

Discussion slides

**Working group
on expected inflation**

28 November 2019

Expected Inflation – Agenda

Meeting agenda:

1. Introduction
2. Compensation target (Issue 2)
3. Best estimate of expected inflation (Issue 1)
Based on September material
4. Additional material (additional ENA slides)
5. Next steps

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Compensation target (Issue 2 from 2017)

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Expected inflation – Issue 2 content

2017 review – key issues:

- Issue 1 – What method should we use to estimate expected inflation?
 - ‘a methodology that the AER determines is likely to result in the best estimates of expected inflation’
- Issue 2 – Does the regulatory framework deliver appropriate compensation for inflation?
 - Does it achieve current target (real rate of return)?
 - Should it instead target a different rate of return?

Expected inflation – Issue 2 content

2017 review – clarify terminology:

- Expected inflation is the inflation expected at the time of the regulatory determination – an *ex ante* measure
 - Inflation outcomes (*ex post*) may differ from expected inflation – but this does not change what the *ex ante* inflation expectation was
- Expected inflation is over a 10 year horizon, consistent with the horizon for rate of return

Expected inflation – Issue 2 content

2017 review – analysis principles:

- Look at combined effect of PTRM & Pricing & RFM
- All relevant cashflows (revenue and asset values)
- Calculate NPV with regard to inflation
 - Can't compare nominal outcomes in different inflation scenarios – so use real cashflows and real discount rate
- Consider interactions across multiple regulatory periods
- Algebraic analysis paired with model-based analysis

Expected inflation – Issue 2 content

2017 review - key findings on issue 2:

- What **currently** happens under the AER approach?
- We target the initial (ex ante) real rate of return
 - Derived from nominal rate of return less expected inflation
- We deliver that initial ex ante real return (plus actual inflation)
 - Some minor departures

Expected inflation – Issue 2 content

2017 review - key findings on issue 2:

- **Should** we instead target a different approach?
- Change of target considered:
 1. Real return on capital (status quo)
 2. Nominal return on capital
 3. Real return on equity (and nominal return on debt)
- Focus on ensuring correct compensation package – change to target would reallocate inflation exposure.
- Fundamental change to the regulatory regime.

Expected inflation – Issue 2 content

2017 review - key findings on issue 2:

- Real rate of return target should be maintained:
 - Investments are inflation protected
 - Real returns drive opportunity costs
 - Correct overall compensation package
 - Not clear how to adjust rate of return under alternatives (beta, credit rating links)
 - Financing decisions borne by NSP
 - Consistent with past regulatory treatment
 - Risk with methodology change

Expected inflation – Issue 2 content

2017 review – issue 2 implications:

- If we were to change the rate of return target, this would materially alter risks and inflation exposure for networks and consumers
 - No consensus for change

Expected inflation – Issue 2 content

September material – issue 2:

- Alignment between September material and submissions in 2017
 - Material on ‘mismatch’ and under compensation (using nominal framework) – these were considered in 2017
 - Material on potential change to target – did not advance reasoning beyond that in 2017

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Best estimate of expected inflation (Issue 1 from 2017) September material

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Key issues – Expected inflation (Issue 1)

Outline of this section:

1. What did AER's 2017 review cover?
2. What material was recently put in front of the AER (pre 7 Nov 2019) and what are our initial views?
3. Material submitted on 7 Nov 2019 by ENA is covered in the next session

What did the AER's 2017 inflation review cover?

The 2017 review identified Issue 1 as: what method should the AER use to estimate expected inflation?

- In 2017 we broadly considered four options:
 - 1) The RBA approach
 - 2) the break even approach
 - 3) the 10 year inflation rate implied from zero coupon inflation swaps
 - 4) Survey-based approaches to expected inflation

2017 Inflation review conclusions on issue 1?

- We would continue to use the RBA approach
- We would monitor whether long term inflation expectations become unanchored, including by monitoring a long-term inflation expectations survey undertaken by Consensus Economics. We noted the following RBA advice to the AER:

“Long-term surveys of expectations are a good way to estimate long-term inflation expectations since they should not be influenced by temporary deviations or financial market developments, and because the respondents are well-informed. They should also react to any unanchoring of expectations. Internal work has found that the Consensus Economics survey is the measure of long-term expectations that best abstracts from near-term influences on inflation. The main drawback of the Consensus Economics survey is its frequency; long-term expectations are only surveyed twice a year (in April and October). Furthermore, the information in this survey is proprietary, which may restrict replicability.”

