extraordinary meeting on 18 March 2020. *(March 2020)*

These documents were provided to the Panel.

3. Communication

3.1. Any internal analysis or notes about the case for publishing cash rate forecasts, or producing scenarios with alternative policy assumptions. *(Past 5 years)*

The Bank's forecasts are based on a cash rate assumption. Historically, this has effectively served as a benchmark against which the Board can develop and test its policy strategy. The assumption has been chosen to be agnostic about the Board's intentions, and the forecasts are then used to assess progress towards the Bank's goals. The cash rate assumption has not been used as a device to communicate a projected policy path.

Prior to 2015, the assumption was typically that the cash rate would remain constant across the forecast period. However, on occasions when this assumption was obviously unrealistic – such as during the global financial crisis – the forecasts instead assumed a path for interest rates broadly consistent with financial market expectations. Since the February 2015 *Statement on Monetary Policy*, the forecasts have been conditioned on the path of interest rates implied by financial market pricing, or a combination of market pricing and expectations from surveys of professional economists.

The catalyst for changing the cash rate assumption in early 2015 was the Pagan and Wilcox review of forecasting in Economic Group, which recommended that the staff consider alternative approaches. The staff agreed with the review's arguments that a constant cash rate assumption could be less plausible than other assumptions. Notably, a constant cash rate assumption can lead to situations in which the forecasts are not stabilised around a point at which the Bank's policy objectives are being achieved.

Basing the assumption on market participants' expectations for interest rates was regarded as suitably neutral to use as a benchmark for the forecasts, without signalling a plan to the market (especially as the Bank was not using forward guidance at that time). It also made for more internally consistent forecasts, because these market expectations for interest rates helped determine the current exchange rate. The Bank's forecasts have long assumed that the exchange rate remains at its current level for the forecast period of two to three years (supported by empirical evidence that exchange rates are random walks, at least over such horizons). The Pagan-Wilcox review also discussed other possible conditioning assumptions, including: a path of interest rates consistent with the past behaviour of the Bank, as summarised by an estimated 'monetary policy rule'; or an ad hoc path postulated by staff.

Another outcome of the Pagan-Wilcox review was the development of the Bank's macroeconomic model of the Australian economy (MARTIN). Following the model development process, which was largely completed by 2019, a body of internal work was undertaken to refine the model-based interest rate paths, test alternative cash rate scenarios and conduct 'optimal control' exercises. This process of assessing the behaviour of the model in the face of alternative cash rate paths built confidence among the staff about the outputs of the model.

Alternative paths for the cash rate are on occasion considered as scenarios, using MARTIN. However, this involves allowing the exchange rate to adjust, which requires strong assumptions about its behaviour. Scenarios showing the sensitivity of the central forecasts to alternative cash rate assumptions were included in the Economic Outlook paper for the Board meetings in May and

November 2019. The latter also included extended-horizon forecasts to determine how long it would take for the Bank's objectives to be achieved under each of the cash rate paths considered.

In other scenarios, the assumption for the cash rate is generally kept the same while other parameters are altered. For example, after the initial outbreak of COVID-19 a range of scenarios were published in the *Statement on Monetary Policy* to convey the very high level of uncertainty around the outlook. The assumptions for the cash rate and other elements of the Bank's monetary stimulus package were the same across all scenarios.

The appropriate cash rate path to use and its communication remain matters of ongoing discussion and review, with a variety of views within the Bank. A drawback of publishing an expected policy rate path is that this could be perceived as a promise rather than depending on how the economy evolves. The Bank has once again considered this issue with the review of forward guidance and concluded that it does not intend to publish a Bank forecast of the expected policy path.

The following documents provide further details.

Documents: Case for publishing cash rate forecasts or producing scenarios with alternative policy assumptions

Economic Forecasting at the Reserve Bank of Australia (2016)	Speech	Link
External Review – Reserve Bank of Australia Economic Group Forecasts and Analysis (Pagan and Wilcox)	Published review	Link

3.2. Any internal analysis or notes about the case for regularly publishing quantitative insights from business liaison. *(Past 5 years)*

The case for regularly publishing quantitative insights from the liaison program has been considered internally from time to time, although there have been no formal assessments. Those discussions generally concluded that the most effective approach to communicating the key messages from liaison was to incorporate them into the *Statement on Monetary Policy* and other Bank publications such as the *Bulletin* and speeches. For example, there were around 25 references to liaison in the domestic economy parts of the *Statement on Monetary Policy* in May and August 2022. This approach was viewed as striking an effective balance between providing the key insights from liaison and integrating them into an overall narrative together with information from statistical data providers, such as the ABS. When the program was first set up in the early 2000s, there was a strong view that the insights from it should not be seen as 'rival advice' to existing data sources, but complementary and integrated into a holistic assessment of economic conditions.

Another consideration was managing the confidentiality of the information received in liaison. The success and viability of the liaison program depends on liaison contacts being willing to share figures and firm level insights candidly with us. Any dissemination of liaison messages needs to be mindful of the need for liaison information to be aggregated and de-identified. This is particularly the case in providing some degree of sectoral or geographic liaison information. On the other hand, publishing additional liaison insights would be of some benefit in demonstrating more concretely to liaison contacts how their information is used.

Regarding the quantitative information we collect, there has been internal discussion about the extent to which the 'Likert' scores that are constructed may be hard to interpret. In particular, these are only one aspect of the liaison information that feeds into the assessment of economic conditions and the outlook. The liaison program is not seeking to replicate other business surveys, but rather to

complement them via long-form interviews with liaison contacts (generally around an hour). This allows us to adjust our interviews to discuss shocks (weather events, COVID-19, energy shocks), better understand the drivers of economic data (the 'why') and explore concerns contacts might raise with us, while still having a consistent underlying structure to the interviews to help mitigate the risk of bias (e.g. to avoid leading questions). This qualitative information is difficult to extract from quantitative scores such as the Likert scales.

The Governor summarised these considerations in response to a question asked at a speech in 2018 (time 32:36) when he was asked: 'Isn't it about time the RBA followed the Fed and started publishing its own Beige Book or equivalent?' His response was: 'The approach that we've taken is really to try and get the gems from our liaison program and to put those in our documents. You know, to try and ... to pick up the things that are probably going to be most useful to you rather than giving you yet more documents to read. Other people can make a different judgement whether that's the right approach … we want to highlight the gems for you'.

Earlier this year – given increased public interest in the details of our liaison program – the Bank explored how best to publish more information on the program. As a result, a *Bulletin* article was published in September 2022 and the Governor announced that a regular dedicated summary of liaison messages will be included in the *Statement on Monetary Policy* from the November 2022 issue.

The following document provides further details.

