

# AUSTRALIAN MARKETS WEEKLY



## The impact of the exchange rate on GDP

### In this issue

The impact of the exchange rate on GDP	2
Calendar of economic releases	6
Forecasts	8

### Analysis – The impact of the exchange rate on GDP

- In a 2016 analysis, the Reserve Bank calculated that, all else equal, a 10% drop in the real exchange rate boosted exports by about 3% and reduced imports by just under 4% over a two-year period. On current trade shares, these effects would boost real GDP by about 1½%.
- Updating that work, our analysis suggests that the effect on GDP of a 10% fall in the real exchange rate is larger when the impact on trade is estimated over recent history. We estimate that the lower exchange rate lifts exports by about 3.5% and reduces imports by about 7% over a two-year period, where imports have become more sensitive to the currency over time. Using current trade shares, this would boost GDP by about 2¼%.
- The results reinforce our view that a lower exchange rate would be helpful for the Reserve Bank as it seeks to return inflation to the 2-3% target band. Unfortunately, the bank is unlikely to see any relief on this front as our FX strategists forecast an appreciation in the nominal exchange rate over the coming year, mainly against the US dollar (this reflects further US dollar weakness, commodity price resilience and current market pricing for interest rates). This suggests that lower rates and additional fiscal stimulus will be needed instead to support the economy.

### The week ahead – Australian Q2 CPI and the US FOMC meeting the major focus

- Core inflation is expected to remain subdued in Q2. We forecast the RBA's preferred measure of core inflation – the trimmed mean CPI – to increase by 0.4% in the quarter, which would see annual inflation ease to 1.5%, matching the multi-decade low reached in 2016. Headline inflation should also increase by 0.4%, up 1.4% over the year, with the risk it might be marginally higher than our estimate. If our forecasts prove correct, the Reserve Bank will be under pressure to downgrade its near-term outlook for inflation in the August Statement on Monetary Policy. Retail trade should improve in June, up 0.5%, although the quarter should be weak, with a marginal increase of 0.1% in volume terms. Note that next month's retail trade report for July should be boosted by the government's personal income tax cuts.
- Internationally, the FOMC is expected to cut the funds rate by 25bp to 2-2.25% on Wednesday and signal a preparedness to do more. Data-wise, the US manufacturing ISM is due Thursday, with payrolls on Friday. China PMIs are also due Wednesday.

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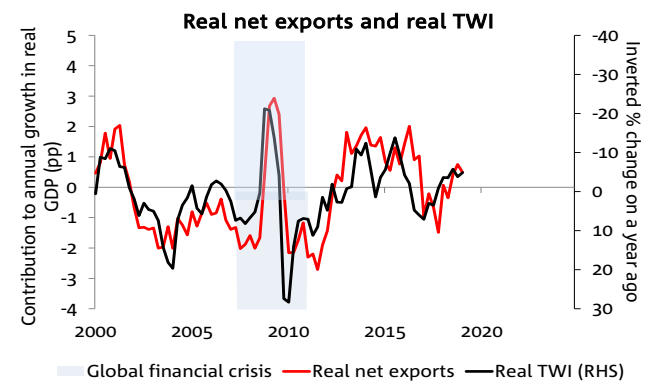
[Rate Strategists](#)

### Key markets over the past week

	Last	% chg week		Last	bp/% chg week
AUD	0.6905	-1.9	RBA cash	1.00	0
AUD/CNY	4.76	-1.8	3y swap	0.86	-14
AUD/JPY	75.0	-1.2	ASX 200	6,822	2.0
AUD/EUR	0.620	-1.2	Iron ore	115	0.7
AUD/NZD	1.042	0.1	WTI oil	56.1	-0.2