RBA, *Letter re: Regulatory treatment of inflation - Inflation expectations*, 5 July 2017, p. 2.

Key positions put to the AER pre 7 Nov

- 1) A key assumption underpinning our current 'RBA' approach is that long-term inflation expectations are anchored within the RBA target band.
- 2) Outturn inflation has been below the midpoint of the RBA's target band (of 2 to 3 per cent) for the past five years and this is not expected to change given the experience of economies overseas.
- 3) The RBA has not delivered inflation above 2 per cent after overestimating inflation in its prior forecasts and the RBA is currently reviewing its inflation forecast methodology
- 4) Measures of market expectations are now lower than during the 2017 inflation review (particularly relying on an analyst report).

Each point is covered on later slides (but note the AER considered the information both alone and in aggregate)

Key positions put to the AER

1. Long term expectations and the RBA target band

A key assumption of the current approach, that long-term inflation expectations are anchored within the RBA target band, was well documented during the 2017 inflation review. We also detailed a monitoring process to test whether long-term inflation expectations remained anchored within the RBA inflation target band using Consensus Economics data.

Consistent with our commitment in 2017, we have monitored Consensus Economics long-term expected inflation forecasts. The data supports the proposition that long-term inflation expectations remain anchored within the RBA target band.

Key positions put to the AER

2. Implications of low outturn inflation

We agree that inflation has been below the inflation target for the past five years. However, inflation expectations are an ex-ante measure and outturn inflation being below the target band is only cause for concern if it changes inflation expectations. This is why we proposed a monitoring program in the 2017 review to test the RBA methods primary limitation, stating:

“The current method's primary potential imperfection, its vulnerability to sustained changes in expectations, can be partially addressed by the AER monitoring the Consensus Economics survey. The AER will monitor the series as a deviation of the series away from the RBA's target band would potentially indicate an unanchoring of inflation expectations.^{FN} If there is such an indication, at that time the AER would seek the advice of the RBA. Currently the Consensus Economics survey is inappropriate to use by itself.

FOOTNOTE: RBA, *Letter re: Regulatory treatment of inflation - Inflation expectations*, 5 July 2017.”

AER, Final position paper - Regulatory treatment of inflation,
December 2017, p. 48.

Key positions put to the AER

3. RBA short term forecasts

The RBA does appear to have overestimated short term inflation forecasts from 2014 to 2017. However, this was also true for other market economist forecasts. No evidence has been provided that the inflation expectations were not appropriate ex ante or that this overestimation will continue.

As Cassidy (RBA 2019) stated:

Development and refinement of the RBA's inflation models is an ongoing process, as it should be.

We consider regularly reviewing a forecasting methodology is good practice and not an admission that the current forecast methodology is no longer appropriate.

Key positions put to the AER

4. Market measures of inflation

The material provided indicates raw market measures of inflation expectations appear to be towards the lower end of historical ranges.

