

# AUSTRALIAN MARKETS WEEKLY

## Large and persistent RBA forecast misses on growth



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### Analysis – Reserve Bank forecasts consistently overestimate growth

- The Reserve Bank anticipates a strong rebound in GDP growth, with annual growth accelerating from 1.4% currently to 3.1% by end-2021. Although it is natural to forecast a recovery after an economic slowdown, there is much uncertainty about the pace and degree of recovery, particularly given the Reserve Bank had earlier thought growth would be 3.5% by now, marking one of the largest misses in decades.
- The Reserve Bank has persistently overestimated growth, with our testing suggesting that this is a structural problem rather than reflecting the inherent “noisiness” of GDP growth. Overestimation has also become the norm since the global financial crisis at both a one- and two-year forecast horizon.
- In our view, the problems with the Reserve Bank’s forecasts suggests that the bank is still grappling with the decline in potential growth, which is surprising considering that this structural shift has been discussed for years. In the meantime, this leads us to downplay the Reserve Bank’s growth outlook given the bias in the estimates.

### The week ahead – AU RBA on hold, Q3 GDP; RBNZ bank policy; US ISM and payrolls

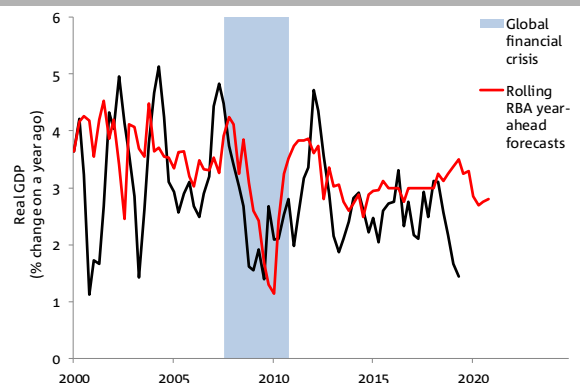
- The RBA is expected to keep the cash rate steady at 0.75% on Tuesday, while retaining an easing bias (market: 0.75%). GDP is expected to be weak on Wednesday with a gain of 0.3%, which would put annual growth at 1.5% (market: 0.5%/1.7%). For the GDP partials, NAB forecasts small contributions from net exports and public demand. NAB forecasts retail sales rose 0.4% in October (market: 0.3%). In NZ, the RBNZ bank-capital policy announcement is Thursday and a trio of Q3 GDP partials is also due.
- In the US, the November manufacturing ISM is expected to pick up to 49.5 given improvements in regional surveys, while the non-manufacturing ISM should be little changed at 54.5. The November payrolls report should show faster jobs growth of 190k, with unemployment unchanged at a very low 3.6%. US negotiators are expected to head to Beijing for trade talks. In Europe, the 12 December UK election dominates.

### Key markets over the past week

	Last	% chg week		Last	bp/% chg week
AUD	0.6775	-0.1	RBA cash	0.75	0
AUD/CNY	4.76	-0.1	3y swap	0.74	-4
AUD/JPY	74.3	0.6	ASX 200	6,877	2.2
AUD/EUR	0.615	-0.1	Iron ore	86	-1.8
AUD/NZD	1.051	-0.5	Brent oil	61.2	-3.8

Source: Bloomberg

### Chart of the week: The RBA overestimates growth



## Large and persistent RBA forecast misses on growth

- The Reserve Bank anticipates a strong rebound in GDP growth, with annual growth accelerating from 1.4% currently to 3.1% by end-2021. Although it is natural to forecast a recovery after an economic slowdown, there is much uncertainty about the pace and degree of recovery, particularly given the Reserve Bank had earlier thought growth would be 3.5% by now, marking one of the largest misses in decades.
- The Reserve Bank has persistently overestimated growth, with our testing suggesting that this is a structural problem rather than reflecting the inherent "noisiness" of GDP growth. Overestimation has also become the norm since the global financial crisis at both a one- and two-year forecast horizon.
- In our view, the problems with the Reserve Bank's forecasts suggests that the bank is still grappling with the decline in potential growth, which is surprising considering that this structural shift has been discussed for years. In the meantime, this leads us to downplay the Reserve Bank's growth outlook given the bias in the estimates.