Source: Bloomberg

### Chart of the week: Net exports and the real exchange rate



## The impact of the exchange rate on GDP

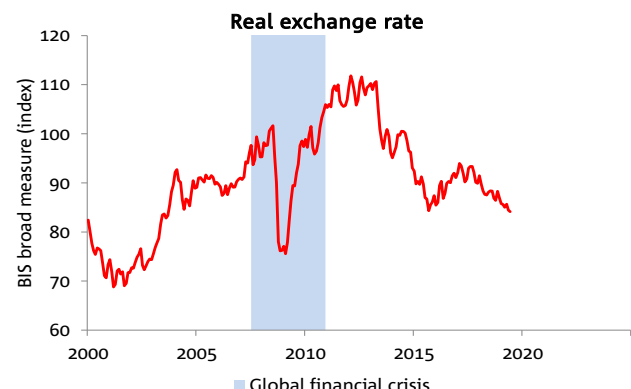
- In a 2016 analysis, the Reserve Bank calculated that, all else equal, a 10% drop in the real exchange rate boosted exports by about 3% and reduced imports by just under 4% over a two-year period. On current trade shares, these effects would boost real GDP by about 1½%.
- Updating that work, our analysis suggests that the effect on GDP of a 10% fall in the real exchange rate is larger when the impact on trade is estimated over recent history. We estimate that the lower exchange rate lifts exports by about 3.5% and reduces imports by about 7% over a two-year period, where imports have become more sensitive to the currency over time. Using current trade shares, this would boost GDP by about 2¼%.
- The results reinforce our view that a lower exchange rate would be helpful for the Reserve Bank as it seeks to return inflation to the 2-3% target band. Unfortunately, the bank is unlikely to see any relief on this front as our FX strategists forecast an appreciation in the nominal exchange rate over the coming year, mainly against the US dollar (this reflects further US dollar weakness, commodity price resilience and current market pricing for interest rates). This suggests that lower rates and additional fiscal stimulus will be needed instead to support the economy.

### The real exchange rate is another way lower interest rates can boost growth

In last week’s weekly, we examined the impact of lower interest rates on household cash flows.<sup>1</sup> That work suggested that the two recent rate cuts should be reflected in a roughly 0.3-0.4pp boost to household income.

Another way lower interest rates can boost growth is via the exchange rate. The real exchange rate has fallen 10% from its 2017 high and is currently at its lowest level since the global financial crisis.

Chart 1: The real exchange rate has dropped 10% from its 2017 peak



## A 10% drop in the real exchange rate boosts export volumes by about 3.5%

To gauge the impact of the lower exchange rate on growth, we estimated the relationship between the currency and trade, updating work done a few years ago by Reserve Bank economists.<sup>2</sup>

Export volumes were modelled as a function of:

- **Foreign demand**, as proxied by export-weighted real GDP in Australia’s major export markets;
- **Competitiveness**, as measured by the real trade-weighted exchange rate; and
- **Dummy variables**, which captured three shocks, namely: (1) the 2000 Olympics in Sydney; (2) the 2003 outbreak of SARS in Asia; and (3) the 9/11 terrorist attack in the United States.

The model allowed the exchange rate and demand to have short- and long-run effects on exports and was estimated in log terms using quarterly data over the period from 2000 to 2019.

Chart 2: Exports are broadly related to foreign demand ...

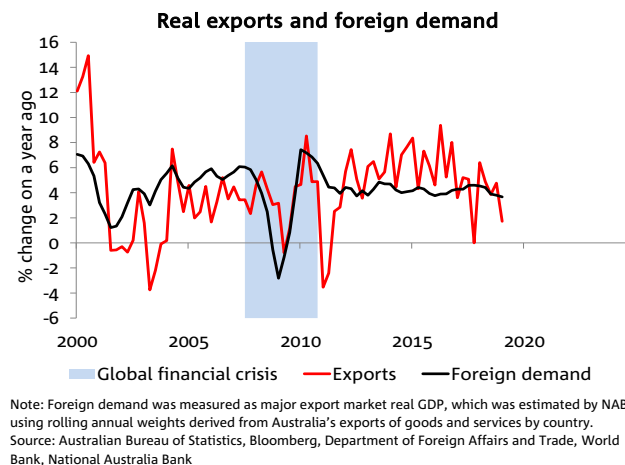
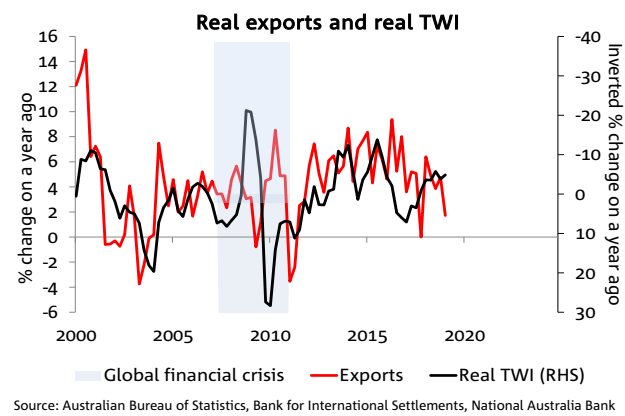


Chart 3: ... and the real exchange rate



<sup>1</sup> See Kieran Davies, *The impact of lower interest rates on household cash flows*, Australian Markets Weekly, 22 July 2019.