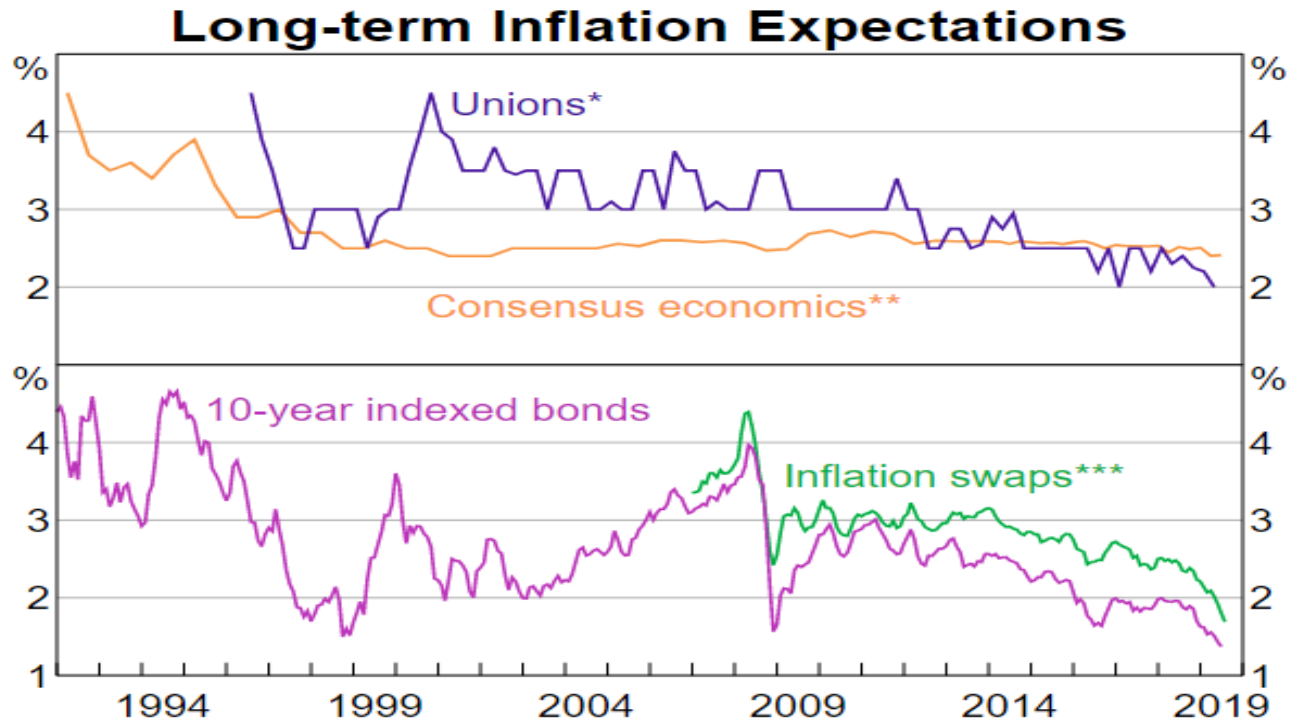
However, during the 2017 inflation review (based on academic articles and decompositions) we detailed a number of the biases in these raw measures and how they were not a good measure of actual market inflation expectations.

Are long term inflation expectations still anchored within the RBA target band?

As noted earlier, a key assumption of our current approach is the assumption long-term inflation expectations remain anchored within the RBA target band. In looking at this we have examined information including:

- Long term inflation expectations based on a number of measures (including Consensus Economics long-term inflation expectation data)
- Recent RBA articles