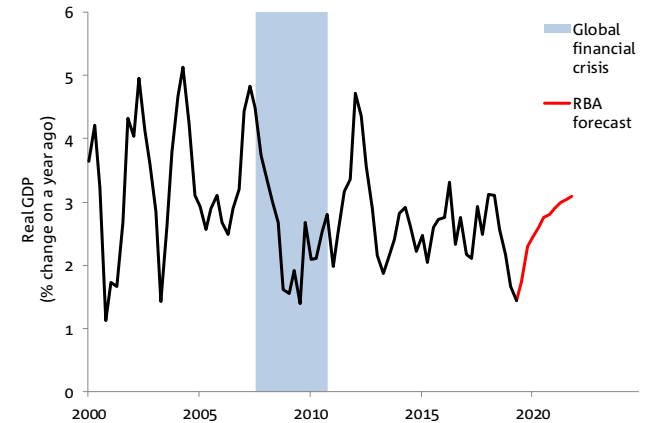
### After a big miss over the past year, the Reserve Bank anticipates a strong rebound in GDP

The Reserve Bank is forecasting that the economy will strongly rebound over the next couple of years, with annual GDP growth expected to accelerate from 1.4% in Q2 2019 to 3.1% in Q4 2021. To place this in perspective, 1.4% matches the low-point for growth during the global financial crisis, while 3.1% growth equals last year's peak and almost equals the multi-year high of 3.3% in 2016.

Although it is natural to forecast a recovery after an economic slowdown, there is much uncertainty about the likely pace and degree of recovery. This uncertainty is amplified by the Reserve Bank's greater-than-usual difficulty in forecasting recent growth. For example, in Q2 2018 the bank forecast growth would accelerate to 3.5% in Q2 2019 compared with the initial estimated outcome of 1.4%. This 2.1pp forecast miss is more than double the size of the bank's average *absolute* year-ahead forecast error of 1.0pp and is one of the largest misses in the past thirty years.<sup>1</sup>

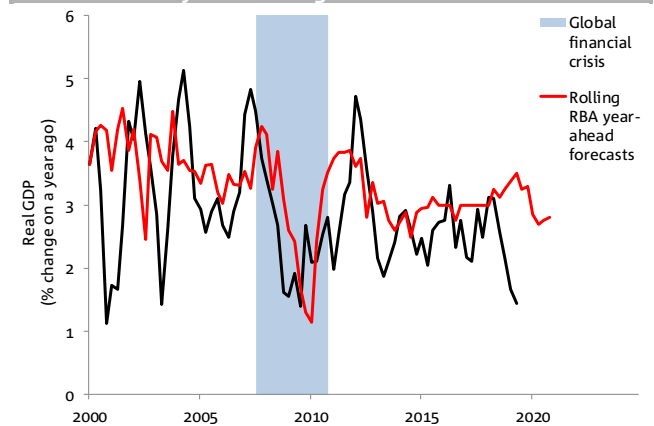
For its part, the Reserve Bank may be downplaying this forecast miss in anticipation of future upward revisions to growth. While there is always a possibility that GDP is revised as more information becomes available, we note that there were no material revisions in the 2018-19 annual national accounts.

Chart 1: The Reserve Bank is forecasting a strong recovery in GDP



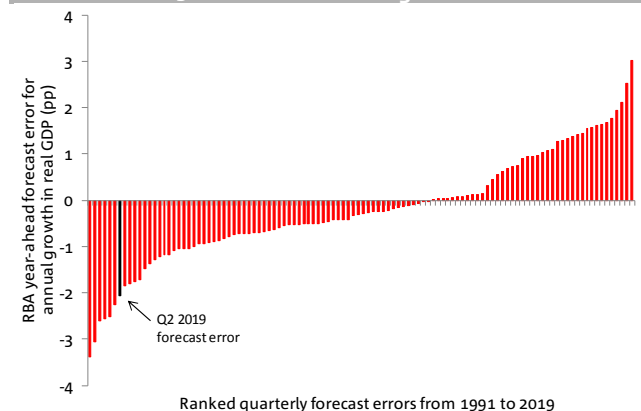
Note: The Reserve Bank forecasts are from the November Statement on Monetary Policy. Source: Australian Bureau of Statistics, Reserve Bank of Australia, National Australia Bank