Documents: Publishing Quantitative Insights from Liaison

The Reserve Bank's Liaison Program Turns 21 (2022)	*Bulletin* article	Link

3.3. Any internal analysis or notes about the impact of introducing 'layered' communication for the *Financial Stability Review. (Past 5 years)*

The 'At a Glance' page of the *Financial Stability Review* (FSR) was launched in October 2020 to provide a tiered approach to information, allowing readers to seek information to the level they prefer. By providing an additional summary page with visuals, the goal was to engage with a wider range of audiences and allow readers to digest information from the FSR more readily.

The introduction of the FSR 'At a Glance' page has been effective in increasing traffic flow to all FSR pages. Overall traffic rose almost three-fold in October 2020 compared with the previous issue and has remained much higher, on average, since the launch of the tiered approach. This increase in traffic reflects increased views of the landing page, which is where 'At A Glance' resides, while total views of the report itself have remained steady. The flow of traffic has increased, in similar proportion, from both search engines (which tend to capture a wide audience) and those going directly to the website (clicking an email link or typing the URL, which would tend to be by someone from a more specialist audience). Email and social media are also, on average, generating more unique page views of FSR pages since the launch of 'At a Glance'.

Engagement with the 'At A Glance' page itself appears to have been reasonable. Visitors to the page tend to expand the narrative headings for more detail (e.g. around 4,600 clicks among the 6,200 visitors for April 2021). At the same time, there were relatively few clicks on 'deeper' links to specific sections of the FSR.

3.4. Additional information about participating in an annual 'trust' survey (as referenced in the *External Communications Strategy, 2022-24*)

In developing its external communication strategy, the Bank's communications area considered the case for organising an annual survey on trust in the Bank with the Australian community. Such exercises are undertaken by a number of central banks. Examples include the annual 'knowledge and attitudes survey' undertaken by the European Central Bank, and 'opinion surveys' undertaken by the Bank of Canada and Bank of Japan. Some central banks do not conduct such surveys.

Participation in an omnibus survey was considered in 2021, with the goal of measuring trust as cost-effectively as possible. Liaison with other central banks had indicated that the costs of these types of surveys could be very substantial. Scoping work considered a survey that would produce a trust score rating for the Bank and five similar organisations, for comparison, twice a year. It would include a follow-up question to capture the reasoning behind the trust score.

At the time, it was decided not to pursue a survey because it would involve a significant use of public resources for the benefit it would provide. The Bank also receives insights into how it is perceived through other channels, particularly through regular direct and two-way engagement with a broad range of external stakeholders. The Bank continues to evaluate the case for a formal survey.

The Bank is also aware that its actions may not always be popular in all parts of the community, and this is a widely accepted reason for the independence of monetary policy decision-making from the political process.

4. Governance

4.1. Agenda for Board Meetings. *(Past 5 years)*

These documents were provided to the Panel.

4.2. Board Paper: Annual Report on the Bank's Policies (noting we already have the 2020/21 paper). *(Past 5 years, including 2021/22 if published already in September as anticipated)*

These documents were provided to the Panel.

4.3. Information on whether the Board considers and approves the Corporate Plan. *(Past 5 years)*

The final draft of the Corporate Plan prepared by the Bank each year is provided to the Reserve Bank Board, the Payments System Board and the Audit Committee for the information of members and their comments. Approval of the Corporate Plan is a matter for the Governor as the Bank's accountable authority.

4.4. Does the Board provide any direction for, or otherwise have input into, the analytical agenda underpinning the *Financial Stability* Review? And are Board members provided an opportunity to ask clarifying questions ahead of the Board meeting on this paper or does this occur exclusively at the Tuesday meeting? *(Past 5 years)*

Board members have the opportunity to ask questions or suggest areas for future analysis at each Board meeting, which would be presented to the Board in the subsequent Financial Stability update or sooner if appropriate. The discussion at Board meetings can also provide a catalyst or input for subsequent analytical work by Bank staff – recent examples have included discussion of rental market conditions, the characteristics of fixed rate borrowers, and developments in non-bank lending.

Even though the Financial Stability paper is discussed only twice a year, the regular monthly discussion of domestic financial conditions provides an opportunity to discuss financial stability considerations on a more regular basis. As with all Board papers, Board members are invited to provide questions to the Governor ahead of the Board meeting regarding the Financial Stability Board paper. These questions are addressed in the meeting discussion as appropriate.

4.5. Information on the Executive Committee and how it is run. This includes membership, frequency of meetings, agenda, how papers are presented and debated. *(Past 5 years)*

The Executive Committee is the key management committee of the Reserve Bank for matters of strategic or Bank-wide significance, including delivery of the Bank's key objectives and its strategic focus areas. Its role is to assist and support the Governor in fulfilling their responsibilities to manage the Bank. The Executive Committee does not consider monetary policy matters.

The Executive Committee is chaired by the Governor. Other members include the Deputy Governor and the Assistant Governors. The Bank's Secretary is the Secretary for the Executive Committee and is responsible for managing the agenda and preparing a forward agenda. Other senior executives attend

meetings of the Committee when required to provide specialist advice. The Committee typically meets weekly for up to an hour and a half.

The Executive Committee's agenda includes the following:

- regular reviews of the achievements, challenges and strategic issues in each area of the Bank (quarterly for Banking, Finance, Human Resources, IT, Payments Settlements and Workplace, and semi-annually for all other areas)
- the formulation of the Bank's annual budget and regular budget reviews (quarterly)
- regular reviews of the Bank's projects (quarterly)
- consideration of papers for the Reserve Bank Board, Payments System Board and Audit Committee that are not reviewed through other processes
- operational and staffing matters that have Bank-wide implications
- approval of a number of the Bank's major policies, including the Code of Conduct and other Bank-wide HR policies.

Members are expected to bring to the Executive Committee important issues affecting their area or the Bank as a whole and proposals for significant changes to their operations. Significant breaches of the Code of Conduct are tabled at the Executive Committee. Departments are expected to contact the Board Secretariat to advise of upcoming papers well in advance to reserve time on the forward agenda. Papers are distributed to Executive Committee members and department heads on the Friday afternoon of the week before each meeting.

At Executive Committee meetings, papers are presented by the Assistant Governor or Head of Department of the relevant area. After discussion and debate, the Governor summarises the consensus view of the Committee. In instances where no consensus is apparent, the Governor makes the decision. Minutes of matters discussed and, where relevant, decisions taken are prepared and distributed to members, following approval by the chair of the relevant Executive Committee meeting within a week or so of the meeting.

The forward agenda includes regular reports, strategic statements and papers notified to Board Secretariat and is updated regularly.