Long Term Inflation Expectations



* Average over the next five to ten years

** Average over six to ten years in the future

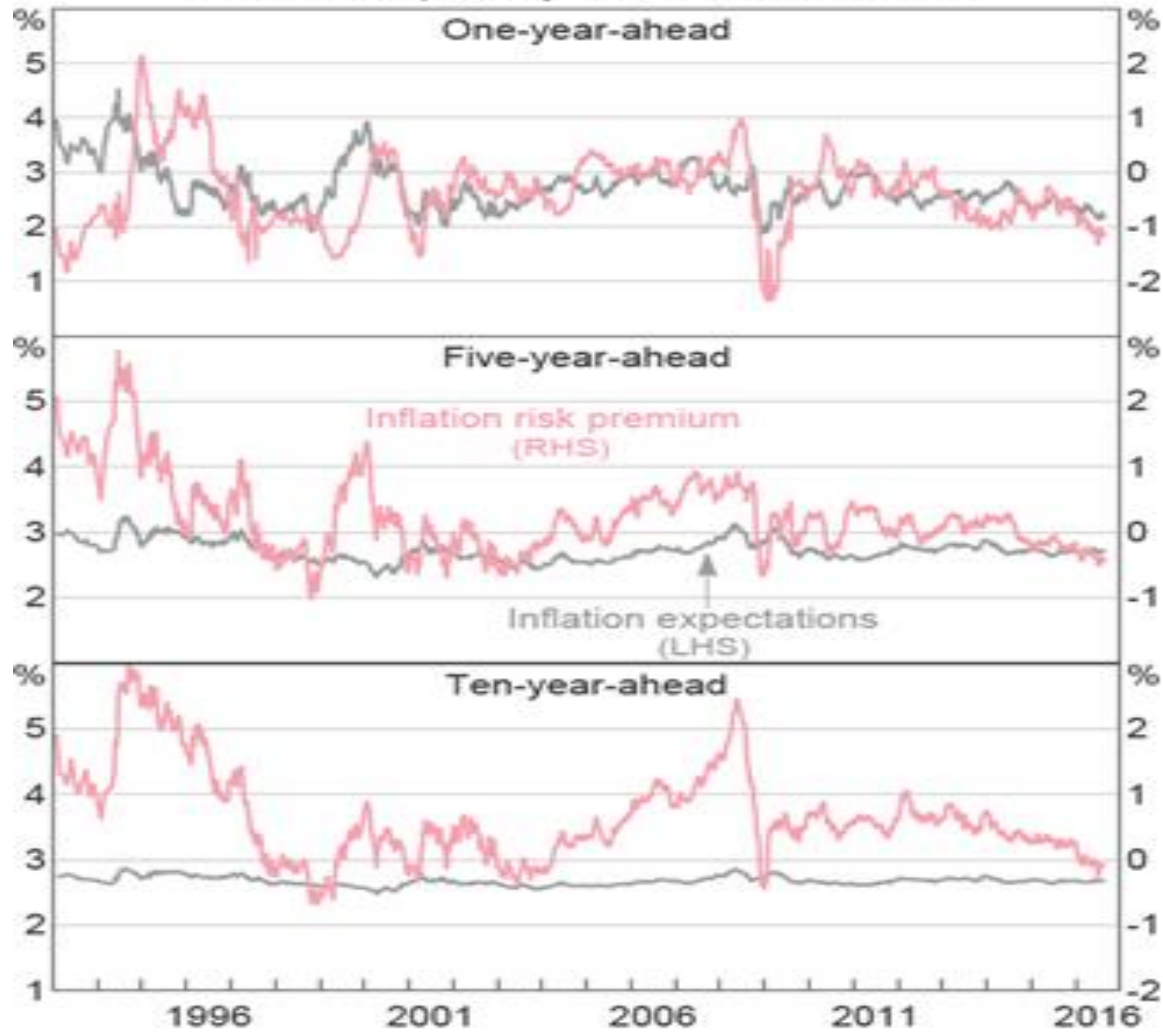
*** Five-to-ten-year forward

Sources: Australian Council of Trade Unions; Bloomberg; Consensus Economics; RBA; Workplace Research Centre; Yieldbroker

