

AUSTRALIAN MARKETS WEEKLY



How bad is the downturn in house prices?

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- Australia:** RBA Deputy Governor Debelle speaks on “The state of the economy” on Wednesday. The speech could prove important as he will have the chance to provide colour on the decision by the RBA to tweak the policy paragraph of its April interest rate announcement (the RBA said, “The Board will continue to monitor developments and set monetary policy to support sustainable growth in the economy and achieve the inflation target over time”). Recent data have been positive, but we interpreted this tweak as a step toward considering reducing interest rates, with the RBA likely to downgrade its outlook in May (we expect the first cut in July, but with the risk of an earlier move). Data-wise, home loan approvals are unlikely to have much influence on the RBA’s view, where we expect a short-lived bounce in February. Housing will feature more heavily in the RBA’s Financial Stability Review on Friday, where we think the RBA will show more concern about the ongoing decline in construction and prices.
- As for politics, the PM sat tight over the weekend, with 18 May now the favoured option for the poll given it is the last date for a traditional house/half-senate election (the Electoral Commission has previously said that a half-senate election must be held by 18 May).
- International:** The US CPI and FOMC Minutes are on Wednesday. Inflation is likely to remain muted, allowing the Fed to be patient. The minutes should provide detail on the Fed’s balance sheet and whether the risks around the Fed’s pencilling in of a hike in 2020 (a rate *cut* is now largely priced by the end of 2019). In Europe, the ECB meets on Wednesday and there have been reports that President Draghi would like to push out forward guidance and discuss a tiered deposit rate for banks.
- Analysis – Falling house prices – how do they compare with history and international experience?**
- Capital city house prices have been falling for over a year now and are now 8% below their 2017 peak, which is unusual considering interest rates and unemployment are both low. Placing this in perspective, it is the largest decline in the post-WW2 period, although it has to be stressed that there was an enormous increase in prices over this time.
- Real house price declines are more common and the 11% decline to date is the fourth-largest decline in the post-WW2 period. While this fall is still large relative to history, it is modest by international experience, where the average decline in real prices in other advanced economies post the global financial crisis was 20%.
- Net housing worth – ie. housing assets less housing debt – drives the trend in household wealth with housing accounting for about half of total wealth. Real net housing worth is 12% lower to date, almost matching the 13% decline seen in the early 1990s recession when unemployment peaked at 11%. Further declines seem likely given tighter credit conditions and we think falling wealth will have a more noticeable effect on consumer spending given the size of the shock to balance sheets and with no offset from weak growth in household income.

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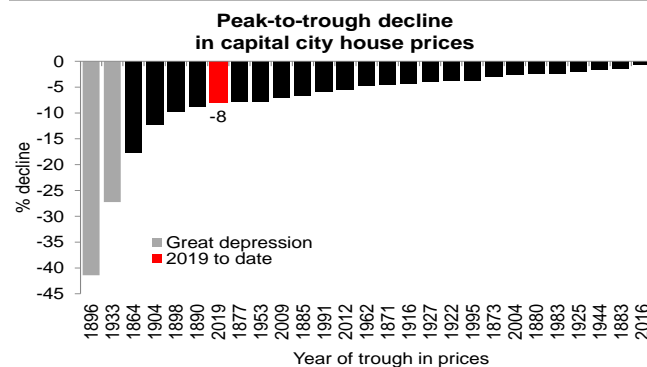
[Ask the Interest Rate Strategists](#)

Key markets over the past week

	Last	% chg week		Last	bp/% chg week
AUD	0.7097	-0.2	RBA cash	1.50	0
AUD/CNY	4.77	-0.2	3y swap	1.53	0
AUD/JPY	79.1	-0.1	ASX 200	6,215	0.0
AUD/EUR	0.633	-0.3	Iron ore	92	7.2
AUD/NZD	1.054	0.9	WTI oil	63.5	3.0

