AUSTRALIAN MARKETS WEEKLY

A new easing cycle, the effective lower bound, unconventional policy & forward guidance

In this issue

Analysis – A new easing cycle, the effective lower bound, unconventional policy & forward guidance

- The RBA is expected to cut the cash rate on Tuesday to a new record low of 1.25%. We expect a follow-up cut in August, with the risk of additional stimulus by early 2020. The depth of the easing cycle ultimately delivered by the RBA will depend on: (1) the extent of the slowdown in the economy; and (2) the bank's assessment of the stance of policy, relative to its view of the neutral cash rate. The RBA has reduced its midpoint estimate of the neutral rate from 5% prior to the global financial crisis to 3.5% in 2017 and we think it could soon trim it to 3-3.25% given lower potential growth and a wider spread between mortgage rates and the cash rate.
- If the economy turns out worse than we expect, a typical easing cycle would quickly exhaust the RBA's capacity for rate cuts given it has previously put the effective lower bound at 1%, plus or minus a bit. This would bring unconventional policy into play, where the RBA's 2016 study of international experience suggests combining options may yield better results than adopting a single policy at a time. That said, the RBA may first opt to expand its balance sheet given the temporary increase in the RBA and Commonwealth's balance sheets proved successful during the global financial crisis. The RBA cautioned, though, that its adoption of unorthodox policies would likely be reactive rather than pre-emptive.
- Regardless of whether the downside scenario that could trigger unconventional policy is realised, we think the RBA might take more steps in providing forward guidance at the current low level of interest rates, building on its use of scenarios in its commentary and reliance on market pricing of rates in preparing its economic forecasts.

The week ahead – RBA expected to cut; US-China trade tensions worsen

- The RBA meets on Tuesday and Q1 GDP is released on Wednesday. NAB and the market both expect the RBA to cut the cash rate by 25bp to 1.25%. Although the accompanying press release will likely concentrate on the June decision, we think Governor Lowe could outline a scenario for further easing in when he speaks that night. The RBA's Alex Heath is speaking on Wednesday on Australia's resource industry. Balancing recent weak partials and likely positive indicators on Monday and Tuesday, NAB expects a 0.4% q/q / 1.7% y/y result (mkt: 0.5%) for GDP. NAB forecasts unusually weak retail sales, falling 0.3% in April (mkt: 0.2% m/m).
- Offshore, trade tensions dominate. The US announced last week that it might impose tariffs on Mexico, while China introduced tariffs on $US60b of imports from the US and announced a probe into FedEx.

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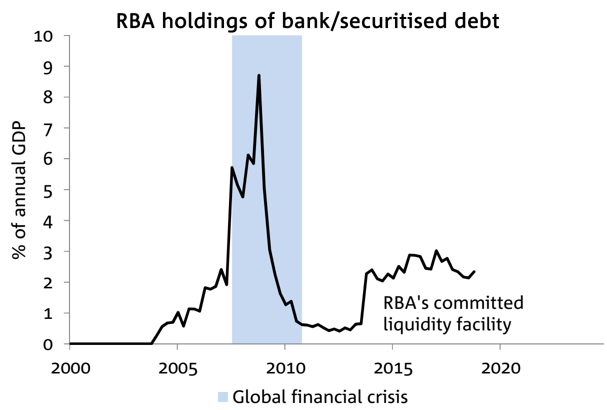
[Ask the Interest Rate Strategists](#)

Key markets over the past week

	Last	% chg week		Last	bp/% chg week
AUD	0.6951	0.5	RBA cash	1.50	0
AUD/CNY	4.80	0.6	3y swap	1.21	0
AUD/JPY	75.2	-0.7	ASX 200	6,327	-1.9
AUD/EUR	0.622	0.6	Iron ore	96	-8.4
AUD/NZD	1.061	0.4	WTI oil	53.0	-9.7

Source: Bloomberg

Chart of the week: The RBA undertook QE during the crisis



Kieran Davies

A new easing cycle, the effective lower bound, unconventional policy & forward guidance

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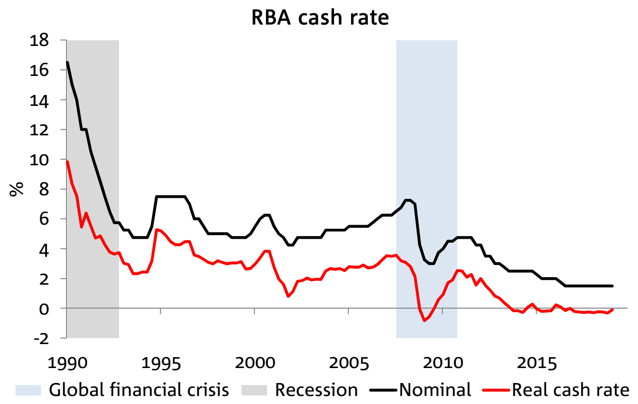
- If the economy turns out worse than we expect, a typical easing cycle would quickly exhaust the RBA's capacity for rate cuts given it has previously put the effective lower bound at 1%, plus or minus a bit. This would bring unconventional policy into play, where the RBA's 2016 study of international experience suggests combining options may yield better results than adopting a single policy at a time. That said, the RBA may first opt to expand its balance sheet given the temporary increase in the RBA and Commonwealth's balance sheets proved successful during the global financial crisis. The RBA cautioned, though, that its adoption of unorthodox policies would likely be reactive rather than pre-emptive.
- Regardless of whether the downside scenario that could trigger unconventional policy is realised, we think the RBA might take more steps in providing forward guidance at the current low level of interest rates, building on its use of scenarios in its commentary and reliance on market pricing of rates in preparing its economic forecasts.