Source: Aug 2019 RBA Statement of Monetary Policy

Inflation Expectations and Inflation Risk Premia

Annualised quarterly inflation rate at horizon

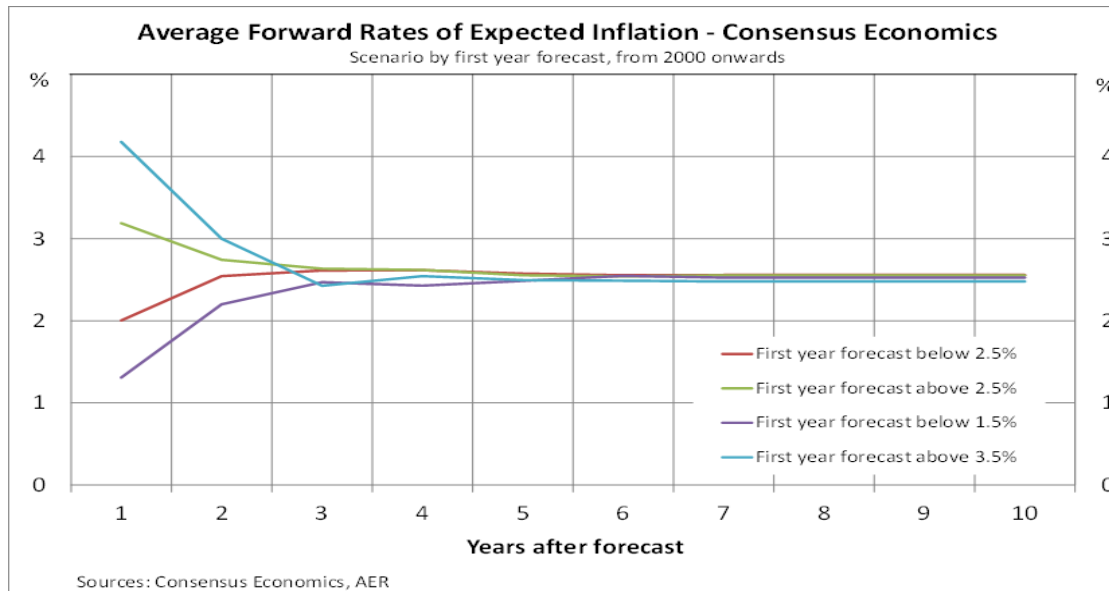


Source: Finlay and Wende (2011)

Source: Moore, Dec 2016 RBA Bulletin, p27.

Consensus Economics data

Average forward rates of expected inflation, with groups based on expected inflation in year one (from 2017 Inflation review data from April 2000 to June 2017)



Source: AER Inflation Review Final Position Paper, p 14.

We have also examined this chart estimated over the following periods:

- April 2000 to Oct 2019
- Oct 2017 to Oct 2019

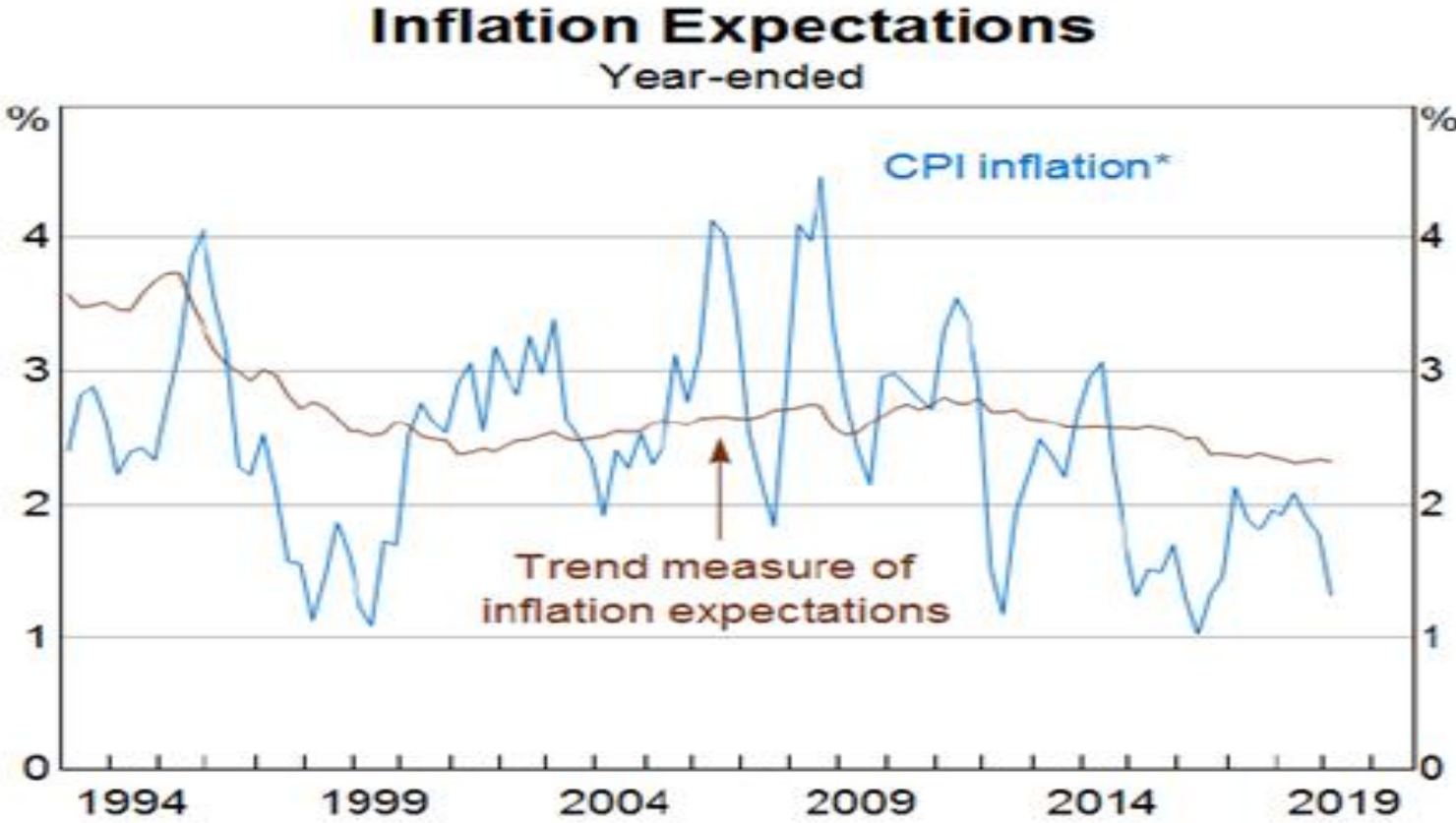
We have also examined the changes in the quarterly estimates of expected inflation since June 2017.