Source: Bloomberg

Chart of the week: A large fall in house prices



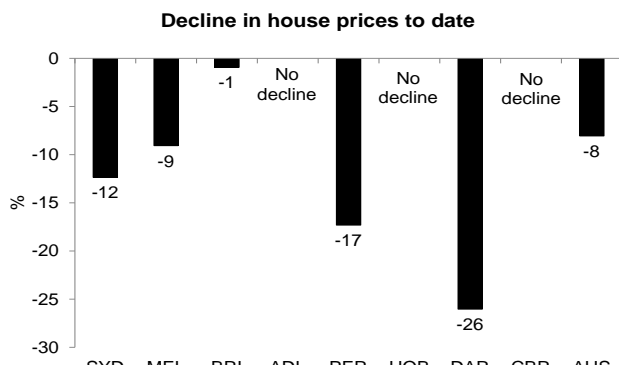
Falling house prices – how do they compare with history and international experience?

House prices have fallen sharply

Capital city house prices have been falling for over a year now and are now 8% below their Q3 2017 peak. This is an unusually large fall considering that the cash rate is unchanged at its lowest level since the 1950s and with the unemployment rate recently falling to its lowest level in eight years. The decline has also been widely spread with prices falling in most capital cities.

Given the scale of the decline, we sought to place it in historical perspective and then compare it with international experience during the global financial crisis. We focused on capital city prices given that the available historical data cover the capitals rather than the states and territories.¹ We then examined the impact of the fall in prices on household wealth given housing is the largest single component of household balance sheets.

Chart 1: House prices have fallen in most capitals



Note: Australia is the weighted capital city index. Calculated using quarterly data. Source: CoreLogic, National Australia Bank

The decline in house prices to date is one of the largest on record, but follows an unprecedented run-up in the post-WW2 period

Analysing episodes of house price rises and declines from the early 1860s to now, we calculated both average and median changes in prices given that there is a very wide range of experience.

- **Price rises:** (1) the average increase in prices was 57% over an average of almost four years; and (2) the median increase in prices was 19% over a median period of almost three years.
- **Price declines:** (1) the average fall was 8% over an average period of almost one and a half years; and (2) the median fall was 5% over a median span of one year.²

Placing this in perspective, the 8% decline in capital city prices to date is the largest fall in the post-WW2 period.

However, it needs to be stressed that the starting point for the current decline was the all-time high reached in

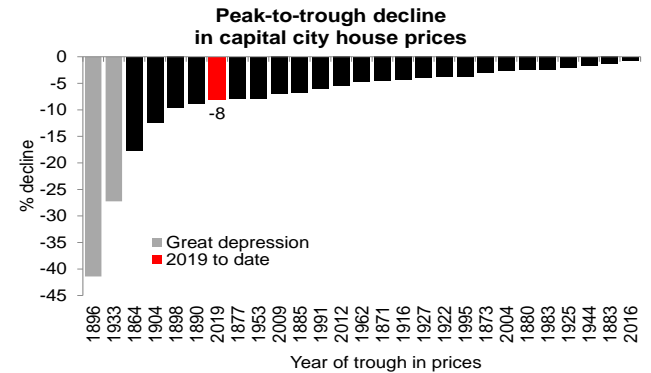
¹ The construction of the historical data used in this note is detailed in the [Appendix](#), pg4.

² We identified episodes of price rises and declines using the Bry-Boschan algorithm developed by Don Harding and former Reserve Bank board-member Adrian Pagan.

2017, where prices had increased by 10% over the previous couple of years.

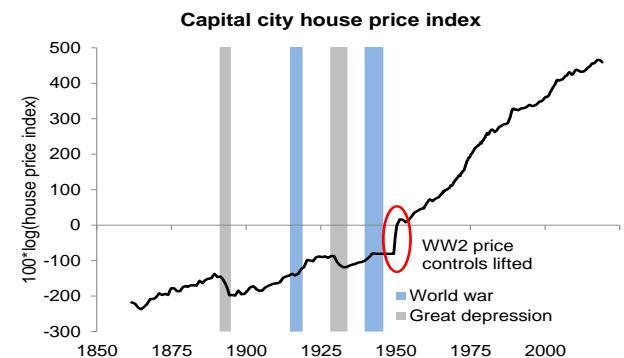
Moreover, there was an enormous run-up in prices in the post-WW2 period, particularly over the 1960s and 1970s, as shown in log form in Chart 3.