The RBA is about to embark on a new easing cycle

The Reserve Bank Board meets on Tuesday, when it is unanimously expected to cut the cash rate by 25bp to 1.25%. This would mark the lowest nominal cash rate since the bank was established in 1960. The likely rate cut would also herald the start of a new easing cycle given that the bank had a tightening bias last year.

The cut was signalled by Governor Lowe in a recent speech, where he said the bank's board would consider the case for lower interest rates at its 4 June meeting.[1] He also suggested that the bank might cut rates twice, noting that the bank's economic forecasts were based on then-market pricing for the cash rate reaching 1% over the next year.[2]

Chart 1: The RBA is on the verge of cutting the cash rate



Note: Real cash rate = nominal cash rate – annual trimmed mean inflation.
Source: Australian Bureau of Statistics, Reserve Bank of Australia, Melbourne Institute, National Australia Bank

We expect two rate cuts with the risk of additional stimulus next year

Our expectation has been that the Reserve Bank will follow a June cut with another 25bp reduction in August, taking the cash rate to 1%. We also see the risk of additional policy stimulus in early 2020. The timing of the follow-up cut and the decision to deliver additional stimulus in 2020 will depend on the flow of the data.

Additional stimulus next year could take the form of either a third rate cut to 0.75% or an alternative policy action, such as adjusting macroprudential standards or quantitative easing. Opting for alternative policy action would depend on the effectiveness of earlier rate cuts, including the impact of a lower cash rate on the functioning of the financial system.

The extent of policy easing will depend on the state of the economy and the RBA's view on the neutral cash rate

While our central case is for two cuts with the risk of additional stimulus, the policy easing ultimately delivered by the Reserve Bank will depend on the extent of the slowdown in the economy and the bank's assessment of the stance of policy, judged relative to its view on the neutral cash rate. Moreover, the decision to deliver stimulus via unconventional policy will depend on the bank's view on the effective lower bound for the cash rate.

The Reserve Bank has lowered its estimate of the neutral cash rate over time.

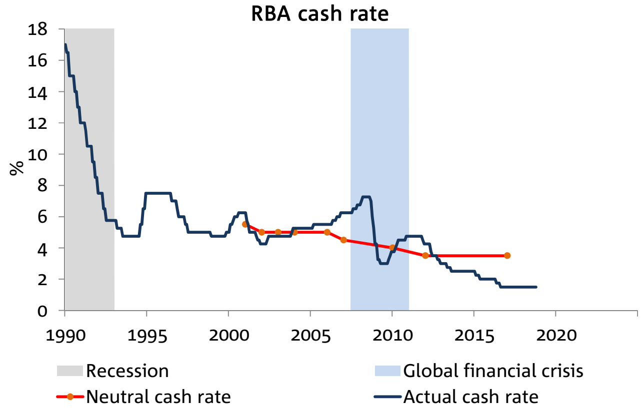
Governor Lowe discussed the neutral cash rate in 2012, when he said that the "*normal* level of the cash rate is lower than it otherwise would have been" because the bank has offset the effect of higher funding costs on lending rates.[3] At that time, he said that the cash rate was about 1.5pp lower as a result.

In 2017, the Reserve Bank revisited the issue, estimating that the neutral real cash rate was around 1%. Given the inflation target band of 2-3%, this implied a neutral nominal cash rate of 3-4%, with a midpoint of 3.5%.[4] This compared with the bank's pre-global financial crisis midpoint estimate of 5%. The bank attributed most of

[1] See Reserve Bank Governor Lowe, *The economic outlook and monetary policy*, 21 May 2019.
[2] The market is currently pricing in a roughly 75% probability of a third 25bp rate cut to 0.75% by June 2020.
[3] See Reserve Bank Governor Lowe, *What is normal?*, 5 December 2012.
[4] See Rachael McCririck and Daniel Rees, *The neutral interest rate*, Reserve Bank of Australia Bulletin, September 2017.

the fall in the neutral interest rate to a decline in the economy's potential growth rate and an increase in risk aversion of households and firms, as reflected in wider spreads between the cash rate and market interest rates.

Chart 2: The RBA has lowered its estimate of the neutral cash rate



Source: Reserve Bank of Australia, Melbourne Institute, National Australia Bank

We think the RBA could trim its estimate of the neutral cash rate to 3-3.25%

We suspect that the Reserve Bank may soon revise its estimate of the neutral cash rate, along with the NAIRU and potential growth, with Assistant Governor (Economic) Ellis speaking on "Watching the invisibles" on 12 June.