Other information – RBA articles

We have examined a number of recent RBA articles related to expected inflation:

- Cusbert (2017) updates previous work which combines a range of measures of expected inflation. He estimates that longer term inflation expectations remain within the RBA target band and hover near the midpoint. Cusbert also reiterates that bond rates do not purely reflect inflation expectations because they also include risk and liquidity premia.
- Hambur and Finlay (2018) used affine term structure model estimates from 1993 to December 2016. They found that once inflation expectations from breakeven inflation estimates are decomposed (removing real and inflation risk premia from breakeven inflation), 10 year inflation expectations have remained within the RBA target band and have been more stable than the raw breakeven inflation estimates.
- Similarly, Cassidy et al (2019) found that movements in financial market measures of expected inflation such as bonds and inflation swaps are difficult to interpret because these markets are not particularly liquid in Australia. She indicates this means these measures have a time-varying liquidity premium, and can also contain a time varying inflation risk premium. Cassidy also provides an updated graph of a measure of inflation expectations which she has attempted to be removed bias from (labelled ‘trend measure of inflation expectations’ in the graph on the next slide). She also indicates long-run survey based measures of inflation expectations remain around 2.5 per cent.

Other information – RBA articles (cont)



* Excludes interest charges and indirect deposit & loan facilities; adjusted for the tax changes of 1999–2000

Sources: ABS; RBA

Source: Cassidy, Rankin, Read and Seibold 2019

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Additional material discussion

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Key issues – Inflation

Outline of this section:

1. Brief ENA overview of November material
2. Discussion
3. Further recent material examined by AER

AER examination of recent material

We have examined the following information:

- Changes in RBA short-term CPI inflation forecasts between Aug 2019 and Nov 2019
- Changes in media releases over the period between Aug and Nov for obvious sentiment change by the RBA
- The minutes of the Nov 2019 RBA Monetary Policy Meeting

It appears:

- The RBA expects slightly lower CPI inflation over the next two years than it did three months ago. RBA forecasts in Aug 2019 and Nov 2019 were as follows:

	Year-ended CPI inflation (per cent)				
Monetary statement	Dec 2019	June 2020	Dec 2020	June 2021	Dec 2021
August 2019	1.7	1.7	1.9	2.0	2.1
Nov 2019	1.9	1.9	1.8	1.9	1.9

- The RBA remains focused on bringing inflation back within its target band
- The RBA (in Nov 2019) considered dropping interest rates further, but determined it was appropriate to wait to see the impact of recent decreases in the cash rate

Other recent information

RBA monetary statement – media releases

Quote from the Nov 2019 media release statement 5 Nov 2019 (note not the entire media release):

The recent inflation data were broadly as expected, with headline inflation at 1.7 per cent over the year to the September quarter. The central scenario remains for inflation to pick up, but to do so only gradually. In both headline and underlying terms, inflation is expected to be close to 2 per cent in 2020 and 2021.