Chart 2: The Reserve Bank has persistently overestimated year-ahead growth



Source: Australian Bureau of Statistics, Reserve Bank of Australia, Tulip (2012), National Australia Bank

Chart 3: The Reserve Bank's recent year-ahead forecast miss in Q2 2019 was one of the largest on record



Source: Australian Bureau of Statistics, Reserve Bank of Australia, Tulip (2012), National Australia Bank

<sup>1</sup> The average absolute forecast error was calculated from 1991 to 2019.

**The Reserve Bank has consistently overestimated growth over recent years**

Separate to the size of the Reserve Bank’s recent forecast miss, the persistent overestimation of growth points to a more serious problem with the bank’s forecasting approach.

Formally testing to see if the bank’s year-ahead forecast error simply reflects the “noisiness” of growth in GDP, we found that the miss has become statistically significant in the decade to date. This suggests that the bias in the bank’s forecasts is structural in nature and not a reflection of the usual ups and downs of the economy.

**Table 1: Tests suggest that the Reserve Bank’s forecast misses have become structural**

	Bias	p-value
1990s	0.4	0.24
2000s	-0.3	0.17
2010s to date	-0.5	0.01

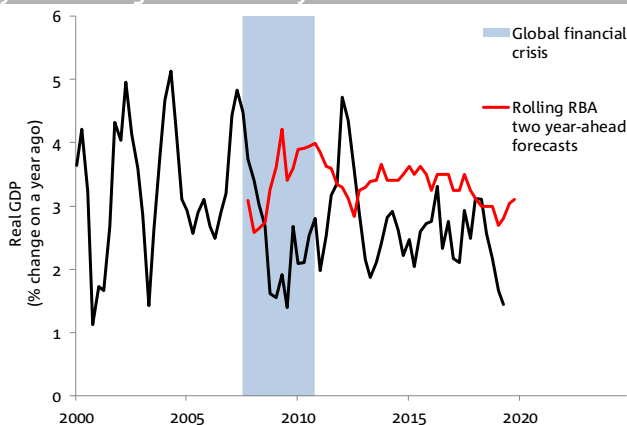
Note: The p-values are for the significance of a regression of the year-ahead forecast error on a constant. They were calculated using robust standard errors.  
Source: Australian Bureau of Statistics, Reserve Bank of Australia, National Australia Bank

Overestimation of growth has also become commonplace, something clearly shown by a comparison of the bank’s forecasts before and after the global financial crisis.

- In the ten years prior to the crisis, the Reserve Bank’s year-ahead forecasts overstated growth 55% of the time.
- Since the crisis, overestimation has become the norm, with the Reserve Bank overstating year-ahead growth 76% of the time.

The bias becomes overwhelming when the forecast horizon is extended from one to two years. The size of the average absolute forecast error since the crisis increases from 0.7pp to 0.9pp, with the Reserve Bank overestimating growth 94% of the time.

**Chart 4: The Reserve Bank almost always overestimates year-ahead growth in two years’ time**



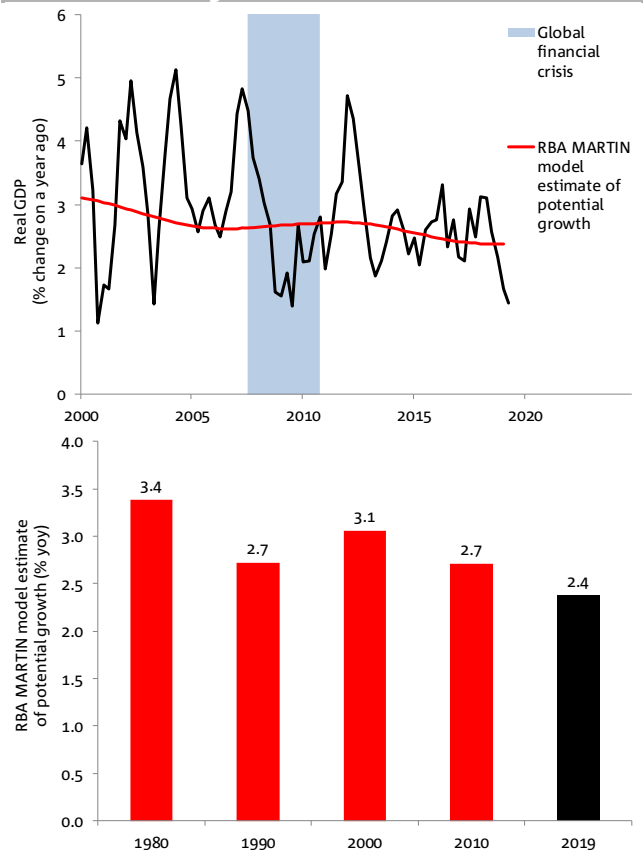
Source: Australian Bureau of Statistics, Reserve Bank of Australia, National Australia Bank