It seems possible to us that the Reserve Bank will lower its estimate of the neutral real cash rate, perhaps to 0.5-0.75%, which would imply a midpoint for the neutral nominal cash rate of 3-3.25%. This reflects the bank's decision to recently lower its estimate of potential growth from 2.75% to 2.5%, plus a further roughly 20bp increase in the spread between the discounted variable mortgage rate and the cash rate over the past couple of years.[5]

If we are right and the Reserve Bank trims its estimate of the neutral cash rate, then this would mean that the bank was providing less stimulus to the economy than it previously thought and it would need to cut rates further.

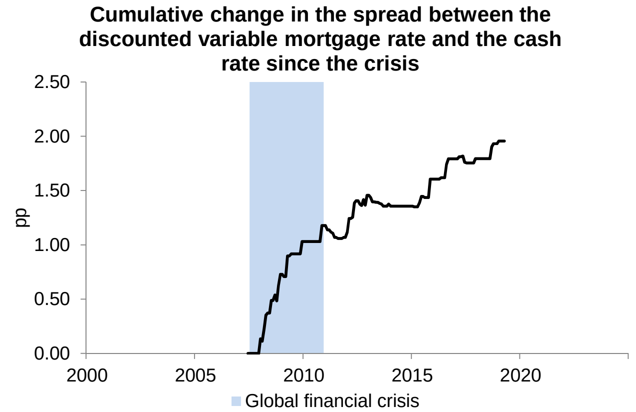
We are unsure whether the Reserve Bank will make an allowance for tighter credit conditions that have acted as de facto interest rate rises

In estimating the neutral cash rate, we are uncertain as to whether the Reserve Bank will factor in the effect of tighter credit conditions. Tighter credit conditions have reflected: (1) the tightening of assessment and verification of borrower income and expenses; (2) the discouragement of high loan-to-valuation ratio loans; and (3) ensuring that minimum interest rate buffers were applied to new and existing loans.[6] Additional steps have also been taken to constrain investor and interest-only loans.

Measuring credit conditions is difficult and the Reserve Bank has an informational advantage over the market in that is has access to the confidential *APRA Credit Conditions Survey*, which measures lending standards for households and firms. Nonetheless, some sense of the tightening of is reflected in the bank's calculation that the borrowing capacity of households has fallen by 20% over recent years.

The Reserve Bank has tended to downplay this reduction, noting only 15% of borrowers take out the maximum loan on offer. We are more circumspect, believing that these changes affect the marginal borrowers, which matter to the housing market.

Chart 3: The spread between mortgage rates and the cash rate has widened further



Note: The mortgage rate is for owner-occupiers.
Source: Reserve Bank of Australia, National Australia Bank

APRA plans to partly unwind some of the tightening in credit

That said, there is likely to soon be relief on one aspect of the tightening in credit conditions given the Australian Prudential Regulation Authority plans to partly relax the serviceability requirements on residential mortgages later this month.

At present, a lender calculates a borrower's ability to service a loan using an interest rate that is the maximum of either: (1) a floor of *at least* 7%; or (2) a buffer of *at least* 2pp above the actual loan interest rate. APRA plans to scrap the 7% floor and has proposed that a lender calculates the ability to service a loan using a buffer of 2.5pp above the loan interest rate, "ignoring any introductory or honeymoon rates offered at origination of the loan".[7]

Other things being equal, this change should increase the borrowing capacity of new borrowers and enhance the transmission of any rate cuts (the discounted variable mortgage for owner-occupiers is currently 4.68%, but the average interest rate paid on principal and interest loans is 4.28%, with a large cluster of borrowers paying around 4%).

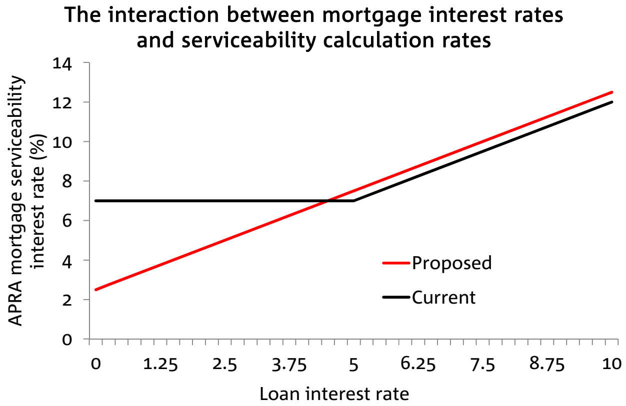
Governor Lowe, who oversees macroprudential policy in his role as chair of the Council of Financial Regulators, viewed this change as "complementary to a monetary easing if that's what takes place", but not a substitute given that lower interest rates have a broader

[5] See Australian Markets Weekly, *The RBA confronts lower potential growth*, 18 February 2019.
[6] See Reserve Bank Deputy Governor Debelle, *Assessing the effects of housing lending policy measures*, 15 November 2018/

[7] See Chairman Wayne Byers, *Consultation on revisions to prudential practice guide APG 223 residential mortgage lending*, Australian Prudential Regulation Authority, 21 May 2019.

transmission through the economy via the exchange rate and the cash flow of all borrowers.[8]

Chart 4: Scrapping the 7% floor in mortgage serviceability calculations will enhance the effectiveness of RBA rate cuts



Source: Australian Prudential Regulation Authority, National Australia Bank

The RBA's current view on the effective lower bound is less clear, but the bank has previously put it at about 1%

Unlike the neutral cash rate, we are less sure about the effective lower bound. Regardless of its exact level, history shows that the current cash rate of 1.5% would quickly be exhausted in a typical easing cycle. That is, we calculate that the median reduction in the nominal cash rate in past easing cycles is 313bp, while the median reduction in the real cash rate is 268bp.