4.6. Board Surveys from 2006 - 2016 (noting that 2017 onwards has already been provided). *(Past 15 years)*

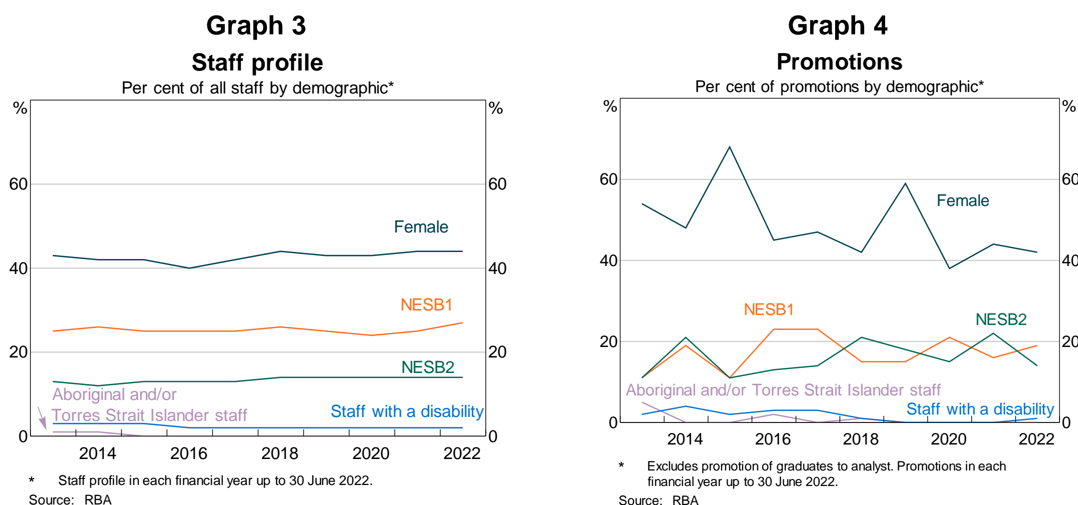
The Board surveys began in 2014. The full results for the surveys from 2014–2016, which were not captured in the first request, were provided to the Panel.

5. Institution

5.1. Internal analysis and research of staff promotions based on characteristics including non-English speaking background (NESB), gender, disability, indigenous status, educational attainment, and main field of study. *(Past 10 years)*

The Bank has a diverse workforce. At present, 44 per cent of staff are women.[31] Almost half of the Bank's staff were born outside of Australia, and around 41 per cent identify as being from a non-English speaking background, either themselves (NESB1) or their parents (NESB2). Around 0.3 per cent identify as an Aboriginal and/or Torres Strait Islander person and 2 per cent identify as having a disability. The diversity profile of the Bank's workforce has been broadly stable over the past decade (Graph 3). (Note that, in some cases, it is difficult to get a full picture of diversity as it is optional for staff to report on their demographic profile.)[32]

Ensuring diversity in management levels has been an area of ongoing focus for the Bank. Important progress has been made, particularly in terms of gender, but more progress is needed. The Bank has a range of work under way and further steps are regularly considered, supported by the Employee Resource Groups (ERGs) and Human Resources.[33] The key developments are set out below, while Graph 4 summarises the proportion of all promotions over the past decade based on demographic data.[34]



Gender

Around 47 per cent of promotions over the past decade have been awarded to women, roughly in line with the share of all staff who were women over that time (Graph 5). For promotions to management, the share has been lower at around 38 per cent over the past decade and 37 per cent over the past

31 Data as at 30 June 2022.

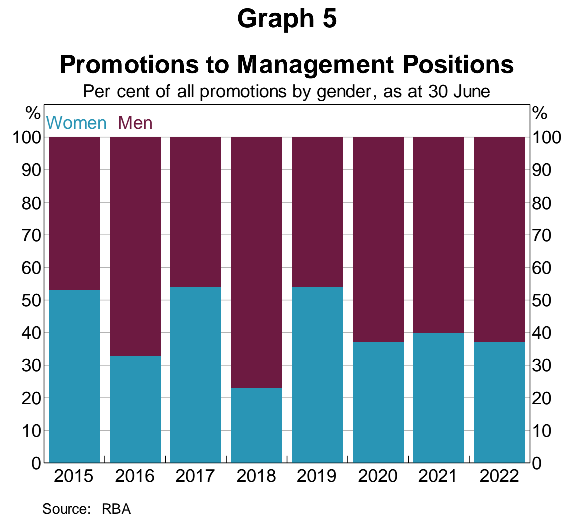
32 When joining the Bank, employees have the option to complete a diversity form that asks them whether they are from a non-English speaking background, are of Aboriginal and/or Torres Strait Islander descent or identify as having a disability.

33 More detail on the ERGs is available in the first request for information.

34 Includes promotions to pre-management roles, except from graduate to senior analyst at the end of the graduate program. All promotion figures exclude external hires.

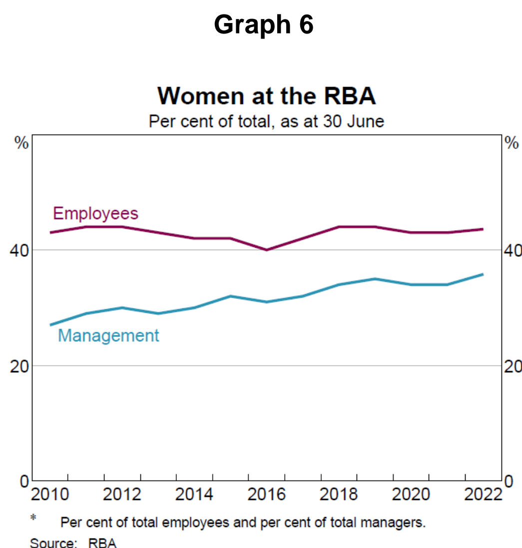
five years. By area, women have made up 42 per cent of promotions in the core policy groups over the past decade, a lower share in IT (32 per cent) and a higher share in other parts of the Bank (57 per cent); these differences are broadly consistent with variation in the share of staff in these groups that are women.[35]

Graph 5



The share of management roles held by women has increased to 36 per cent, from 29 per cent a decade ago. But progress towards the Bank's target of 40 per cent by December 2023 has slowed more recently (Graph 6).[36] At present, women account for a high share of the Assistant Governor level at the Bank (75 per cent) and a lower share among Heads of Department/Deputies (37 and 32 per cent respectively) and Managers/Senior Managers (around 35 per cent). In the long term, the Bank aims to achieve equal representation of women in management positions.

Graph 6



To support achievement of these targets, the Bank has focused on equity in recruitment and selection, succession planning and development opportunities. There has been extensive analysis over the years to understand the career experience of women at the Bank and develop

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[35] 'Core Policy Groups' include Economic, Financial Markets and Financial System groups.