Chart 2: House prices have fallen sharply



Source: Abelson, Australian Bureau of Statistics, BIS Shrapnel, Buttin, CoreLogic, Residex, Stapledon, National Australia Bank

Chart 3: There has been an enormous increase in house prices in the post-WW2 period

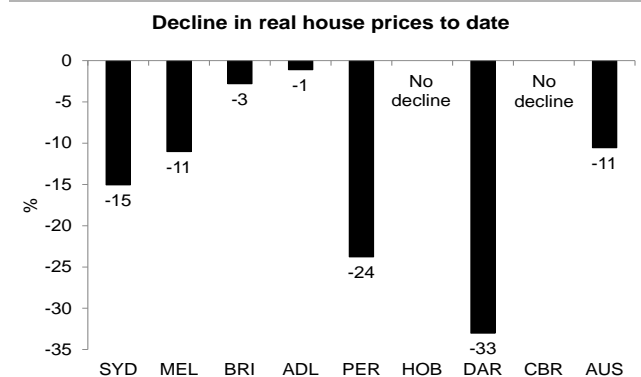


Note: The scale is in log form multiplied by 100. This means that the change in the index over a short period approximately equals the percentage change in prices. Source: Abelson, Australian Bureau of Statistics, BIS Shrapnel, Buttin, CoreLogic, Residex, Stapledon, National Australia Bank

Declines in real house prices are relatively common, but the fall to date is still large by past experience

The drawback to examining the change in house prices over such a long period is that it spans periods of both low and high inflation. To get a better sense of the underlying trend in prices, we constructed a series of real house prices by deflating house prices by the CPI.

Chart 4: Real house price declines by capital city



Note: Australia is the weighted capital city index. Calculated using quarterly data. Source: Australian Bureau of Statistics, CoreLogic, National Australia Bank

On this basis, real capital city prices have fallen by 11% to date from the record peak reached in Q3 2017. As a result, prices are now at their lowest level since Q3 2015.

Repeating the previous analysis using real house prices, we calculated both average and median changes in prices over the period from 1861 to 2019.

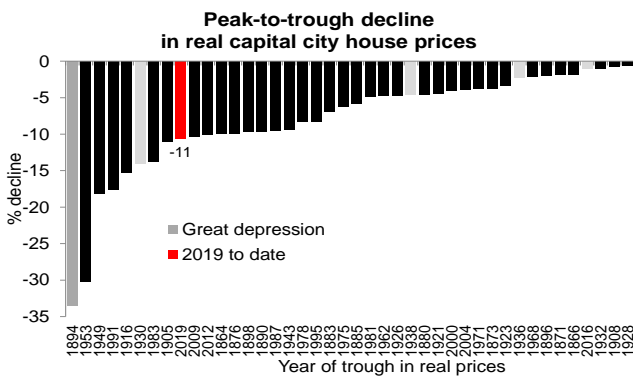
- **Price rises:** (1) the average increase in real prices was 19% over an average of about two and a half years; and (2) the median increase in real prices was 11% over a median period of two years.
- **Price declines:** (1) the average fall was 8% over an average period of just over one year; and (2) the median fall was 6% over a median span of one year.

This means that the decline to date is large relative to history, but is no longer the biggest decline in the post-WW2 period. Real price declines are relatively common and the fall to date is eclipsed by declines in:

- (1) the post-Korean war wool boom of the early 1950s (when real prices fell by 30%);
- (2) the immediate post-WW2 period, when government-controlled prices were eroded by inflation (-18%); and
- (3) the early 1980s recession (-14%).