Table 1: RBA easing cycles in terms of the nominal cash rate

Easing cycles target cash rate	Peak (%)	Trough (%)	Change (bp)	Duration (months)
1. Recessions				
1981-83	16.69	8.89	-780	20
1990-93	18.00	4.75	-1,325	43
Average/median			*-1,053*	*32*
2. Other easing cycles				
1986	18.00	14.88	-313	6
1987	16.25	10.50	-575	10
1996-97	7.50	5.00	-250	13
1998	5.00	4.75	-25	1
2001	6.25	4.25	-200	11
2008-09	7.25	3.00	-425	8
2011-16	4.75	1.50	-325	58
Average			*-302*	*15*
Median			*-313*	*10*

Note: The 90 day bank bill was used as the policy rate for the early 1980s recession.
Source: Dungey and Hayward; Reserve Bank for Australia, National Australia Bank

[8] See Reserve Bank Governor Lowe, *Transcript of the Q&A session*, 21 May 2019.

Table 2: RBA easing cycles in terms of the real cash rate

Easing cycles real cash rate	Peak (%)	Trough (%)	Change (bp)
1. Recessions			
1981-83	6.86	1.07	-578
1990-93	11.76	2.33	-943
Average/median			*-761*
2. Other easing cycles			
1986	9.44	5.67	-376
1987	5.67	3.00	-268
1996-97	4.47	3.09	-138
1998	2.99	3.04	5
2001	3.83	0.81	-302
2008-09	2.81	-0.57	-337
2011-16	2.27	-0.15	-241
Average			*-237*
Median			*-268*

Note: The 90 day bank bill was used as the policy rate for the early 1980s recession. The real cash rate = nominal cash rate – annual trimmed mean inflation. The annual underlying CPI inflation rate was used prior to 1982.
Source: Australian Bureau of Statistics, Dungey and Hayward; Reserve Bank for Australia, National Australia Bank

For its part, the Reserve Bank hasn't discussed the bound in detail, although now-Governor Lowe suggested it was about 1% in 2012 and now-Assistant Governor (Financial Markets) Kent repeated the 1% rate in an interview in 2016 that discussed unconventional policies.[9]

- In 2012, Lowe said that the conclusion he drew from international experience was that "once you get below some certain level of very low interest rates [the] incremental benefit from lowering them further is quite small", suggesting the lower bound was "somewhere around 1%, plus or minus a bit". At that point, "other options of unconventional policy become more viable".
- In 2016, the interview with Kent said that the Reserve Bank's study of unconventional policy options had been spurred by Lowe indicating that "lowering the [cash] rate on its own would lose effectiveness as it approaches 1%".

More recently, the bank has discussed the low level of interest rates without putting a number on the effective lower bound. For example, the May Board minutes noted that the "effect on the economy of lower interest rates could be expected to be smaller than in the past, given the high level of household debt and the adjustment that was occurring in housing markets", adding that lower rates would still have an impact through "a depreciation of the exchange rate and by reducing required interest payments on borrowing, freeing up cash for other expenditure".

This suggests to us that for the time being, Governor Lowe's estimate of 1%, plus or minus a bit, probably still holds for the bank.

Unconventional policies would come to the fore if the economy was materially weaker than expected

In a scenario where the economy was materially weaker and a more usual easing cycle was required, quantitative easing would come to the fore as any estimate of the effective lower bound would be breached.

[9] See Reserve Bank Governor Lowe, *Transcript of question & answer session*, 5 December 2012 and Michael Heath, *RBA says it favours a mixture of stimulus in extreme scenario*, Bloomberg, 15 July 2016.

Relying on Assistant Governor (Financial Markets) Kent's interview in 2016, the bank's analysis of the international experience with unconventional policy concluded that:

- Policies should be tailored to a country's circumstances, including the nature of their financial system.
- Different unconventional policies could be used at the same time, where a combination may be more effective than adopting a single policy.
- Unconventional policies provide a measure of stimulus, albeit with diminishing returns.

Based on this, the Reserve Bank argued that the key was to use unconventional tools in unison, with a coherent narrative and a credible target that was not overly ambitious.

In a situation where the Reserve Bank had to adopt unorthodox polices, the bank said this would not be done on a pre-emptive basis, but rather after the emergence of some symptoms of economic stress. That said, the bank noted that it could start expanding the balance sheet at the same time it was cutting the cash rate rather than waiting to hit the effective lower bound.