<sup>2</sup> See Duke Cole and Samuel Nightingale, *Sensitivity of Australian trade to the exchange rate*, Reserve Bank of Australia Bulletin, September quarter 2016.

The estimation results show that the model explains about 30% of the variation in the change in exports, suggesting that over the long run:

- A 1% increase in foreign demand boosts exports by about 1%; and
- A 10% reduction in the real exchange rate boosts exports by about 3.5%.

**Table 1: Estimation results for export volumes**

(change in export volumes)	Coefficient	P-value
Model results:		
Level of exports(t-1)	-0.28	0.00
Level of foreign demand(t-1)	0.29	0.00
Level of the real exchange rate(t-1)	-0.10	0.00
Change in real exchange rate(t)	-0.10	0.06
Change in foreign demand(t-1)	0.86	0.02
Dummy for Olympics	0.04	0.00
Dummy for SARS	-0.03	0.02
R-bar-squared	0.29	
Implied long-run relationship		
Foreign demand	1.05	
Real exchange rate	-0.36	
Speed of adjustment	-3.6	

Note: Estimated in log terms using quarterly data from Q1 2000 to Q1 2019. Source: Australian Bureau of Statistics, Bank for International Settlements, Bloomberg, Department of Foreign Affairs and Trade, World Bank, National Australia Bank

These results are similar to the work undertaken by the Reserve Bank in 2016. That analysis was undertaken over a much longer period from 1983 to 2015, where bank economists estimated that over the long run:

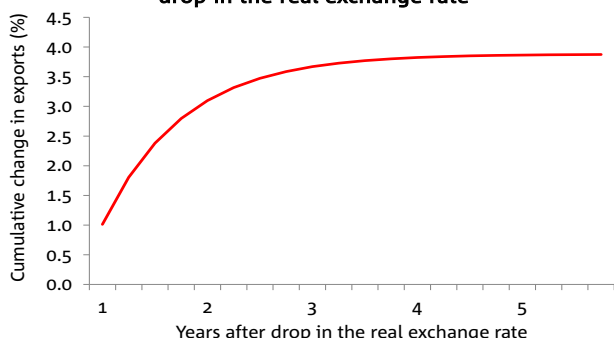
- A 1% increase in foreign demand boosts exports by about 1.5%; and
- A 10% reduction in the real exchange rate reduces exports by about 4%.

**Most of the effect of lower exchange rate on exports occurs by the end of the first year**

Focusing on the impact of a lower exchange rate on exports, most of the effect is felt by the end of the first year (about 70% of the estimated long-run impact), with almost the full long-run effect felt by the end of the second year (more than 90%).

**Chart 4: Almost all the effect of the exchange rate on exports is felt after two years**

The estimated response of exports to a 10% drop in the real exchange rate



Note: The assumed 10% drop in the real exchange rate occurs in the first quarter and is permanent. Source: Australian Bureau of Statistics, National Australia Bank

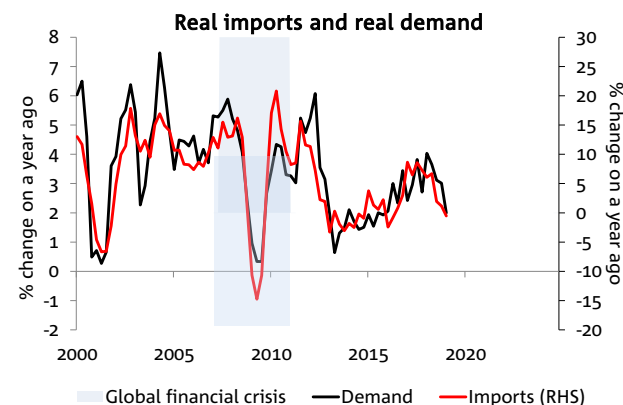
**A 10% drop in the real exchange rate reduces import volumes by about 7%**

Similarly, imports were modelled as a function of:

- Demand, as measured by real domestic demand less ownership transfer costs plus exports; and
- The exchange rate, as measured by the real trade-weighted exchange rate.