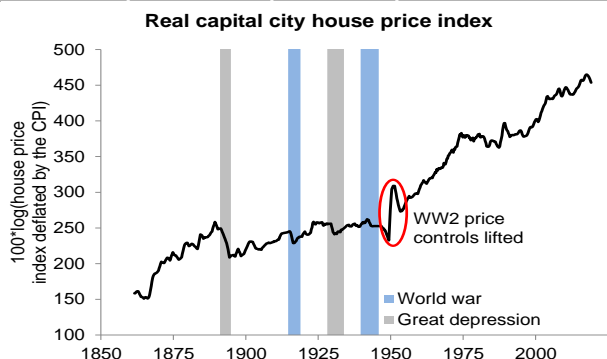
Again, though, it needs to be remembered that there was an enormous increase in prices in the post-WW2 period, even after adjusting for inflation, as shown in Chart 6.

Chart 5: House prices declines are more common in real terms



Source: Abelson, Australian Bureau of Statistics, BIS Shrapnel, Butlin, CoreLogic, Residex, Stapledon, National Australia Bank

Chart 6: There has also been an enormous increase in real house prices in the post-WW2 period



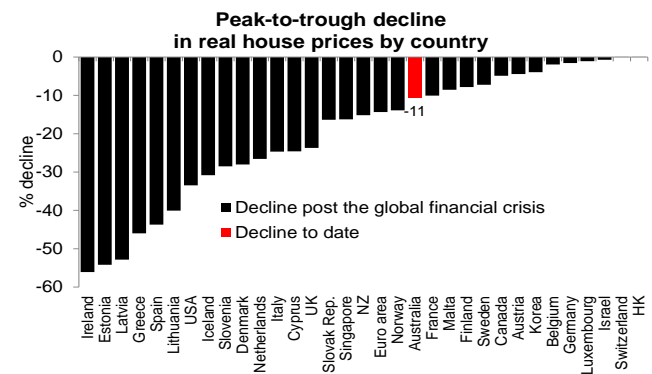
Note: The scale is in log form multiplied by 100. This means that the change in the index over a short period approximately equals the percentage change in prices.
Source: Abelson, Australian Bureau of Statistics, BIS Shrapnel, Butlin, CoreLogic, Residex, Stapledon, National Australia Bank

The drop in house prices to date is modest compared with other advanced economies’ experience during the global financial crisis

Judging the fall in prices against other countries, we found that it was modest compared with the declines seen after the global financial crisis in other advanced economies.

Using data from the Bank for International Settlements, we calculated that the average decline in real house prices in other advanced economies post the global financial crisis was 20%, with a median decline of 16%. Some countries, though, experienced falls of more than 40% (see Chart 7).

Chart 7: The fall in Australia’s real house prices to date is modest compared with the international experience post the global financial crisis

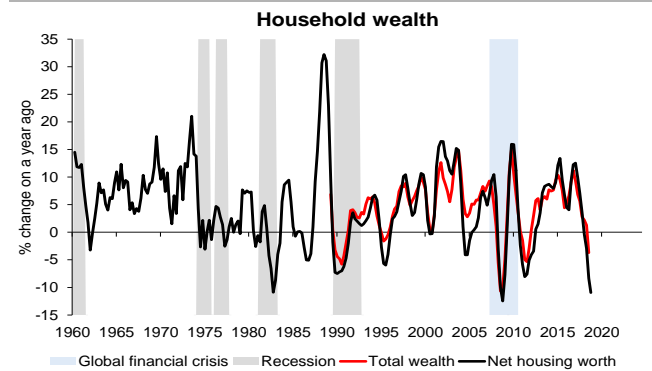


Note: The percentage decline in real house prices in other advanced economies was calculated from the Q2 2007 level of prices to the low-point reached in the years after the crisis until 2015.
Source: Australian Bureau of Statistics, Bank for International Settlements, CoreLogic, National Australia Bank