The unconventional options studied by the Reserve Bank were:

- **Balance-sheet expansion.** This would aim to reduce borrowing costs by buying assets such as government bonds or through long-term repos, potentially including asset-backed securities and mortgage securities. In Australia's case, there could be an additional boost via the exchange rate from crowding out foreign investors.
  - The bank would seek government insurance against potential losses if it bought corporate bonds given non-trivial risks are involved.
- **Negative interest rates.** This is not an attractive option because a negative cash rate poses problems for banks and money market funds.
- **Foreign exchange intervention.** Expanding the bank's balance sheet by buying foreign assets would be regarded internationally as targeting the exchange rate. However, some form of intervention wouldn't be ruled out in an extreme scenario.
  - The bank would again seek government insurance against potential losses if it bought foreign assets.
- **Direct financing of government spending.** Experience in emerging economies shows that "helicopter money" can generate inflation, but the policy has drawbacks and can prove addictive for politicians. In any case, it can be approximated by the central bank expanding its balance sheet by buying bonds as the government delivers fiscal stimulus.

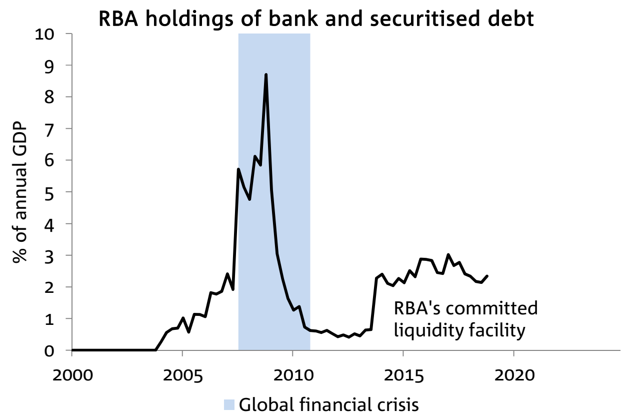
Australia has already had experience with unconventional policy

Although overlooked by the market, the Reserve Bank's perspective on unconventional policy would also likely be influenced by Australia's experience with such measures during the global financial crisis. These policies were temporarily implemented by the Reserve Bank and Commonwealth government and were mainly aimed at reducing acute stress in funding markets for banks and state governments.

- **The Reserve Bank greatly expanded its balance sheet.** This was done by significantly increasing the use of repurchase agreements for bank and securitised debt. The Bureau of Statistics treats these transactions as if the bank had bought the underlying securities.
- **The Commonwealth government expanded its balance sheet.** The Commonwealth offered insurance for bank and state government debt for a fee, effectively wrapping the debt in its AAA credit rating (the Bureau of Statistics also treats these as if the government had bought the debt). The Treasurer also directed the Australian Office of Financial Management to buy residential mortgage-backed securities to support competition for lending.

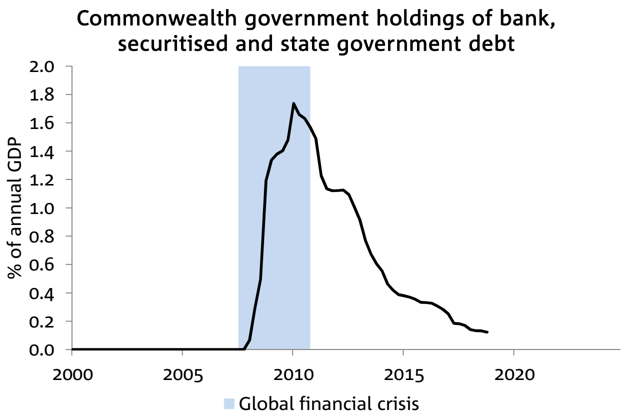
These measures proved successful and we suspect that this experience would point the Reserve Bank towards again expanding its balance sheet if the economy turned out much worse than expected.

Chart 5: The RBA significantly expanded its balance sheet during the global financial crisis via repos



Note: Covers bank bills, bonds and one name paper.
Source: Australian Bureau of Statistics, National Australia Bank

Chart 6: The Commonwealth government expanded its balance sheet by buying RMBS and insuring bank and state government bonds



Note: Covers bank bills, bonds and one name paper.
Source: Australian Bureau of Statistics, National Australia Bank

At a low level of interest rates, the RBA might make more use of forward guidance

Regardless of whether the downside scenario that could trigger unconventional policy is realised, at the current low level of interest rates the other step that the Reserve Bank could take would be to offer more explicit forward guidance on policy, something that was advocated in the external review of the banks' forecasts and analysis.[10]

The Reserve Bank has a long tradition of using the media to shape financial market near-term expectations of policy, but has traditionally been wary of formal guidance, noting in 2016 that it can create problems if the central bank doesn't have a strong, consistent narrative for policy.

Nonetheless, the bank has experimented with guidance, most recently employing scenarios in its commentary in order to convey the possible direction of policy, as well as using market expectations of the cash rate in preparing its economic forecasts (although the exchange rate is kept unchanged).

This likely reflects a change in approach by Governor Lowe, although we suspect that the Reserve Bank is some way off offering its own view on interest rates, along the lines of the Federal Reserve Bank's Summary of Economic Projections or the Reserve Bank of New Zealand's cash rate projections.