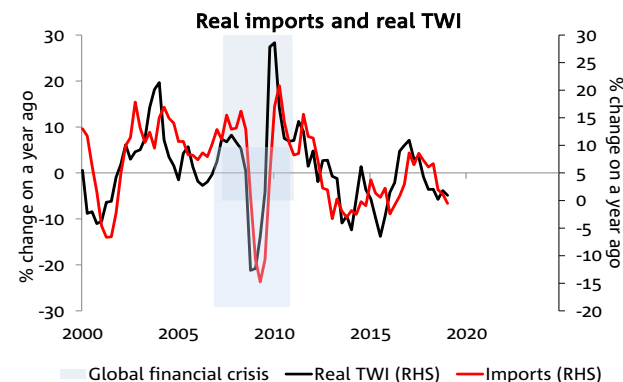
Like the specification for exports, the model allowed the exchange rate and demand to have short- and long-run effects on imports. It was also estimated in log terms using quarterly data over the period from 2000 to 2019.

**Chart 5: Imports are closely related to demand ...**



Note: Demand equals real domestic demand minus ownership transfer costs plus exports. Source: Australian Bureau of Statistics, National Australia Bank

**Chart 6: ... and the real exchange rate**



Source: Australian Bureau of Statistics, Bank for International Settlements, National Australia Bank

The estimation results show that the model explains about 60% of the variation in the change in imports, suggesting that over the long run:

- A 1% increase in demand boosts exports by about 1.5%; and
- A 10% reduction in the real exchange rate reduces exports by about 7%.

**Table 2: Estimation results for import volumes**

(change in import volumes)	Coefficient	P-value
Model results:		
Constant	-2.77	0.00
Level of imports(t-1)	-0.34	0.00
Level of demand(t-1)	0.51	0.00
Level of the real exchange rate(t-1)	0.25	0.00
Change in real exchange rate(t)	1.41	0.00
Change in demand(t-1)	0.28	0.00
R-bar-squared	0.62	
Implied long-run relationship		
Demand	1.49	
Real exchange rate	0.73	
Speed of adjustment	-2.9	

Note: Estimated in log terms using quarterly data from Q1 2000 to Q1 2019.  
 Source: Australian Bureau of Statistics, Bank for International Settlements, National Australia Bank

**Imports appear to have become more sensitive to the real exchange rate over time**

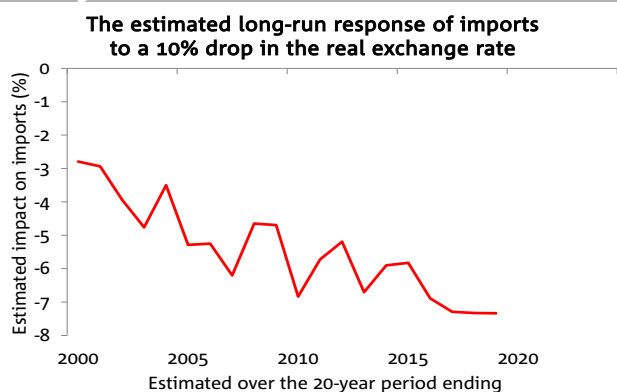
These results differed from the earlier analysis by the Reserve Bank, where bank economists estimated that over the long run:

- A 1% increase in demand raises imports by 1.7%;
- A 10% reduction in the real exchange rate reduces imports by about 3%.

Trying to reconcile the result for the real exchange rate, we estimated the model with a start date of 1983 to match the Reserve Bank’s analysis. This produced results in line with the earlier work, where over this extended period a 1% increase in demand raised imports by 1.8%, with a 10% drop in the real exchange rate reducing imports by 3%.

Exploring the issue further, we examined the impact of the exchange rate on exports over time by estimating the exports model over a rolling 20-year window from 1980 onwards. This exercise suggests that the estimated impact of a 10% drop in the exchange rate on imports has increased over time, rising from about 3% to around 7%. It is unclear why this is the case, but it may reflect the estimation period spanning the recent mining boom. Regardless, it suggests that the real exchange rate has a greater effect on growth than in the 1980s and 1990s.

**Chart 7: Imports have become more sensitive to the real exchange rate over time**

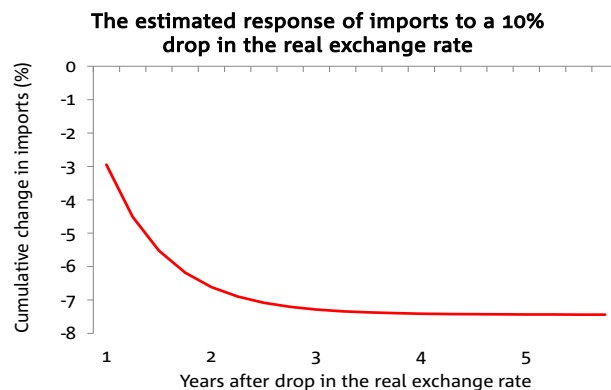


Source: Australian Bureau of Statistics, Bank for International Settlements, National Australia Bank

**The bulk of the exchange rate’s effect on imports is felt in the first two years**

Like exports, most of the estimated impact of a lower exchange rate on imports occurs by the end of the first year (about 80% of the long-run effect), with almost the whole long-run effect felt by the end of the second year (about 90%).