Falling house prices have been a significant hit to household wealth

Lower house prices have dragged household wealth lower over the past year and wealth likely fell further in early 2019. We estimate that total wealth fell by 4% in real terms over the course of 2018, with net housing worth – ie. housing assets less housing debt – falling by about 2.5% in Q1 2019.³

Chart 8: Net housing worth drives the trend in total household wealth



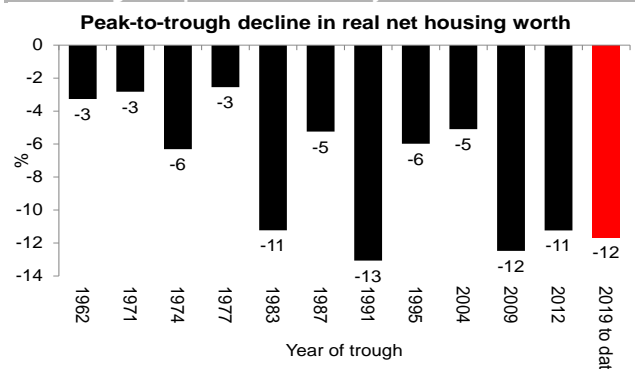
Note: Wealth and net housing worth are deflated by the household consumption deflator. The deflator is assumed to grow at the same rate in Q1 2019 as in Q4 2018.
Source: Abelson, Australian Bureau of Statistics, BIS Shrapnel, Butlin, CoreLogic, Residex, Stapledon, National Australia Bank

³ Household wealth = housing assets + consumer durables + financial assets – financial liabilities. Estimates of net housing worth prior to 1988 were constructed by NAB using the house price series mentioned earlier and estimates of the housing stock derived from census and completions data.

The impact of lower house prices on wealth is no surprise as net housing worth has historically driven the trend in household wealth (see Chart 8), with net housing worth accounting for roughly half of total wealth.

Net housing worth has fallen 12% in real terms from its record peak at the end of 2017. We only have a shorter time series for net housing worth that starts in 1959, but this is the equal second-largest decline over this period. That is, the fall matches the decline that started during the global financial crisis and is slightly less than the 13% decline during the early 1990s recession when unemployment peaked at 11%.

Chart 9: The decline in net housing work to date is one of the larger in post-WW2 history



Note: Net housing worth is deflated by the household consumption deflator. The deflator is assumed to grow at the same rate in Q1 2019 as in Q4 2018.
Source: Abelson, Australian Bureau of Statistics, BIS Shrapnel, CoreLogic, Residex, Stapledon, National Australia Bank

Our work suggests that vacancies and the NAB survey provide a better lead on the labour market than GDP

House prices are difficult to forecast, but seem likely to fall further in the short term based on partial data and given tighter credit conditions. There is no good publicly-available measure of credit conditions for households, but the Reserve Bank – which has access to the confidential APRA survey of senior loan officers – said in its February Statement on Monetary Policy that credit conditions for housing were tighter than they have been for some time and there were “concerns that a cautious approach by lenders may be affecting some lending decisions”.

With house prices pushing wealth lower, our work on wealth effects showed that households have a small marginal propensity to consume out of net housing worth. However, this has to be weighed against the fact that the shock to wealth is still growing and with wealth having both a short- and long-run effect on consumer spending.⁴

Recent work by the Reserve Bank on wealth effects reached a similar conclusion, which reinforces our view that wealth effects on spending are likely to be more important in current circumstances given the size of the decline in house prices and since there is no offset from household income, which continues to post only weak growth.⁵

⁴ See the Australian Markets Weekly, *Diagnosing the weakness in consumer spending*, 11 March 2019.

⁵ See Diego May, Gabriela Nodari and Daniel Rees, *Wealth and consumption*, Reserve Bank Bulletin, March 2019.

This suggests to us that consumer spending is likely to remain weak, underpinning an outlook of sluggish GDP growth in the low 2s.