**The Reserve Bank’s forecasts do not adequately incorporate lower potential growth**

The problems in the Reserve Bank’s forecasts of growth – the size of the misses, the statistical significance of the errors, and the persistent overestimation – suggest that the Reserve Bank is still grappling with structural change in the economy. In particular, it seems that the forecasts do not adequately incorporate the step down in potential growth over the past decade.

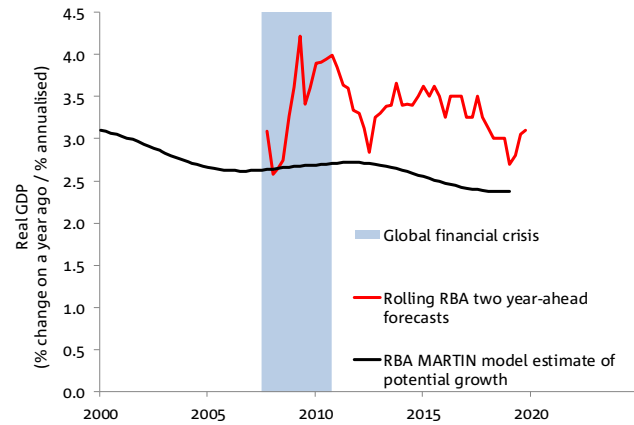
Historically, the Reserve Bank has shied away from publicly discussing potential growth, but bank commentary has acknowledged that potential growth has declined. For example, in 2015 Governor Stevens questioned whether “trend output growth is lower than the 3% or 3¼% we have assumed for many years”, while February 2019 Statement on Monetary Policy noted that “year-ended growth in the economy [of 2.8%] remains a bit above estimates of potential growth”. More recently, though, the Reserve Bank’s MARTIN macroeconomic model has brought precision to the slowdown in potential growth, estimating potential growth has fallen from 2.7% in 2010 to 2.4% in 2019.

**Chart 5: Potential growth has fallen to about 2.5% ...**



Note: The Reserve Bank estimate of potential growth was sourced from the bank’s MARTIN model.  
Source: Reserve Bank of Australia, National Australia Bank

**Chart 6: ... but Reserve Bank forecasts do not adequately incorporate a lower potential growth rate**



Source: Reserve Bank of Australia, National Australia Bank

**All this suggests that the Reserve Bank’s growth forecasts should be downplayed**

Adjusting forecasts to reflect structural change is difficult and the Reserve Bank’s 2012 review of its forecast performance cites the example of how the bank consistently underestimated the strength of the terms of trade during the mining boom.<sup>2</sup>

However, we are surprised that there has not been more focus by the Reserve Bank on the persistent overestimation of growth – at least publicly – particularly when the decline in potential growth has been discussed for many years. In the meantime, all this leads us to downplay the Reserve Bank’s growth outlook given the bias in the estimates.

**Kieran Davies**

<sup>2</sup> See Peter Tulip and Stephanie Wallace, *Estimates of uncertainty around the RBA’s forecasts*, Reserve Bank of Australia Discussion Paper RDP 2012-07, November 2012.