Further work on the effective lower bound and unconventional policy

Although our central case is for growth and inflation to underperform relative to the Reserve Bank's forecasts, supporting our expectation of policy easing, we plan to undertake more work on the effective lower bound and unconventional policy to get a better understanding of how the bank might react to an even worse outcome for the economy.

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[10] See Adrian Pagan and David Wilcox, *External review – Reserve Bank of Australia economic group forecasts and analysis*, 2016.

CALENDAR OF ECONOMIC RELEASES

Country	Economic Indicator	Period	Forecast	Consensus	Actual	Previous	GMT	AEST
Monday, 1 July 2019								
GE	Markit/BME Germany Manufacturing PMI	May F		44.3		44.3	7.55	17.55
EC	Markit Eurozone Manufacturing PMI	May F		47.7		47.7	8.00	18.00
UK	Markit UK PMI Manufacturing SA	May		52.2		53.1	8.30	18.30
US	Fed's Quarles Discusses Libor Transition						13.10	23.10
CA	Markit Canada Manufacturing PMI	May				49.7	13.30	23.30
US	Markit US Manufacturing PMI	May F		50.6		50.6	13.45	23.45
US	ISM Manufacturing	May		53		52.8	14.00	0.00
US	Construction Spending MoM	Apr		0.4		-0.9	14.00	0.00
US	Fed's Barkin Speaks to Charlotte Economics Club						16.40	2.40
US	Fed's Bullard Speaks in Chicago						17.25	3.25
Tuesday, 4 June 2019								
NZ	Overseas Trade Indexes	1Q	1			-3	22.45	8.45
AU	Net Exports of GDP / Current Account Balance	1Q	0.2/-3.5	0.2/-3		-0.2/-7	1.30	11.30
AU	Retail Sales MoM	Apr	-0.3	0.2		0.3	1.30	11.30
AU	RBA Cash Rate Target	4 June	1.25	1.25		1.5	4.30	14.30
EC	Unemployment Rate	Apr		7.7		7.7	9.00	19.00
EC	CPI Core YoY / Estimate YoY	May A		0.9/1.3		1.3/1.7	9.00	19.00
AU	RBA Governor Lowe Gives Speech in Sydney						9.30	19.30
US	Fed's Williams Speaks at Conference on Reforming Bank Culture						12.30	22.30
US	Powell Discusses Policy Strategy at Chicago Fed Conference						13.55	23.55
US	Durable Goods Orders	Apr F				-2.1	14.00	0.00
US	Fed's Brainard Moderates Panel at Chicago Fed Conference						19.45	5.45
Wednesday, 5 June 2019								
NZ	Dairy Auction Avg. Winning Price MT	4 June				3414	early am	
AU	AiG Perf of Services Index	May				46.5	22.30	8.30
AU	GDP SA QoQ / YoY	1Q	0.4/1.7	0.4/1.8		0.2/2.3	1.30	11.30
AU	RBA's Heath Speaks in Perth						1.30	11.30
CH	Caixin China PMI Services	May		54		54.5	1.45	11.45
EC	Markit Eurozone Composite PMI	May F		51.6		51.6	8.00	18.00
UK	BOE's Dave Ramsden Speaks in London						8.00	18.00
UK	Markit/CIPS UK Services PMI	May		50.6/51		50.4/50.9	8.30	18.30
EC	PPI MoM / YoY	Apr		0.2/3.1		-0.1/2.9	9.00	19.00
EC	Retail Sales MoM / YoY	Apr		-0.5/1.5		0/1.9	9.00	19.00
US	MBA Mortgage Applications	31 May				-3.3	11.00	21.00
US	ADP Employment Change	May		187.5		275	12.15	22.15
US	Fed's Clarida Gives Welcoming Remarks at Fed Conference						13.45	23.45
US	Markit US Services PMI	May F		50.9		50.9	13.45	23.45
US	Fed's Bowman Testifies at Senate Banking Panel Nomination						14.00	0.00
US	ISM Non-Manufacturing Index	May		55.5		55.5	14.00	0.00
US	Fed's Bostic Speaks on Housing Panel in Atlanta						15.00	1.00
NZ	QV House Prices YoY	May				2.7	17.00	3.00
US	U.S. Federal Reserve Releases Beige Book						18.00	4.00
Thursday, 6 June 2019								
NZ	N.Z. Government 10-Month Financial Statements						22.00	8.00
NZ	ANZ Commodity Price	May	0.5			2.5	1.00	11.00
AU	Trade Balance	Apr	5400	5000		4949	1.30	11.30
GE	Factory Orders MoM / YoY	Apr		0/-5.9		0.6/-6	6.00	16.00
JN	BOJ Kuroda speaks in Tokyo at 2019 IIF Spring Membership Meeti						8.25	18.25
EC	GDP SA QoQ / YoY	1Q F		0.4/1.2		0.4/1.2	9.00	19.00
UK	BOE Governor Mark Carney Speaks in Tokyo						9.00	19.00
EC	ECB Main Refinancing Rate / Marginal Lending Facility	6 June		0/0.25		0/0.25	11.45	21.45
EC	ECB Deposit Facility Rate	6 June	-0.4	-0.4		-0.4	11.45	21.45
EC	ECB's Draghi Speaks After Policy Decision in Vilnius						12.30	22.30
US	Initial Jobless Claims	37043		215		215	12.30	22.30
US	Trade Balance	Apr		-50.55		-50	12.30	22.30
US	Fed's Kaplan Speaks at Boston College						12.40	22.40
US	Fed's Williams Discusses International Economics						17.00	3.00
Friday, 7 June 2019								
CH and HK, public holiday - Dragon Boat Festival							**7 June**	
CH	Foreign Reserves	May		3090		3094.95	7 June	
AU	AiG Perf of Construction Index	May				42.6	22.30	8.30
AU	Home Loans MoM	Apr	-0.5	0		-2.8	1.30	11.30
US	Fed's Daly Speaks to University Students in Singapore						4.00	14.00
GE	Industrial Production SA MoM / YoY	Apr		-0.5/-0.4		0.5/-0.9	6.00	16.00
CA	Net Change in Employment / Unemployment rate	May		-5/5.7		106.5/5.7	12.30	22.30
CA	Hourly Wage Rate Permanent Employees YoY	May		2.4		2.6	12.30	22.30
US	Change in Nonfarm Payrolls / Unemployment rate	May		185/3.6		263/3.6	12.30	22.30
US	Average Hourly Earnings MoM / YoY	May		0.3/3.2		0.2/3.2	12.30	22.30
CA	Capacity Utilization Rate	1Q		81		81.7	12.30	22.30
US	Wholesale Inventories MoM	Apr F		0.7		0.7	14.00	0.00
Upcoming Central Bank Interest Rate Announcements								
Australia, RBA		4-Jun	1.25%	1.5%		1.5%		
Europe, ECB		6-Jun	-0.4%	-0.4%		-0.4%		
US, Federal Reserve		19-Jun	2.25-2.5%	2.25-2.5%		2.25-2.5%		
UK, BOE		20-Jun	0.75%	0.75%		0.75%		
Japan, BoJ		20-Jun	-0.1%	-0.1%		-0.1%		
New Zealand, RBNZ		26-Jun	1.50%	1.5%		1.5%		
Canada, BoC		10-Jul	1.75%	1.75%		1.75%		