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Appendix: Construction of historical series

We constructed a capital city house price series by splicing together these series:

- **Melbourne:** (1) 1861-1880 Butlin selling price per room; (2) 1880-1965 Stapledon house price; (3) 1965-1974 BIS Shrapnel house price; (4) 1975-1979 Residex house price; and (5) 1980-2019 CoreLogic home price.
- **Sydney:** (1) 1880-1965 Stapledon house price; (2) 1965-1978 BIS Shrapnel house price; (3) 1979 Residex house price; (4) 1980-2019 CoreLogic home price.
- **Brisbane:** (1) 1973-78 Abelson house price; (2) 1979 Residex house price; and (3) 1980-2019 CoreLogic home price.
- **Adelaide:** (1) 1971-78 Abelson house price; (2) 1978-1986 Residex house price; (3) 1986-1992 Bureau of Statistics house price; and (4) 1993-2019 CoreLogic home price.
- **Perth:** (1) 1970-78 Abelson house price; (2) 1978-1986 Residex house price; (3) 1986-1988 Bureau of Statistics house price; and (4) 1988-2019 CoreLogic home price.
- **Hobart:** (1) 1971-77 Abelson house price; (2) 1977-1983 Residex house price; and (3) 1983-2019 CoreLogic home price.
- **Darwin:** (1) 1984-1986 Residex house price; (2) 1986-1998 Bureau of Statistics house price; and (3) 1999-2019 CoreLogic home price.
- **Canberra:** (1) 1971-1986 Abelson house price; (2) 1986-1990 Bureau of Statistics house price; and (3) 1991-2019 CoreLogic home price.
- **Capital city index:** (1) 1880-1998 population-weighted combination of spliced city house prices; and (2) 1999-2019 CoreLogic home price.

The quarterly BIS Shrapnel, Bureau of Statistics, CoreLogic and Residex house price series were seasonally adjusted. The annual Abelson, Butlin and Stapledon house price series were converted into quarterly data using the Chow-Lin procedure.

The CPI was spliced using data from:

- 1851-1922 Ville and Withers;
- 1922-1986 Reserve Bank of Australia;
- 1987-2018 Bureau of Statistics.

The quarterly Reserve Bank series was seasonally adjusted. The annual Ville and Withers series was converted into quarterly data using the Chow-Lin procedure.