There are further signs of a turnaround in established housing markets, especially in Sydney and Melbourne. In contrast, new dwelling activity is still declining and growth in housing credit remains low. Demand for credit by investors is subdued and credit conditions, especially for small and medium-sized businesses, remain tight. Mortgage rates are at record lows and there is strong competition for borrowers of high credit quality.

The easing of monetary policy since June is supporting employment and income growth in Australia and a return of inflation to the medium-term target range. Given global developments and the evidence of the spare capacity in the Australian economy, it is reasonable to expect that an extended period of low interest rates will be required in Australia to reach full employment and achieve the inflation target. The Board will continue to monitor developments, including in the labour market, and is prepared to ease monetary policy further if needed to support sustainable growth in the economy, full employment and the achievement of the inflation target over time.

Other recent information

RBA monetary statement – media releases

Nov 2019 media release statement 5 Nov 2019 relative to earlier decision media releases:

- The Nov statement (relative to Aug) adds the bolded section to following sentence “A further gradual lift in wages growth would be a welcome development **and is needed for inflation to be sustainably within the 2–3 per cent target range.**”
- The Nov statement media release says “The outlook for the Australian economy is little changed from three months ago.”
- Both Aug 2019 and Nov 2019 statement media releases indicated an extended period of low interest rates would be required to reduce unemployment and achieve the inflation target. This also existed in the Sept 2019 and Oct 2019 statements
- On inflation expectation the Aug 2019 statement media release said “In both headline and underlying terms, inflation is expected to be a little under 2 per cent over 2020 and a little above 2 per cent over 2021”, while the Nov 2019 statement said “In both headline and underlying terms, inflation is expected to be close to 2 per cent in 2020 and 2021”. This change was first made in the Nov Statement media release. The Sept and Oct statement media releases used the same wording as the Aug statement media release.

Other recent information

RBA monetary statement – Nov minutes

Nov 2019 Monetary Statement minutes selected quotes (we suggest interested parties read the entire minutes and form their own view on what they may indicate):

“Underlying and headline inflation were expected to increase to around 2 per cent by the end of 2021.

...

Members noted that the risks to the wage and price inflation forecasts were balanced. Wages could increase more quickly than forecast if the pick-up in output growth erodes spare capacity more quickly than anticipated. However, an extended period of low wages growth and inflation could mean that wage-setting norms would be slow to move higher. Members observed that a further gradual lift in wages growth would be needed for inflation to be sustainably within the 2–3 per cent target range.

...

The outlook for the Australian economy was little changed since August.

...

In the September quarter, inflation had been broadly as expected at 1.7 per cent over the year. Inflationary pressures had remained subdued, held down by very low housing-related prices and slow growth in labour costs and administered prices. Over time, inflation was expected to increase gradually in response to some tightening in labour market conditions, to be close to 2 per cent in 2020 and 2021.

...

Other recent information

RBA monetary statement – Nov minutes

Nov 2019 Monetary Statement minutes selected quotes (cont):

The Board agreed that a case could be made to ease monetary policy at this meeting, but that the most appropriate approach would be to maintain the current stance of monetary policy and to make another full assessment once more evidence of the effects of the earlier monetary easing had become available. Global financial markets were signalling a decline in pessimism, which, if sustained, could lead to better than expected outcomes for the global economy. The significant easing of monetary policy in Australia since the middle of the year was supporting employment and income growth and a gradual return of inflation to the medium-term target range. The established housing market was picking up, which would have positive spillovers for the broader economy, although the size of these spillovers was uncertain. Further evidence on spending by households was required before drawing a conclusion on the effects of the tax cuts and low interest rates. Having already delivered a substantial monetary stimulus in recent months, there was a case to wait and assess the effects of this stimulus, especially given the long and variable lags.

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Next steps

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