[36] In 2014/15, the Bank first introduced a target of 35 per cent of management positions to be filled by women within five years. In 2020, the target was updated to 40 per cent by December 2023.

recommendations, by the Gender Equity ERG and Human Resources. An internal study in 2016 looked at the factors that systematically affect promotion rates for women, finding a longer time to promotion for staff who work part-time (and who are disproportionately women). More recent work has built on this earlier analysis using focus groups and external research, including:

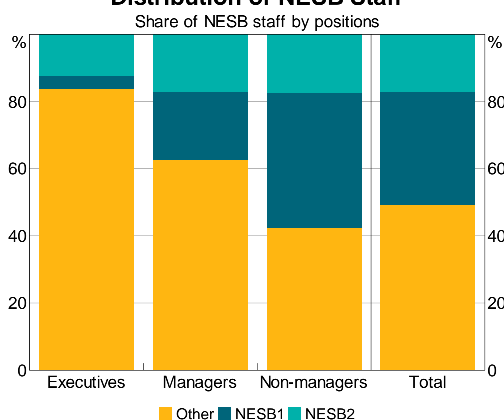
- advocating/working with HR to introduce a more generous parental leave scheme to bring about more gender diversity in caring roles at the Bank
- analysis of gendered differences in internal meeting dynamics
- increasing awareness of unconscious bias in performance appraisals and development opportunities
- organising events with keynote women speakers and networking events for women.

Several further actions are currently being implemented as part of the Bank's Gender Equity Action Plan, including targeted career development strategies for women at the Bank (mentoring programs, coaching etc.) and targeted recruitment strategies to attract more women to the Bank.

Race and cultural identity

Around 33 per cent of promotions are NESB employees on average, below the current share of NESB employees at the Bank (41 per cent). For NESB1 employees, promotions in the Information Technology (IT) Department have tended to be more common than elsewhere, consistent with NESB1 employees accounting for a larger share of current staff in IT (at present, around 45 per cent compared to around 17 per cent in the core policy Groups and 21 per cent in other parts of the Bank).

NESB staff are underrepresented in management roles in both policy and other groups, with representation decreasing further up the leadership ranks (Graph 7).[37] Although NESB staff tend to have shorter tenure at the Bank, this does not appear to explain differences in management representation. The Bank is continuing to examine options to improve NESB diversity in management.



First Nations

The share of promotions awarded to (and management roles held by) First Nations employees has been relatively low. That partly reflects that these employees make up a small share of the Bank's

37 Data in Graph 7 are as at March 2022.

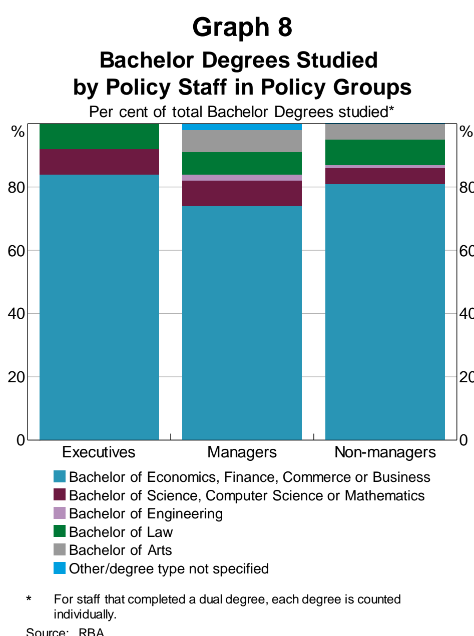
overall staff. In recent years, the Bank has implemented some small-scale initiatives to support employment opportunities by positioning the Bank as a respectful employer. The Bank currently offers a small number of First Nations traineeships each year, and in previous years has also offered a small number of First Nations internships.[38] However, these do not frequently result in appointments to permanent roles; for traineeships, this has been due to a lack of administrative support staff roles available. In 2021/22, the Bank appointed a Manager First Nations and Inclusion to support and drive the Innovate Reconciliation Action Plan initiatives. In addition, a First Nations' employment strategy has been developed with the objective of increasing the number of First Nations' employees at the Bank.

Accessibility

The share of promotions awarded to (and management roles held by) staff with a disability has been relatively low. That partly reflects that these employees make up a small share of the Bank's overall staff. The Bank works with the JobSupport program to provide long-term employment opportunities for individuals with intellectual disabilities. In addition, there have been internships for tertiary students with a disability through the Australian Network on Disability's 'Stepping Into' program.

Education

At present, the Bank's collection process for data on staff education qualifications is inconsistent.[39] Accordingly, it is difficult to provide a precise figure for the share of staff who were promoted that have a tertiary qualification. For staff promoted in policy groups for which there is a record of tertiary qualification, around half had completed a Masters degree and 15 per cent had completed a PhD.



38 Traineeships have been facilitated by MyGateway, an apprentice and traineeship support organisation, and provide work experience and a nationally recognised qualification. Internships are facilitated by CareerTrackers, a non-profit organisation that works with organisations to provide work experience, networking and professional development opportunities for First Nations students who are studying for relevant degrees. They involve vacation work at the Bank as well as professional development training.

39 For the most part, the Bank collects qualification data at the point of hiring, so subsequent qualifications may not be captured unless provided voluntarily by employees. Moreover, because graduates are typically hired before they are awarded a degree, internal records may not be updated upon degree completion.

Documents: Staff promotions

Our People chapter of Annual Report (2022)	Published report	Link

5.2. Analysis/data on the number and proportion of staff research discussion papers that progress to publication in peer-reviewed journals; list of published papers and the journals in which they have appeared. *(Past 10 years)*

Approximately one-quarter of Research Discussion Papers (RDPs) have progressed to publication in peer-review journals over the past 10 years. There were 111 RDPs published in the 10 years from 2011–2020, of which 29 were subsequently published. This calculation allows for a one-year lag between RDP and journal publication. Note that these figures do not include publications by Bank researchers that did not originate with an RDP; for example, some papers originated with a speech or were completed while staff were on secondment or studying.

A summary of RDPs, published papers and the journals is provided in Table 4.

Table 4: Published Research Discussion Papers

Past 10 years

Journal	Publications
Economic Record	8
International Journal of Central Banking	4
Australian Economic Review	3
Australian Economic History Review	2
Journal of Applied Econometrics	2
Journal of Economic Dynamics and Control	2
American Economic Journal: Macroeconomics	1
Econometric Reviews	1
Economic Modelling	1
Journal of Banking and Finance	1
Journal of Housing Economics	1
Journal of International Economics	1
Journal of Macroeconomics	1
The B.E. Journal of Macroeconomics	1
Total published	**29**
Memo: Total number of RDPs	***111***

Source: RBA

5.3. Information/documents about leadership and management training at the RBA. *(Past 10 years)*

The Bank has long offered leadership and management training. However, this has been revamped over the past decade as part of a broader focus on fostering effective leadership in the Bank.

There have been a number of important areas for improvement. These have included a need for leaders to better connect and build trust with their staff, communicate decisions, and empower and help develop the careers of their staff, and for the Bank to better address instances of underperforming leaders. These themes were partly tied to a strong impression that, historically, managers had been promoted on the basis of technical capability ahead of leadership skills.