CALENDAR OF ECONOMIC RELEASES

Country	Economic Indicator	Period	Forecast	Consensus	Actual	Previous	GMT	AEST
Monday, 8 April 2019								
JN	BoP Current Account Balance / Trade Balance	Feb P		2633.5/591.3		600.4/-964.8	23.50	9.50
JN	BOJ Kuroda make a short speech at Branch Managers' Meeting						0.30	10.30
AU	ANZ Job Advertisements MoM	Mar				-0.9	1.30	11.30
CA	Housing Starts	Mar		194		173.153	12.15	22.15
CA	Building Permits MoM	Feb		2		-5.5	12.30	22.30
US	Factory Orders	Feb		-0.5		0.1	14.00	0.00
EC	ECB's Villeroy speaks in Paris						15.45	1.45
Tuesday, 9 April 2019								
NZ	ANZ Truckometer Heavy MoM	Mar				0.4	22.00	8.00
AU	Home Loans MoM	Feb	0.5	0.5		-1.2	1.30	11.30
US	NFIB Small Business Optimism	Mar		102		101.7	10.00	20.00
US	Clarida Speaks at Fed Listens Event in Minneapolis						22.45	8.45
Wednesday, 10 April 2019								
NZ	REINZ House Sales YoY	Mar				-9.5	10 to 15 April	
CH	Money Supply M2 YoY	Mar		8.2		8	10 to 15 April	
CH	New Yuan Loans CNY	Mar		1250		885.8	10 to 15 April	
JN	PPI YoY	Mar		1		0.8	23.50	9.50
JN	Core Machine Orders MoM / YoY	Feb		2.8/-4.6		-5.4/-2.9	23.50	9.50
AU	Westpac Consumer Conf Index	Apr				98.8	0.30	10.30
AU	RBA's Debelle Gives Speech in Adelaide						2.30	12.30
JN	Machine Tool Orders YoY	Mar P				-29.3	6.00	16.00
JN	BOJ Kuroda makes a speech at Trust Bank Association annual meet						6.15	16.15
UK	Industrial Production MoM / YoY	Feb	0.1/-0.9			0.6/-0.9	8.30	18.30
UK	GDP (MoM)	Feb		0		0.5	8.30	18.30
US	MBA Mortgage Applications	5 Apr				18.6	11.00	21.00
EC	ECB Main Refinancing Rate	10 Apr		0		0	11.45	21.45
EC	ECB Marginal Lending Facility	'10 Apr		0.25		0.25	11.45	21.45
EC	ECB Deposit Facility Rate	'10 Apr		-0.4		-0.4	11.45	21.45
EC	ECB's Draghi Speaks in Frankfurt After Policy Decision						12.30	22.30
US	CPI MoM / YoY	Mar		0.3/1.8		0.2/1.5	12.30	22.30
US	CPI Ex Food and Energy MoM / YoY	Mar		0.2/2.1		0.1/2.1	12.30	22.30
US	FOMC Meeting Minutes	20 Mar					18.00	4.00
Thursday, 11 April 2019								
CH	Foreign Direct Investment YoY CNY	Mar				6.6	11 to 18 April	
NZ	Food Prices MoM	Mar				0.4	22.45	8.45
AU	Consumer Inflation Expectation	Apr				4.1	0.00	10.00
CH	CPI YoY	Mar		2.3		1.5	1.30	11.30
CH	PPI YoY	Mar		0.4		0.1	1.30	11.30
AU	RBA's Debelle Gives Speech at ISDA 34th Annual General Meeting						2.30	12.30
GE	CPI MoM / YoY	Mar F		0.4/1.3		0.4/1.3	6.00	16.00
CA	New Housing Price Index MoM	Feb		0		-0.1	12.30	22.30
US	PPI Final Demand MoM / YoY	Mar		0.3/1.9		0.1/1.9	12.30	22.30
US	Initial Jobless Claims	6 Apr		210		202	12.30	22.30
US	Fed's Clarida Speaks at Annual IIF Meeting in Washington						13.30	23.30
US	Fed's Bullard Speaks on Economy and Monetary Policy						13.40	23.40
Friday, 12 April 2019								
NZ	BusinessNZ Manufacturing PMI	Mar				53.7	22.30	8.30
NZ	Net Migration SA	Feb				6300	22.45	8.45
AU	RBA Financial Stability Review						1.30	11.30