# CALENDAR OF ECONOMIC RELEASES

Country	Economic Indicator	Period	Forecast	Consensus	Actual	Previous	GMT	AEDT
<b>Monday 02 December 2019</b>								
AU	Commodity Index SDR YoY	Nov		--		-4.2	5.30	16.30
GE	Markit/BME Germany Manufacturing PMI	Nov F		43.8		43.8	8.55	19.55
EC	Markit Eurozone Manufacturing PMI	Nov F		46.6		46.6	9.00	20.00
US	Markit US Manufacturing PMI	Nov F		52.2		52.2	14.45	1.45
EC	ECB's Lagarde testifies at European Parliament						14.00	1.00
US	Construction Spending MoM	Oct		0.4		0.5	15.00	2.00
US	ISM Manufacturing	Nov		49.5		48.3	15.00	2.00
<b>Tuesday 03 December 2019</b>								
AU	BoP Current Account Balance	3Q		6		6	0.30	11.30
AU	Net Exports of GDP	3Q		0.1		0.6	0.30	11.30
AU	RBA Cash Rate Target	Dec 3		0.75		0.75	3.30	14.30
<b>Wednesday 04 December 2019</b>								
NZ	Dairy Auction Avg. Winning Price MT	Dec 3		--		3481	early am	
NZ	RBNZ's Orr testifies on FSR						21.10	8.10
AU	AiG Perf of Services Index	Nov		--		54.2	21.30	8.30
NZ	ANZ Commodity Price	Nov		--		1.2	0.00	11.00
AU	GDP SA QoQ	3Q	0.3	0.5		0.5	0.30	11.30
AU	GDP YoY	3Q	1.5	1.6		1.4	0.30	11.30
CH	Caixin China PMI Services	Nov		51.3		51.1	1.45	12.45
GE	Markit Germany Services PMI	Nov F		51.3		51.3	8.55	19.55
US	ADP Employment Change	Nov		140		125	13.15	0.15
US	Markit US Services PMI	Nov F		51.6		51.6	14.45	1.45
US	ISM Non-Manufacturing Index	Nov		54.5		54.7	15.00	2.00
CA	Bank of Canada Rate Decision	Dec 4		1.75		1.75	15.00	2.00
<b>Thursday 05 December 2019</b>								
NZ	Building Work Put in Place	Q3	0.5			-1.5	21.45	8.45
NZ	RBNZ Bank-Capital Policy Announced						23.00	10.00
AU	Retail Sales MoM	Oct	0.4	0.3		0.2	0.30	11.30
AU	Trade Balance	Oct	6500	6500		7180	0.30	11.30
EC	GDP SA QoQ / YoY	3Q F		0.2 / 1.2		0.2 / 1.2	10.00	21.00
EC	Retail Sales MoM	Oct		0		0.1	10.00	21.00
US	Trade Balance	Oct		-48.85		-52.5	13.30	0.30
US	Durable Goods Orders	Oct F		--		0.6	15.00	2.00
US	Factory Orders	Oct		0.1		-0.6	15.00	2.00
<b>Friday 06 December 2019</b>								
AU	AiG Perf of Construction Index	Nov		--		43.9	21.30	8.30
GE	Industrial Production SA MoM / YoY	Oct		0.2 / -3.5		-0.6 / -4.3	7.00	18.00
US	Average Hourly Earnings MoM / YoY	Nov		0.3 / 3		0.2 / 3	13.30	0.30
US	Change in Nonfarm Payrolls	Nov		190		128	13.30	0.30
US	Unemployment Rate	Nov		3.6		3.6	13.30	0.30
CA	Net Change in Employment	Nov		--		-1.8	13.30	0.30
CA	Unemployment Rate	Nov		--		5.5	13.30	0.30
CA	Hourly Wage Rate Permanent Employees YoY	Nov		--		4.4	13.30	0.30
US	U. of Mich. Sentiment	Dec P		97		96.8	15.00	2.00
US	Wholesale Inventories MoM	Oct F		0.2		0.2	15.00	2.00
<b>Upcoming Central Bank Interest Rate Announcements</b>								
Australia, RBA		Dec 3	0.75	0.75		0.75		
US, Federal Reserve		Dec 11	1.5/1.75	1.5/1.75		1.5/1.75		
Europe, ECB		Dec 12	-0.50	-0.50		-0.50		
Japan, BoJ		Dec 19	-0.10	-0.10		-0.10		
UK, BOE		Dec 19	0.75	0.75		0.75		
New Zealand, RBNZ		Feb 12	1.00	1.00		1.00		