Leadership training has played an important role in helping to strengthen leadership in the Bank. There have been two successive leadership development strategies approved by the Executive Committee, for 2015–20 and 2020–24. The key focus areas of the latest strategy are:

- *Leadership Commitment*: being accountable for achieving the Bank's objectives ('grow the Bank'); leading with a positive impact on others ('grow others'); and having self-awareness of their own strengths and opportunities for improvement ('grow self')
- *Leadership Capabilities*: developing leaders' capabilities to foster an authentic, accountable and inspirational leadership culture that enables high levels of empowerment, motivation and performance
- *Inclusive Leadership*: leaders to show visible, authentic commitment to inclusion and consistently role-model inclusive behaviours.

These strategies have driven important changes to management training. Prior to 2015, training was focused mainly on foundational skills for staff who had recently been promoted to management. The new curricula have expanded to more senior career stages, up to executive levels. Training is also more focused on leadership skills beyond traditional management. That has been aided by an overhaul of the Bank's capabilities framework to place more emphasis to leadership skills expected of leaders in their current roles and for promotion. The training curriculum is now guided by these capabilities, and has also been aligned with the Diversity and Inclusion Strategy.

The curricula have included *flagship* courses designed for all managers and *on-demand* courses with a more targeted focus (Table 5). While there has been a strong expectation that all leaders complete the flagship programs, they are not mandatory. This has been intended to provide for a positive experience in which staff take responsibility for their development, rather than a compliance mindset. The 2015 curriculum represented a one-time uplift, with the flagship courses attended by more than 90 per cent of executives and 50–60 per cent of managers and senior managers. The new flagship program (iLead) was launched in 2021 and is being progressively rolled out, with around 25 per cent of leaders having taken (or currently taking) the course.

One area of ongoing focus is leadership training for analysts who are on a strong trajectory towards management roles. A number of lead analysts have been involved in the rollout of the iLead program.

Table 5: Leadership and Management Training

	Flagship programs	On-demand courses
2013–15[(a)]	**Leadership foundations program**: managing during periods of change; skilful discussion techniques; working collaboratively; managing expectations and stakeholders; and understanding unconscious biases and decision framing in the context of decision-making.	Influencing and negotiation skills; management essentials; managing people; and performance feedback
2015–20	**Executive Leadership Program**: series of workshops on: building a sense of importance and clarity about Bank-wide leadership; enabling leaders to communicate a compelling vision and shape the cultural context in which teams and individuals operate; and developing leader's ability to lead with inspiration and influence. Assessments and 1:1 coaching during and after the workshops. **Empowering Leaders Program (Senior Managers)**: Two-day workshop addressing key challenges in relation to people management and strategic leadership: motivating and engaging staff; conducting development conversations; communicating with influence; and stakeholder management. Followed by one-day workshop with exercises that simulated leadership and management challenges. Post-program feedback survey and debrief. **Engaging Leading Program (Managers)**: similar structure to the Empowering Leaders Program. Two-day workshop focused on leadership and people management: developing self-awareness; communicating with influence; motivating and engaging staff; and conducting coaching conversations. Followed by a one-day application workshop.	Delegation skills; effective feedback; coaching skills; valuable career conversations; building psychological safety in teams; adapting and leading through change; leading remote teams; and mental health essentials for people leaders.
2021–24	**iLead Program – *Inspiring Leaders Empower and Develop Others***: Launched in 2021, and provides an opportunity for leaders to deepen their self-awareness and develop further as an inclusive leader, with a focus on enabling learning and development, understanding how to effectively empower others through coaching and delegation, and fostering innovation and creativity. Participants experience four interactive workshops, with embedding activities in-between workshops and post program support.	Current programs include: difficult conversations; coaching skills; becoming a situational leader; develop talent; empower others; inspire others

(a) In 2012/13, the Bank held Unconscious Bias Training with Heads of Department and Assistant Governors. The training involved a survey to understand both the unconscious biases of individuals and the collective group (including one-on-one debriefing sessions with the facilitator) and then a workshop to create an action plan for addressing unconscious bias.

The changes to training have complemented other initiatives to bolster leadership, including:

- developing a more structured talent management framework to identify upcoming leaders
- placing increased scrutiny on the performance management of leaders, to reinforce stronger expectations and remediate cases of underperformance
- providing executive coaching for both talent development and remediation
- filling some executive roles by external appointments, helping to bring in external leadership expertise including from the corporate world

- taking steps to replace the old system of job descriptors based on numerical ranks with one that recognises expertise and contributions, to help break down hierarchies
- proactively providing analysts on a strong trajectory with some hands-on management experience through greater use of acting-up opportunities
- including leadership topics at the annual offsites for the Bank's executive.

In all, this is an area where cultural change is ultimately critical, and it remains an area of focus for the Bank.

5.4. Any internal documentation relating to reviews of the effectiveness of the RBA Graduate Development Program. *(Past 10 years)*

The Graduate Development Program is highly regarded and positions in the program are highly sought after. In turn, graduates are an important source of talent for the Bank.

The program runs over two years, and offers comprehensive training, coaching and development to equip graduates with technical and analytical skills as well as written and oral communication skills. At present, the Bank recruits graduates in the following areas: Economics and Finance; Information Technology; Payments Settlements; Audit; and Accounting.

Positions in the program are highly competitive. There have been between 1,300 and 2,300 applicants over the past four graduate rounds for intakes of around 31 on average (some of which are filled via offers from the intern program, which takes place a year ahead) (Graph 9). Around 87 per cent of offers to enter the program are accepted.[40] Close to two-thirds of the graduate intake go into the core Policy Groups.

The retention rate of graduates declines as their tenure lengthens, as expected. Typically about two-thirds of each intake has still been with the Bank after 5 years (Graph 10). The rate of retention has varied between cohorts, reflecting changes in labour market conditions, promotion opportunities and remuneration.[41]