**Chart 8: The exchange rate has almost all its effect on imports by the end of two years**



Note: The assumed 10% drop in the real exchange rate occurs in the first quarter and is permanent.  
 Source: Australian Bureau of Statistics, National Australia Bank

**Our work suggests that the real exchange rate has more of an impact on growth than earlier RBA analysis**

Comparing our updated analysis with earlier work by the Reserve Bank suggests that the exchange rate likely has a moderately larger influence on growth.

- In its analysis, the Reserve Bank calculated that, all else equal, a 10% drop in the real exchange rate boosted exports by about 3% and reduced imports by just under 4% over a two-year period. On current trade shares, these effects would boost real GDP by about 1½%.
- Our work suggests that the effect on GDP of a 10% fall in the real exchange rate is larger when the impact on trade is estimated over recent history. We estimate that the lower exchange rate lifts exports by about 3.5% and reduces imports by about 7% over a two-year period. Using current trade shares, this would boost GDP by about 2¼%.

We are mindful that there is uncertainty about these estimated impacts, which reflects:

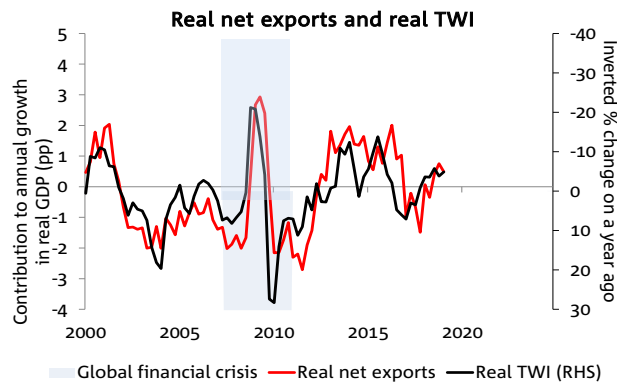
- The difficulty in modelling exports. Our model explained about 30% of the variation in the change in exports, while the Reserve Bank’s model explained about 20% of the variation over a longer period.
- The fact that all things are unlikely to be equal if the real exchange rate were to drop sharply. For example, a large fall in the lower real exchange rate could occur in the context of unexpectedly weaker demand in China, which is Australia’s largest export market.

Nonetheless, the results reinforce our view that a lower exchange rate would be helpful for the Reserve Bank as it seeks to boost demand, reduce unemployment and return inflation to the 2-3% target band.

Unfortunately, the Reserve Bank is unlikely see any relief on this front as our FX strategists forecast an *appreciation* in the nominal exchange rate over the coming year, driven by the currency rising from 69 US cents to 75 US cents by mid 2020 (this expected appreciation is predicated on further weakness in the US dollar, current market pricing for the cash rate, and resilience in commodity prices).

This outlook for the exchange rate suggests that lower interest rates and additional fiscal stimulus will be needed instead to support the economy.

Chart 9: Net exports and the real exchange rate



Source: Australian Bureau of Statistics, Bank for International Settlements, National Australia Bank

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# CALENDAR OF ECONOMIC RELEASES