GMT: Greenwich Mean Time; AEDT: Australian Eastern Daylight Time

# FORECASTS

Economic Forecasts																						
	Annual % change				Quarterly % change																	
					2018				2019				2020				2021					
	2018	2019	2020	2021	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
<b>Australia Forecasts</b>																						
Household Consumption	2.6	1.5	1.9	2.1	0.5	0.8	0.3	0.4	0.3	0.4	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6
Underlying Business Investment	1.2	-2.4	0.0	3.4	0.7	-0.8	-2.1	0.1	-0.2	-0.6	-0.7	-0.9	0.1	0.7	0.9	0.2	1.0	1.0	1.0	1.0	1.1	1.1
Residential Construction	4.8	-8.9	-9.6	0.6	3.3	2.8	0.1	-2.8	-2.2	-4.4	-3.1	-3.1	-2.9	-1.7	-1.5	-0.2	0.6	0.8	1.0	0.8	0.8	0.8
Underlying Public Spending	4.3	4.2	3.8	3.5	1.4	-0.1	2.1	0.8	1.1	1.4	0.4	0.8	1.1	1.1	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8
Net Exports (a)	0.8	1.4	-0.1	-0.2	0.6	0.0	0.4	-0.2	0.4	0.6	0.2	0.1	0.1	0.0	-0.1	0.0	-0.1	-0.1	-0.1	-0.1	0.0	0.0
Inventories (a)	0.1	-0.4	0.1	0.1	0.0	0.2	-0.3	0.2	-0.1	-0.5	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Domestic Demand (q/q %)	-	-	-	-	0.9	0.5	0.4	0.2	0.1	0.3	0.1	0.3	0.4	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7
Dom Demand (y/y %)	2.8	0.9	1.7	2.7	3.5	3.3	2.5	2.0	1.2	1.0	0.7	0.8	1.1	1.4	1.9	2.2	2.5	2.6	2.8	2.9	2.9	2.9
Real GDP (q/q %)	-	-	-	-	1.0	0.7	0.3	0.1	0.5	0.5	0.3	0.5	0.5	0.6	0.6	0.6	0.7	0.6	0.6	0.7	0.6	0.7
Real GDP (y/y %)	2.7	1.6	2.1	2.5	3.1	3.1	2.6	2.2	1.7	1.4	1.5	1.9	1.9	2.0	2.3	2.4	2.5	2.5	2.6	2.6	2.6	2.6
CPI headline (q/q %)	-	-	-	-	0.4	0.4	0.4	0.5	0.0	0.6	0.5	0.6	0.4	0.4	0.5	0.6	0.5	0.5	0.6	0.7	0.6	0.7
CPI headline (y/y %)	1.9	1.6	2.0	2.2	1.9	2.1	1.9	1.8	1.3	1.6	1.7	1.7	2.1	1.9	1.9	1.9	2.0	2.2	2.3	2.4	2.4	2.4
CPI underlying (q/q %)	-	-	-	-	0.5	0.5	0.4	0.4	0.2	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	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	1.5	1.4	1.4	1.4	1.6	1.6	1.6	1.6	1.8	1.9	2.0	2.1	2.1	2.1
Private wages (q/q %)	-	-	-	-	0.5	0.6	0.5	0.6	0.5	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
Private wages (y/y %)	2.1	2.3	2.5	2.8	1.9	2.1	2.1	2.3	2.4	2.3	2.3	2.3	2.4	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.8	2.8
Unemployment Rate (%)	5.3	5.2	5.3	5.4	5.5	5.6	5.1	5.0	5.1	5.2	5.3	5.3	5.3	5.4	5.4	5.4	5.4	5.4	5.4	5.5	5.5	5.5
Terms of trade	2.0	6.1	-6.3	-1.8	3.3	-1.3	1.1	3.0	3.1	1.5	0.9	-4.6	-1.9	-1.9	0.0	-1.9	-0.3	0.2	0.2	0.2	0.6	0.6
Current Account (% GDP)	-2.1	0.8	-0.2	-0.8	-2.2	-2.7	-2.2	-1.4	-0.2	1.2	1.7	0.7	0.3	-0.1	-0.3	-0.7	-0.8	-0.8	-0.9	-0.8	-0.8	-0.8