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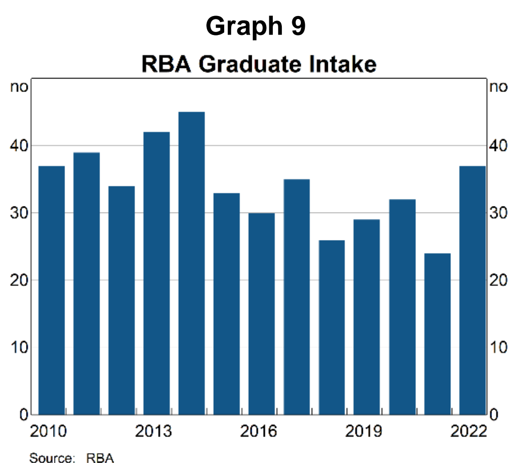
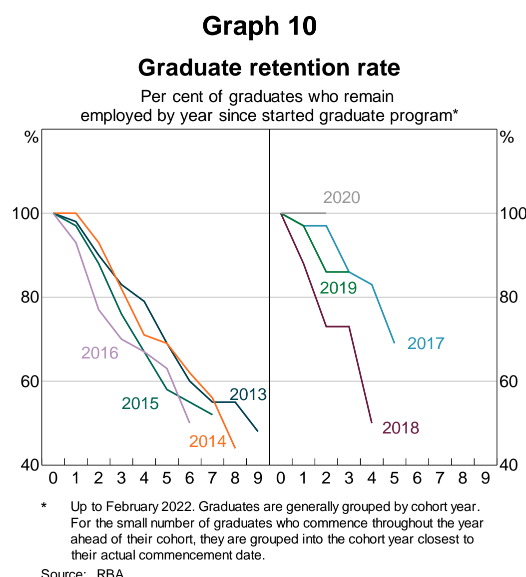
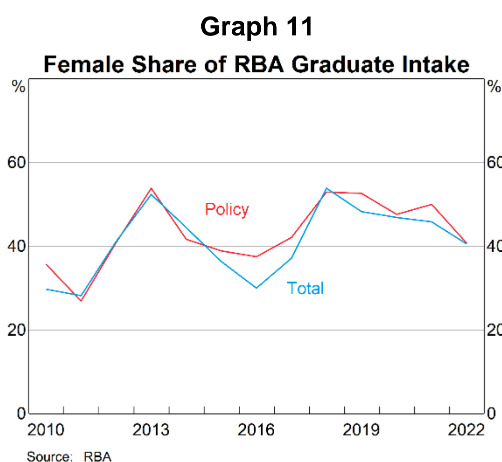
40 Data as at March 2022, for 2019 onwards. Excludes data from 2021 cohort which is unavailable.

41 For example, from 2016 graduates (and other new staff) no longer received defined benefit superannuation, instead receiving a defined contribution, as the Bank's scheme is closed to new members.





While on average women comprise around 40 per cent of each intake, only around 30 per cent of applicants to the program are women (for data since 2019) (Graph 11). A survey of recent graduates conducted by the Gender Equity ERG suggests that the low application rate could reflect low awareness of Bank opportunities, varied perceptions about a career in central banking, and a confidence gap between potential female and male applicants. This suggests the Bank could undertake steps to be more 'visible' during a student's early university years to encourage female students to pursue economics and choose a career at the Bank. For the IT graduate stream, the governing program (Jumpstart) has a quota of 40 per cent women. The main talent pool for this program are the UTS and UNSW Co-Operative scholarships which have a high female quota.



There have been targeted reviews of a range of aspects of the Graduate Development Program over time, including feedback from graduate cohorts. Those have resulted in changes to the program and to the recruitment process:

- The Bank introduced a formal rotation program in 2014 to broaden graduates' exposure across the Bank's functions. Graduates in all streams work in at least two different roles during the two-year program (for graduates in the Economics and Finance stream, this is almost always across two different policy Groups). In recent years, rotations in the policy areas have been decided and communicated at the start of the program.

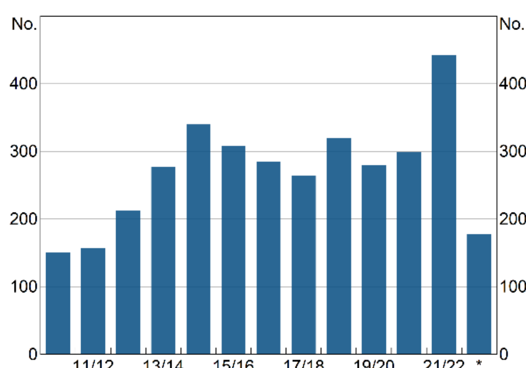
- A new performance rating system was introduced to provide better clarity on progress towards graduation from the program and improve feedback/coaching discussions.
- The learning program has been adjusted based on feedback and changing skill needs (e.g. training in a wider range of data management tools). To adjust to COVID-19 lockdowns and remote working, the learning program was adapted and delivered online to ensure their skills and capabilities continued to be developed at pre-COVID-19 standards.
- To continue to attract high-quality graduates in a competitive market environment, the Bank introduced a four-week advertising campaign and adjusted its timelines to better align with those of other organisations seeking to attract graduates.
- To increase awareness of the Graduate Development Program, the Bank has: implemented a social media campaign; expanded digital advertising across a broader range of graduate recruitment forums; fostered connections with more universities across Australia; and increased participation at university career fairs and collaboration with student societies.
- The Bank has also recently created a dedicated position to review and manage all aspects of the program, including a focus on increasing graduate diversity and inclusion.
- Increasing transparency on pay for graduates and analysts, prompted by feedback from early career staff. That has included greater information on changes in remuneration over time (including periods where it has been fairly static or reduced, and changes in the structure of the package), and how remuneration is benchmarked against other organisations.

Also in response to feedback, providing clearer guidance on leave entitlements (especially appropriate use of overtime in light of increased workloads) and more clarity around rotation and secondment opportunities (more actively promoting rotation and secondment opportunities).

5.5. Data/analysis of recruitment and staffing policies, including time to fill positions, rates of staff turnover, employee retention rates, number of applications and candidates per position or general recruitment advertised. *(Past 10 years)*

Over the past decade, the Bank has seen a substantial increase in the number of new recruits. Advertised vacancies more than doubled between 2012 and 2015, remaining at that higher level since then and increasing again in 2021/22 (Graph 12).

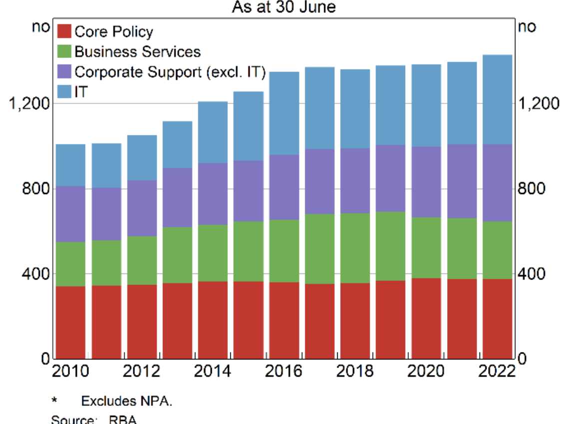
Graph 12
Advertised Vacancies



Increased recruitment has in part reflected growth in the Bank's staff numbers over this period, of around a third. Much of that has reflected growth in the number of staff outside of the policy functions, especially in technology (given the increased importance and complexity of these services and several large projects) (Graph 13). Staff in the core policy groups now account for less than one-third of all Bank staff. Technology and other corporate functions account for a large share of staff turnover, as staff in these careers move between organisations more frequently (including through fixed-term contracts) than the historically long-tenured policy staff (Graph 14). In addition, within policy areas there has been increased recruitment of mid-career hires to complement early career recruitment through the graduate program (this important shift is discussed in depth in responses to the first request for information).