Country	Economic Indicator	Period	Forecast	Consensus	Actual	Previous	GMT	AEST
<b>Monday, 29 July 2019</b>								
GE	Retail Sales MoM	Jun		0.5		-0.6		
GE	Retail Sales NSA YoY	Jun		0.6		4		
<b>Tuesday, 30 July 2019</b>								
JN	BOJ Policy Balance Rate	Jul 30	-0.1	-0.1		-0.1	14.00	0.00
NZ	Building Permits MoM	Jun		--		13.2	22.45	8.45
JN	Jobless Rate	Jun		2.4		2.4	23.30	9.30
JN	Industrial Production MoM	Jun P		-1.7		2	23.50	9.50
JN	Industrial Production YoY	Jun P		-2		-2.1	23.50	9.50
AU	Building Approvals MoM	Jun	-1.0	0.2		0.7	1.30	11.30
AU	Building Approvals YoY	Jun		-24.3		-19.6	1.30	11.30
EC	Consumer Confidence	Jul F		-6.6		-6.6	9.00	19.00
GE	CPI MoM	Jul P		0.3		0.3	12.00	22.00
GE	CPI YoY	Jul P		1.5		1.6	12.00	22.00
US	PCE Core Deflator MoM	Jun		0.2		0.2	12.30	22.30
US	PCE Core Deflator YoY	Jun		1.7		1.6	12.30	22.30
<b>Wednesday, 31 July 2019</b>								
US	Conf. Board Consumer Confidence	Jul		125		121.5	14.00	0.00
NZ	ANZ Business Confidence	Jul		--		-38.1	1.00	11.00
CH	Manufacturing PMI	Jul		49.6		49.4	1.00	11.00
CH	Non-manufacturing PMI	Jul		54		54.2	1.00	11.00
AU	CPI QoQ	2Q	0.4	0.5		0	1.30	11.30
AU	CPI YoY	2Q	1.4	1.5		1.3	1.30	11.30
AU	CPI Trimmed Mean QoQ	2Q	0.4	0.4		0.3	1.30	11.30
AU	CPI Trimmed Mean YoY	2Q	1.5	1.5		1.6	1.30	11.30
AU	CPI Weighted Median QoQ	2Q	0.4	0.4		0.1	1.30	11.30
AU	CPI Weighted Median YoY	2Q	1.2	1.2		1.2	1.30	11.30
AU	Private Sector Credit MoM	Jun	0.3	0.3		0.2	1.30	11.30
AU	Private Sector Credit YoY	Jun		3.5		3.6	1.30	11.30
GE	Unemployment Change (000's)	Jul		2		-1	7.55	17.55
GE	Unemployment Claims Rate SA	Jul		5		5	7.55	17.55
EC	Unemployment Rate	Jun		7.5		7.5	9.00	19.00
EC	GDP SA QoQ	2Q A		0.2		0.4	9.00	19.00
EC	GDP SA YoY	2Q A		1		1.2	9.00	19.00
EC	CPI Core YoY	Jul A		1		1.1	9.00	19.00
EC	CPI Estimate YoY	Jul		1.1		1.2	9.00	19.00
US	ADP Employment Change	Jul		150		102	12.15	22.15
CA	GDP MoM	May		0.1		0.3	12.30	22.30
CA	GDP YoY	May		1.3		1.5	12.30	22.30
<b>Thursday, 01 August 2019</b>								
US	FOMC Rate Decision (Upper Bound)	Jul 31	2.25	2.25		2.5	18.00	4.00
US	FOMC Rate Decision (Lower Bound)	Jul 31	2	2		2.25	18.00	4.00
US	Interest Rate on Excess Reserves	Aug 1		2.1		2.35	18:30	4:30
US	US Fed Powell press conference						22.30	8.30
AU	AiG Perf of Mfg Index	Jul		--		49.4	22.30	8.30
AU	CoreLogic House Px MoM	Jul		--		-0.1	0.00	10.00
JN	Jibun Bank Japan PMI Mfg	Jul F		--		49.6	0.30	10.30
AU	Import Price Index QoQ	2Q		1.5		-0.5	1.30	11.30
AU	Export Price Index QoQ	2Q		2.8		4.5	1.30	11.30
CH	Caixin China PMI Mfg	Jul		49.5		49.4	1.45	11.45
AU	Commodity Index SDR YoY	Jul		--		13	6.30	16.30
GE	Markit/BME Germany Manufacturing PMI	Jul F		43.1		43.1	7.55	17.55
EC	Markit Eurozone Manufacturing PMI	Jul F		46.4		46.4	8.00	18.00
UK	Markit UK PMI Manufacturing SA	Jul		47.7		48	8.30	18.30
UK	Bank of England Bank Rate	Aug 1	0.75	0.75		0.75	11.00	21.00
UK	BOE Asset Purchase Target	Aug		435		435	11.00	21.00
CA	Markit Canada Manufacturing PMI	Jul		--		49.2	13.30	23.30
US	Markit US Manufacturing PMI	Jul F		--		50	13.45	23.45