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

## Exchange Rate Forecasts

	2-Dec	Mar-20	Jun-20	Sep-20	Dec-20	Mar-21
<b>Majors</b>						
AUD/USD	0.678	0.68	0.69	0.70	0.71	0.71
NZD/USD	0.64	0.65	0.65	0.66	0.67	0.67
USD/JPY	109.6	109	109	108	110	108
EUR/USD	1.10	1.14	1.16	1.16	1.17	1.17
GBP/USD	1.29	1.35	1.35	1.35	1.33	1.36
USD/CNY	7.03	7.05	7.00	6.90	6.85	6.85
USD/CAD	1.33	1.31	1.30	1.30	1.31	1.32
USD/CHF	1.00	0.98	0.96	0.96	0.96	0.96

## Australian Cross Rates

	2-Dec	Mar-20	Jun-20	Sep-20	Dec-20	Mar-21
AUD/NZD	1.05	1.05	1.06	1.06	1.06	1.06
AUD/JPY	74.3	74	75	76	78	77
AUD/EUR	0.61	0.60	0.59	0.60	0.61	0.61
AUD/GBP	0.52	0.50	0.51	0.52	0.53	0.52
AUD/CNY	4.76	4.79	4.83	4.83	4.86	4.86
AUD/CAD	0.90	0.89	0.90	0.91	0.93	0.94
AUD/CHF	0.68	0.67	0.66	0.67	0.68	0.68

## Interest Rate Forecasts

	2-Dec	Mar-20	Jun-20	Sep-20	Dec-20	Mar-21
<b>Australian Rates</b>						
RBA cash rate	0.75	0.50	0.50	0.50	0.50	0.50
3 month bill rate	0.89	0.60	0.60	0.60	0.60	0.60
3 Year Swap Rate	0.74	0.90	0.95	0.95	1.00	1.00
10 Year Swap Rate	1.26	1.25	1.30	1.35	1.45	1.50
<b>Offshore Policy Rates</b>						
US Fed funds	1.75	1.75	1.75	1.75	1.75	na
ECB deposit rate	-0.50	-0.50	-0.50	-0.50	-0.50	na
BoE repo rate	0.75	0.75	0.75	0.75	1.00	na
BoJ excess reserves rate	-0.10	-0.20	-0.30	-0.30	-0.30	na
RBNZ OCR	1.00	0.50	0.50	0.50	0.50	na
China 1yr lending rate	4.35	4.10	4.10	4.10	4.10	na
China Reserve Ratio	13.0	12.00	12.00	12.00	12.00	na
<b>10-year Bond Yields</b>						
Australia	1.09	1.10	1.10	1.10	1.20	1.25
United States	1.81	1.70	1.70	1.70	1.80	1.90
New Zealand	1.35	0.95	1.05	1.10	1.30	1.45

Sources: NAB Global Markets Research; Bloomberg; ABS

## Global GDP

	2018	2019	2020	2021
Australia	2.7	1.6	2.1	2.5
United States	2.9	2.3	1.7	1.8
Eurozone	1.9	1.2	1.0	1.4
United Kingdom	1.4	1.3	1.0	1.5
Japan	0.8	1.0	0.2	0.9
China	6.6	6.1	5.9	5.8
India	6.8	5.7	6.8	7.1
New Zealand	2.8	2.2	2.2	2.0
World	3.6	3.1	3.2	3.5

## Commodity prices (\$US)

	2-Dec	Mar-20	Jun-20	Sep-20	Dec-20	Mar-21
Brent oil	61.2	70	75	75	75	na
Gold	1460	1483	1518	1547	1572	na
Iron ore	na	72	68	71	69	na
Hard coking coal*	142	165	160	155	152	na
Thermal coal	68	93	90	88	90	na
Copper	5843	6225	6150	6125	6100	na
Aus LNG**	10	12	12	12	12	na

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

\*\* Implied Australian LNG export prices

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