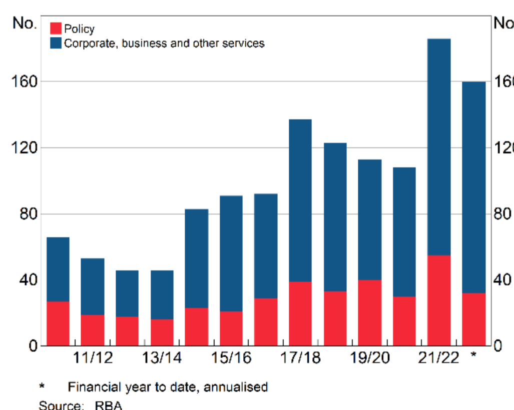
Graph 13

RBA Employee Numbers*



Graph 14

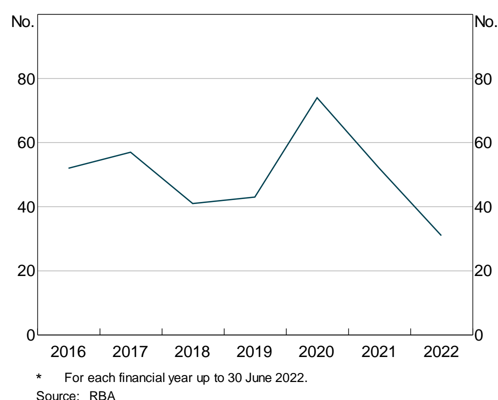
Resignations



The increase in recruitment also reflects periods of tightness in the labour market and heightened competition for staff. Tighter conditions by 2018/19 and, most acutely, over the past year, have prompted a substantial increase in resignations, from unusually low levels in parts of the Bank. The number of applicants per position fluctuates with labour market conditions, and has recently declined to around 30 from a historical average of around 50 (Graph 15).

Graph 15

Applicants per vacancy*

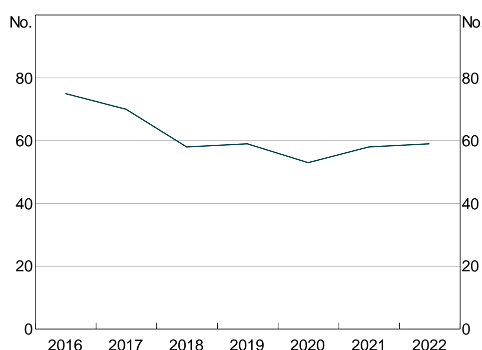


The Bank has been reasonably successful in filling roles; the average time to fill has been little changed over time at around two months (Graph 16). Amid the current very competitive environment for staff, the Bank has increased its resources for recruitment, used more proactive means of finding

staff and made greater use of employment agencies. For particularly critical or high-demand roles (notably in IT), the Bank has introduced a referral program and streamlined internal recruitment/approval processes.

Graph 16

Average days to fill vacancy*



* For each financial year up to 30 June 2022.
Source: RBA

To bolster its ability to attract staff, the Bank has also recently improved its branding in the job market to showcase what it is like to work for the Bank (an 'employee value proposition'). The Bank found that prospective employees did not have a good sense of what a career at the Bank offered, and it has not rated as highly as comparable organisations on platforms such as Glassdoor. The Bank's staff report that they are attracted to the strong purpose, meaningful work undertaken, collaborative culture and flexibility offered by the Bank. These attractions are the centrepiece of the 'Be More' campaign, launched for the Bank's recruitment activities, careers site and on social media in mid-2022.

A number of changes have been aimed at ensuring better gender balance in the people who apply for roles at the Bank. An internal review of job advertisements was conducted and a tool implemented that uses AI to analyse job ad copy, remove biased language, and ensure a broad audience is attracted. Human Resources Department is currently undertaking an audit of its hiring and on-boarding processes to identify and assess further opportunities to support increased diversity and inclusion.

An ongoing challenge for staffing the Bank's policy functions is that over the past few decades there has been a noticeable fall in the size and diversity of the economics student population – both at school and university. While this has implications for economic literacy and the longer-term health of the economics discipline in Australia, it is also a strategic issue for the Bank's future recruitment of policy economists. Addressing this challenge is a major priority for the Bank, and it conducts extensive work to help support the wider study of economics through its Public Access and Education activities.

Documents: Recruitment

A Matter of Diversity (2022)	Speech	Link
What Happened to the Study of Economics? (2018)	Speech	Link

5.6. Internal RBA recruitment policies and practices, including standard RBA interview questions, candidate assessment and recruitment tools, onboarding support, and the RBA's Position Management Policy. *(Current)*

The Bank's recruitment is governed by the following policies and practices.

Position Management Policy

The Position Management Policy lays out a framework for the Bank to manage its organisation structure with an aim to:

- classify positions according to their complexity, accountabilities and knowledge requirements and benchmark with similar roles in the Bank or other organisations
- create role clarity for employees and managers
- provide an objective basis for recruitment, performance and development
- create flexibility to accommodate short-term demands and ensure appropriate control over the number of positions within the organisation.

Recruitment and Selection Guideline

The Recruitment and Selection Guideline provides information on how to apply the Bank's Position Management Policy. There are three core principles for recruitment and selection decision-making:

- *Transparency and objectivity*: prospective candidates should be aware of vacancies and the selection criteria
- *Merit-based*: candidates are selected on the basis that they are best able to perform the duties of the position
- *Non-discriminatory*: hiring decisions are not to be made on the basis of attributes such as a person's age, sex, disability, race, religion, sexual orientation or ethnic background.

Interview questions

The Bank has developed an Interview Guide Builder, which enables hiring managers to generate customised interview guides that include technical questions, questions about the Bank's values, and candidate capabilities and motivations. The builder supports consistency and professionalism in interviews, and in turn better skill matches for roles.

Candidate assessment and recruitment tools

For some roles, the Bank uses psychometric testing after first round interviews to help inform the selection process, customised for different types of roles. These include a questionnaire measuring candidate's preferred way of thinking and behaving, which is mapped to the Bank's Capability Framework.

Onboarding support

The Bank offers on-boarding support to new employees during their first six months of employment to help starters feel welcomed, fully equipped and settled in their role. Key milestones in the process include:

- *First day orientation session and new starter induction*: new starters are introduced to the Bank's functions and its shared goals and values, the Bank's benefits, and platforms such as for managing leave and training.[42] Speakers have included the Deputy Governor and the Head of Human Resources.
- *Meeting with manager*: Hiring managers are responsible for managing a new employee's transition into their section and role. This includes: planning out work agendas, meeting key stakeholders, setting performance and development goals, and providing regular support and feedback.
- *Buddy program*: A 'buddy' partners with a new starter during their first three months to help them feel welcome, navigate the Bank, and provide support and guidance. Hiring managers are responsible for selecting a buddy for their new starter.