Friday, 02 August 2019							
US	ISM Manufacturing	Jul	52	51.7	14.00	0.00	
US	Construction Spending MoM	Jun	0.3	-0.8	14.00	0.00	
NZ	ANZ Consumer Confidence Index	Jul	--	122.6	22.00	8.00	
AU	PPI QoQ	2Q	--	0.4	1.30	11.30	
AU	PPI YoY	2Q	--	1.9	1.30	11.30	
AU	Retail Sales MoM	Jun	0.5	0.3	0.1	1.30	11.30
AU	Retail Sales Ex Inflation QoQ	2Q	0.1	0.3	-0.1	1.30	11.30
EC	Retail Sales MoM	Jun	0.2	-0.3	9.00	19.00	
EC	Retail Sales YoY	Jun	1.3	1.3	9.00	19.00	
US	Change in Nonfarm Payrolls	Jul	169	224	12.30	22.30	
US	Trade Balance	Jun	-54.6	-55.5	12.30	22.30	
US	Unemployment Rate	Jul	3.7	3.7	12.30	22.30	
US	Average Hourly Earnings MoM	Jul	0.2	0.2	12.30	22.30	
US	Average Hourly Earnings YoY	Jul	3.1	3.1	12.30	22.30	
Saturday, 03 August 2019							
US	Durable Goods Orders	Jun F	--	2	14.00	0.00	
US	U. of Mich. Sentiment	Jul F	98.5	98.4	14.00	0.00	
US	U. of Mich. Expectations	Jul F	--	90.1	14.00	0.00	
US	Factory Orders	Jun	0.8	-0.7	14.00	0.00	
Upcoming Central Bank Interest Rate Announcements							
Japan, BoJ		Jul 30	-0.10	-0.10	-0.10		
Europe, ECB		Sep 12	-0.50	-0.50	-0.40		
US, Federal Reserve		Jul 31	2.25/2	2.25/2	2.5/2.25		
New Zealand, RBNZ		Aug 7	1.25	1.25	1.50		
Australia, RBA		Aug 6	1.00	1.00	1.00		
UK, BOE		Aug 1	0.75	0.75	0.75		

# 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	2.2	2.3	0.4	0.8	0.3	0.4	0.3	0.3	0.4	0.7	0.6	0.5	0.5	0.5	0.6	0.6	0.5	0.6
Underlying Business Investment	0.9	0.9	4.3	3.6	0.6	-1.0	-2.1	0.0	0.6	1.0	0.8	1.8	0.3	1.8	0.4	1.4	0.4	1.0	0.8	1.4
Residential Construction	4.7	-8.2	-8.3	-1.6	4.1	1.7	0.7	-2.9	-2.5	-3.3	-3.0	-2.2	-2.0	-1.8	-1.9	-0.8	-0.2	0.5	0.2	0.8
Underlying Public Spending	5.0	5.4	4.5	4.1	1.4	0.4	2.5	1.6	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.0
Net Exports (a)	0.7	0.6	-0.3	-0.4	0.5	0.2	0.3	-0.2	0.2	0.3	0.1	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Inventories (a)	0.1	-0.2	-0.1	0.0	-0.1	0.2	-0.3	0.2	-0.1	-0.1	-0.1	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Domestic Demand (q/q %)	--	--	--	--	0.9	0.6	0.5	0.4	0.1	0.3	0.4	0.7	0.6	0.7	0.5	0.7	0.6	0.7	0.7	0.8
Dom Demand (y/y %)	2.9	1.4	2.3	2.7	3.4	3.2	2.8	2.4	1.6	1.3	1.2	1.6	2.0	2.4	2.5	2.5	2.5	2.6	2.7	2.8
Real GDP (q/q %)	--	--	--	--	1.0	0.9	0.3	0.2	0.4	0.4	0.4	0.8	0.5	0.6	0.5	0.6	0.5	0.6	0.5	0.7
Real GDP (y/y %)	2.8	1.7	2.3	2.3	3.1	3.1	2.8	2.4	1.8	1.3	1.5	2.1	2.2	2.3	2.4	2.2	2.2	2.3	2.3	2.4
CPI headline (q/q %)	--	--	--	--	0.4	0.4	0.4	0.5	0.1	0.6	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	1.6	1.8	2.2	1.9	2.1	1.9	1.8	1.4	1.7	1.6	1.6	1.9	1.7	1.8	1.9	2.0	2.2	2.3	2.3
CPI underlying (q/q %)	--	--	--	--	0.5	0.5	0.3	0.4	0.2	0.4	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	1.5	1.9	1.9	1.7	1.7	1.7	1.4	1.4	1.4	1.3	1.5	1.4	1.5	1.6	1.8	1.9	2.0	2.0
Private wages (q/q %)	--	--	--	--	0.5	0.6	0.6	0.5	0.5	0.6	0.6	0.6	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	2.2	2.3	2.4	2.3	2.3	2.4	2.5	2.5	2.6	2.6	2.7	2.7	2.8	2.8
Unemployment Rate (%)	5.3	5.2	5.3	5.4	5.5	5.5	5.1	5.0	5.1	5.2	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.4	5.5	5.5
Terms of trade	1.8	2.9	-3.8	-1.5	3.2	-1.2	1.1	2.9	3.1	-1.1	-2.6	-1.4	-0.6	-1.0	0.4	-0.2	-0.2	-0.8	-0.8	-0.5
Current Account (% GDP)	-2.0	-0.9	-1.8	-2.4	-2.2	-2.5	-2.1	-1.3	-0.6	-0.5	-1.1	-1.4	-1.5	-1.8	-1.8	-1.9	-2.0	-2.3	-2.6	-2.8