GMT: Greenwich Mean Time; AEST: Australian Eastern Standard Time

FORECASTS

Economic Forecasts

	Annual % change				Quarterly % change															
					2018				2019				2020				2021			
Australia Forecasts	**2018**	**2019**	**2020**	**2021**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Household Consumption	2.6	1.7	2.4	2.3	0.4	0.9	0.3	0.4	0.4	0.3	0.5	0.6	0.7	0.6	0.6	0.5	0.6	0.7	0.6	0.5
Underlying Business Investment	1.4	1.1	4.4	3.5	0.9	-1.1	-1.8	0.4	0.3	1.0	1.3	1.4	0.6	1.6	0.5	1.5	0.6	1.1	0.4	0.6
Residential Construction	4.4	-8.4	-7.7	-1.4	3.4	2.2	0.5	-3.4	-2.7	-2.9	-2.9	-2.0	-1.9	-1.6	-1.8	-0.8	-0.2	0.5	0.2	0.8
Underlying Public Spending	5.1	5.1	4.4	4.4	1.6	0.6	2.5	1.4	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.1
Net Exports (a)	0.7	0.4	-0.3	-0.4	0.5	0.1	0.2	-0.2	0.2	0.2	0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Inventories (a)	0.1	0.0	0.1	0.0	0.0	0.1	-0.3	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Domestic Demand (q/q %)	--	--	--	--	0.9	0.7	0.5	0.3	0.3	0.3	0.5	0.7	0.6	0.6	0.6	0.7	0.7	0.8	0.6	0.7
Dom Demand (y/y %)	3.0	1.6	2.4	2.7	3.4	3.3	2.9	2.5	1.9	1.5	1.4	1.8	2.1	2.4	2.5	2.5	2.6	2.7	2.8	2.8
Real GDP (q/q %)	--	--	--	--	1.1	0.8	0.3	0.2	0.4	0.6	0.6	0.6	0.5	0.6	0.4	0.6	0.6	0.7	0.5	0.6
Real GDP (y/y %)	2.8	1.7	2.3	2.3	3.1	3.1	2.7	2.3	1.7	1.4	1.7	2.2	2.4	2.3	2.2	2.2	2.2	2.4	2.4	2.4
CPI headline (q/q %)	--	--	--	--	0.4	0.4	0.4	0.5	0.1	0.7	0.4	0.6	0.4	0.4	0.5	0.7	0.5	0.5	0.6	0.7
CPI headline (y/y %)	1.9	1.7	1.9	2.2	1.9	2.1	1.9	1.8	1.4	1.8	1.8	1.8	2.1	1.7	1.8	2.0	2.1	2.2	2.3	2.3
CPI underlying (q/q %)	--	--	--	--	0.5	0.5	0.4	0.4	0.2	0.5	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5
CPI underlying (y/y %)	1.8	1.4	1.6	1.9	1.9	1.8	1.8	1.8	1.4	1.4	1.4	1.3	1.5	1.5	1.6	1.7	1.9	1.9	2.0	2.0
Private wages (q/q %)	--	--	--	--	0.5	0.6	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Private wages (y/y %)	2.1	2.5	2.7	2.8	1.9	2.1	2.1	2.3	2.4	2.4	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.8	2.8	2.8
Unemployment Rate (%)	5.3	5.0	5.2	5.4	5.5	5.6	5.1	5.0	4.8	5.0	5.1	5.1	5.2	5.2	5.3	5.3	5.3	5.4	5.4	5.4
Terms of trade	1.8	4.9	-3.3	-1.5	3.1	-1.1	0.9	3.1	4.8	-1.2	-2.2	-1.3	-0.4	-0.9	0.4	-0.2	-0.2	-0.8	-0.8	-0.5
Current Account (% GDP)	-2.1	-0.5	-1.5	-2.1	-2.3	-2.5	-2.3	-1.5	-0.2	-0.2	-0.7	-1.1	-1.3	-1.6	-1.5	-1.7	-1.8	-2.1	-2.3	-2.4