5.7. Internal audit plans and board papers for audit committee meetings. *(Past 10 years)*

A list of engagements completed by the Bank's Audit Department over the past 10 years has been provided to the Panel.

There has been a shift over this time in what the Executive Committee and the Audit Committee seeks from the Bank's audit function and also, more recently, a preference for the Bank to adopt contemporary 'governance, risk and controls' and 'three lines' practices.[43] The Audit Department acts as the Bank's 'third line' by providing independent and objective assurance, although does not review how well the Bank's monetary and other policies have met their objectives.

Up until around 2015 Audit had a strong focus on providing assurance on financial controls and was relied upon to provide support to significant elements of the Bank's external audit each year. The internal audit plans approved by the Audit Committee were over a three-year cycle and focused primarily on completing a cycle of departmental reviews of key controls, along with reviews of a number of key initiatives in the Bank. Over the years leading up to 2020 the Audit Plan became more dynamic, still with a strong emphasis on departments but a number of performance-style reviews were also completed.

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42 On the Bank's Intranet, there is also a 'Welcome to the Bank' page which new starters can refer to for a range of information on key policies and procedures, bank facilities, and staff communications.

43 'Three lines' refers to the Institute of Internal Auditors' model (three-lines-model-updated.pdf (theiia.org)), which outlines that:

- the business (first line) is responsible for the provision of products and services to clients and managing the risk of this
- oversight functions such as Risk, HR, Legal and Finance (collectively second line) provide expertise, support, monitoring and challenge on risk-related matters
- internal audit, or third line, provides independent and objective assurance and advice on all matters related to the achievement of objectives.

From early 2020 a number of prior individual engagements were rolled up into single end-to-end process reviews (for instance the Financial Markets Operations engagement now covers six former departmental reviews). In addition, the reporting style was extensively overhauled. With the onset of the pandemic, delivery of the Audit Plan was stopped as the Bank reacted to the pandemic and implemented substantial economic support measures. Audit developed and delivered a critical controls program. Since then Audit has adopted a risk-based approach, developing a six-monthly risk-based Audit Plan covering a range of the higher-risk areas as agreed with the Bank's executives. Audit has developed its capability in data analytics and, more recently, assurance of culture and digital transformation. It has also moved from sample testing to more a data-based, whole-of-population approach. There is still an expectation that Audit will support aspects of the annual external audit. That is the basis on which the Australian National Audit Office (ANAO, the Bank's external auditor) has contracted with KPMG as its external audit partner on the RBA account.

Board papers are rarely provided to the Audit Committee. The annual agenda or work plan of the Audit Committee covers regular agenda items. At each meeting, papers and reports covering contemporaneous issues are discussed, most of which relate to the Bank's financial results, financial reporting or risk culture.

5.8. Information on performance review and development planning processes, career progression and pathways, and capability frameworks. *(Past 10 years)*

Performance review and development planning processes

The Bank's annual performance review cycle involves four stages:

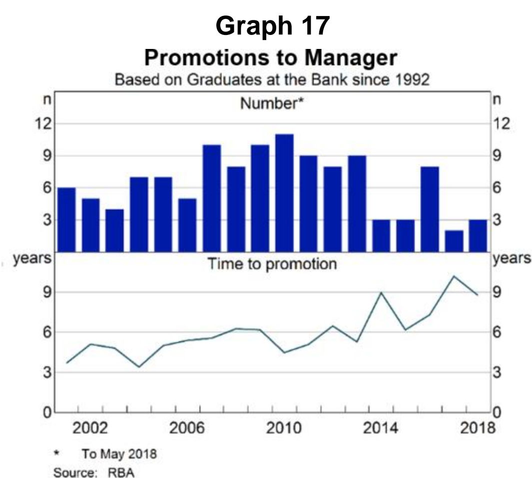
- agree and set performance and development goals at the start of the performance year
- ongoing and regular performance feedback
- mid-term review and discussion
- end-term review and discussion including assignment of an overall performance rating.

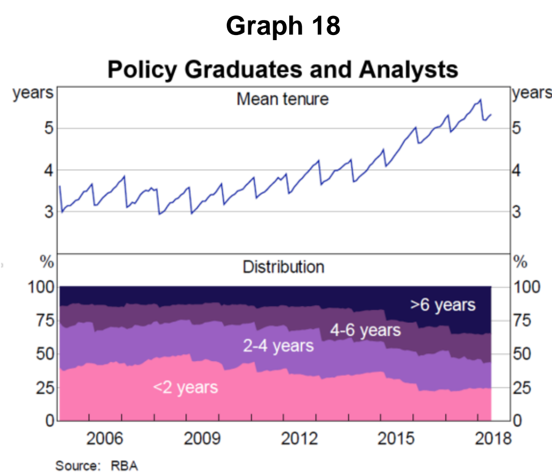
The process has evolved over the past decade in response to feedback from engagement surveys and managers. The Bank is seeking to make the process less cumbersome, give staff earlier input and increase the focus on development planning. A series of changes have separated performance management, development planning and talent/succession planning. In the past, these were largely combined into a single process, which meant that discussions tended to be shorter term in focus and performance ratings were taken as a primary signal of promotion potential, hindering their effectiveness in providing feedback on skills and development. New tools have been introduced to aid managers in development discussions. Employees are strongly encouraged to propose their own goals and to provide self-assessments at the start of the review process. An area of ongoing focus is to ensure a culture in which management are focused on staff development (as discussed in responses to Question 5.3).

Career progression/pathways and capability frameworks

The Bank's career progression and capability frameworks were overhauled in 2020, with the launch of MyCareer. The new framework is designed to help staff to manage their careers with a new core capability framework; job profiles that specify potential career pathways; and more clarity on what different sorts of roles use an employee's existing skills or what new skills would be needed.

A lack of promotions had become a significant organisational issue for the Bank by the middle of last decade, especially in the core policy groups. That reflected lower turnover in the labour market and lower rates of resignation. Analysis in early 2018 found that the time to get promoted from analyst to manager had increased from three to six years to around nine to ten years over the prior decade (Graph 17). Mean tenure among policy analysts nearly doubled in that time, affecting staff engagement (Graph 18). Retention rates for new graduate cohorts declined given the long path to promotion. Similar trends were apparent in management; the portion of staff in manager-level roles with more than eight years tenure at level rose from a quarter to more than half.





Since that time, there have been improvements owing to tighter labour market conditions and initiatives to open up more opportunities. In 2021 and 2022 to date, there have been 17 promotions to manager level within the core policy groups, up from two to three per year for most of the 2014–18 period. Time to be promoted to manager has declined to eight years, although is still longer than in the period before 2014.

In addition, as part of MyCareer, a new pre-management career progression stage (Lead Analyst) was introduced to recognise staff at senior analyst who had developed more advanced capabilities and to signal a strong trajectory towards management roles.