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

## Exchange Rate Forecasts

	29-Jul	Sep-19	Dec-19	Mar-20	Jun-20	Sep-20
<b>Majors</b>						
AUD/USD	0.691	0.71	0.73	0.74	0.75	0.75
NZD/USD	0.66	0.67	0.68	0.69	0.70	0.70
USD/JPY	108.6	107	108	107	106	105
EUR/USD	1.11	1.12	1.13	1.13	1.13	1.14
GBP/USD	1.24	1.22	1.24	1.24	1.25	1.27
USD/CNY	6.89	6.96	6.95	6.92	6.90	6.85
USD/CAD	1.32	1.33	1.30	1.29	1.27	1.28
USD/CHF	0.99	0.98	0.98	1.02	1.02	1.00

## Australian Cross Rates

AUD/NZD	1.04	1.06	1.07	1.07	1.07	1.07
AUD/JPY	75.0	76	79	79	80	79
AUD/EUR	0.62	0.63	0.65	0.65	0.66	0.66
AUD/GBP	0.56	0.58	0.59	0.60	0.60	0.59
AUD/CNY	4.76	4.94	5.07	5.12	5.18	5.14
AUD/CAD	0.91	0.94	0.95	0.95	0.95	0.96
AUD/CHF	0.69	0.70	0.72	0.75	0.77	0.75

## Interest Rate Forecasts

	29-Jul	Sep-19	Dec-19	Mar-20	Jun-20	Sep-20
<b>Australian Rates</b>						
RBA cash rate	1.00	1.00	0.75	0.75	0.75	0.75
3 month bill rate	1.03	1.10	0.85	0.85	0.85	0.85
3 Year Swap Rate	0.86	0.80	0.80	1.10	1.25	1.40
10 Year Swap Rate	1.42	1.38	1.38	1.53	1.63	1.73
<b>Offshore Policy Rates</b>						
US Fed funds	2.50	2.00	2.00	2.00	2.00	2.00
ECB deposit rate	-0.40	-0.60	-0.60	-0.60	-0.60	-0.60
BoE repo rate	0.75	0.75	0.75	0.75	0.75	0.75
BoJ excess reserves rate	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10
RBNZ OCR	1.50	1.25	1.25	1.25	1.25	1.25
China 1yr lending rate	4.35	4.10	4.10	4.10	4.10	4.10
China Reserve Ratio	13.5	13.00	12.50	12.00	12.00	12.00
<b>10-year Bond Yields</b>						
Australia	1.20	1.20	1.20	1.35	1.45	1.55
United States	2.06	1.90	1.90	2.00	2.10	2.20
New Zealand	1.48	1.60	1.65	1.85	2.00	2.20

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	2.4	1.7	1.7
Eurozone	1.8	1.2	1.3	1.4
United Kingdom	1.4	1.5	1.4	1.5
Japan	0.8	0.7	0.4	0.9
China	6.6	6.3	6.0	5.8
India	7.1	6.7	7.2	7.1
New Zealand	2.8	2.4	2.6	2.5
World	3.6	3.2	3.3	3.5

## Commodity prices (\$US)

	29-Jul	Sep-19	Dec-19	Mar-20	Jun-20
Brent oil	63.3	68	70	70	75
Gold	1421	1334	1382	1393	1398
Iron ore	118	79	76	72	68
Hard coking coal*	183	178	170	165	160
Thermal coal	73	85	90	93	90
Copper	5941	6400	6300	6225	6150
Aus LNG**	10	12	12	12	12

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

\*\* Implied Australian LNG export prices



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