Source: NAB Group Economics; (a) Contributions to GDP growth

Exchange Rate Forecasts

	3-Jun	Sep-19	Dec-19	Mar-20	Jun-20	Sep-20
Majors						
AUD/USD	0.6943	0.73	0.75	0.76	0.77	0.78
NZD/USD	0.6543	0.69	0.70	0.70	0.71	0.72
USD/JPY	108.36	110	108	107	105	104
EUR/USD	1.1169	1.14	1.16	1.18	1.20	1.22
GBP/USD	1.2632	1.35	1.38	1.40	1.43	1.45
USD/CNY	6.9054	6.68	6.60	6.50	6.45	6.45
USD/CAD	1.3503	1.33	1.27	1.25	1.24	1.23
USD/CHF	0.9988	0.99	0.97	0.98	0.95	0.94
Australian Cross Rates						
AUD/NZD	1.0611	1.06	1.07	1.09	1.08	1.08
AUD/JPY	75.2	80	81	81	81	81
AUD/EUR	0.6216	0.64	0.65	0.64	0.64	0.64
AUD/GBP	0.5496	0.54	0.54	0.54	0.54	0.54
AUD/CNY	4.7944	4.88	4.95	4.94	4.97	5.03
AUD/CAD	0.9375	0.97	0.95	0.95	0.95	0.96
AUD/CHF	0.6935	0.72	0.73	0.74	0.73	0.73

Interest Rate Forecasts

	3-Jun	Sep-19	Dec-19	Mar-20	Jun-20	Sep-20
Australian Rates						
RBA cash rate	1.50	1.00	1.00	1.00	1.00	1.00
3 month bill rate	1.40	1.10	1.20	1.20	1.20	1.20
3 Year Swap Rate	1.22	1.25	1.20	1.30	1.40	1.50
10 Year Swap Rate	1.78	2.03	2.03	2.20	2.25	2.40
Offshore Policy Rates						
US Fed funds	2.50	2.50	2.50	2.50	2.50	2.50
ECB deposit rate	-0.40	-0.40	-0.40	-0.20	0.00	0.15
BoE repo rate	0.75	0.75	1.00	1.00	1.25	1.25
BoJ excess reserves rate	-0.10	-0.10	-0.10	0.00	0.00	0.00
RBNZ OCR	1.50	1.50	1.25	1.25	1.25	1.25
China 1yr lending rate	4.35	4.35	4.35	4.35	4.35	4.35
China Reserve Ratio	13.5	12.00	12.00	12.00	12.00	12.00
10-year Bond Yields						
Australia	1.51	1.85	1.85	2.00	2.00	2.10
United States	2.13	2.65	2.70	2.80	2.80	2.90
New Zealand	1.71	3.30	3.45	3.55	3.65	3.70

Sources: NAB Global Markets Research; Bloomberg; ABS

Global GDP

	2018	2019	2020	2021
Australia	2.8	1.7	2.3	2.3
United States	2.9	2.5	1.8	1.8
Eurozone	1.8	1.2	1.4	1.5
United Kingdom	1.4	1.5	1.5	1.6
Japan	0.8	0.2	0.5	1.0
China	6.6	6.3	6.0	5.8
India	7.1	7.1	7.2	7.1
New Zealand	2.8	2.4	2.6	2.5
World	3.6	3.3	3.4	3.5

Commodity prices ($US)

	3-Jun	Sep-19	Dec-19	Mar-20	Jun-20
Brent oil	61.3	68	70	70	75
Gold	1310	1300	1310	1350	1370
Iron ore	99	79	76	72	68
Hard coking coal*	n.a.	178	170	165	160
Thermal coal	n.a.	85	90	93	90
Copper	5806	6400	6300	6225	6150
Aus LNG**	n.a.	12	12	12	12

** FOB quarterly contract prices (thermal coal is JFY contract)*

*** Implied Australian LNG export prices*

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