EC	Industrial Production SA MoM / YoY	Feb		-0.6/-0.9		1.4/-1.1	9.00	19.00
CH	Exports YoY / Imports YoY	Mar		6.2/0.2		-20.7/-5.2	12 March	
CH	Trade Balance	Mar		7.55		4.12	12 March	
US	U. of Mich. Sentiment / Expectations	Apr P		98.2/		98.4/88.8	14.00	0.00
Upcoming Central Bank Interest Rate Announcements								
Australia, RBA		7-May	1.5%	1.5%		1.5%		
Europe, ECB		10-Apr	-0.4%	-0.4%		-0.4%		
Canada, BoC		24-Apr	1.75%	1.75%		1.75%		
Japan, BoJ		25-Apr	-0.1%	-0.1%		-0.1%		
US, Federal Reserve		1-May	2.25-2.5%	2.25-2.5%		2.25-2.5%		
UK, BOE		2-May	0.75%	0.75%		0.75%		
New Zealand, RBNZ		8-May	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	2017				2018				2019				2020			
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Australia Forecasts																			
Household Consumption	2.6	2.0	2.4	0.4	0.7	0.7	1.0	0.4	0.9	0.3	0.4	0.4	0.7	0.5	0.6	0.6	0.6	0.6	0.6
Underlying Business Investment	1.4	2.3	5.1	3.4	0.2	3.9	0.2	0.9	-1.1	-1.8	0.4	1.1	1.5	1.2	1.6	1.0	1.5	1.0	1.2
Residential Construction	4.4	-7.8	-8.1	-4.1	-0.1	-1.4	0.9	3.4	2.2	0.5	-3.4	-2.1	-3.0	-2.9	-2.1	-2.1	-1.8	-1.9	-0.9
Underlying Public Spending	5.1	5.6	4.5	1.3	1.3	1.1	0.7	1.6	0.6	2.5	1.4	1.4	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Exports	5.0	2.6	2.5	-2.2	2.9	0.8	-1.4	4.1	1.3	-0.1	-0.7	1.1	1.4	1.1	0.6	0.5	0.5	0.4	0.6
Imports	4.2	1.7	3.6	2.8	0.1	3.2	1.0	1.8	0.6	-1.0	0.1	0.6	0.9	0.7	1.0	0.9	1.0	0.8	1.0
Net Exports (a)	0.2	0.2	-0.2	-1.0	0.6	-0.5	-0.5	0.5	0.1	0.2	-0.2	0.1	0.1	0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Inventories (a)	0.0	-0.1	0.0	0.4	-0.7	0.3	0.1	0.1	0.1	-0.3	0.2	0.0	0.1	-0.1	0.0	0.0	0.0	0.0	0.0
Domestic Demand - qtr%				0.7	0.8	0.9	0.8	0.9	0.7	0.5	0.3	0.5	0.6	0.5	0.6	0.6	0.7	0.6	0.7
Dom Demand - ann %	3.0	1.9	2.4	2.2	2.5	3.5	3.3	3.4	3.3	2.9	2.5	1.7	1.6	2.0	2.3	2.3	2.4	2.5	2.6
Real GDP - % q/q				0.4	0.8	0.6	0.6	1.1	0.8	0.3	0.2	0.6	0.8	0.5	0.6	0.5	0.6	0.5	0.6
Real GDP - % y/y	2.8	2.1	2.3	2.2	2.1	2.8	2.4	3.1	3.1	2.7	2.3	1.9	1.8	2.2	2.5	2.4	2.2	2.2	2.2
CPI headline - qtr %				0.5	0.2	0.6	0.6	0.4	0.4	0.4	0.5	0.2	0.6	0.6	0.8	0.5	0.6	0.6	0.7
CPI headline - ann %	1.9	1.9	2.5	2.1	1.9	1.8	1.9	1.9	2.1	1.9	1.8	1.5	1.8	2.0	2.3	2.6	2.6	2.5	2.4
CPI underlying - qtr %				0.5	0.6	0.3	0.5	0.5	0.4	0.3	0.4	0.5	0.6	0.5	0.6	0.6	0.6	0.5	0.5
CPI underlying - ann %	1.8	1.9	2.2	1.7	1.9	1.9	1.9	2.0	1.8	1.7	1.7	1.6	1.8	2.0	2.2	2.3	2.3	2.3	2.2
Wages (Pvte WPI - qtr %)				0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Wages (Pvte WPI - ann %)	2.1	2.5	2.7	1.8	1.8	1.9	1.9	1.9	2.1	2.1	2.3	2.4	2.4	2.5	2.6	2.6	2.7	2.7	2.8
Unemployment Rate (%)	5.3	5.1	5.1	5.9	5.6	5.5	5.4	5.5	5.6	5.1	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.2
Terms of trade	1.5	-1.2	-0.1	5.4	-5.9	-0.1	-0.1	3.1	-1.1	0.9	3.1	-3.8	-0.1	-1.9	0.9	0.6	-0.3	-0.9	0.1
G&S trade balance, \$Abn	22.1	17.2	11.4	6.6	3.3	1.0	-1.3	4.1	3.8	5.8	8.4	4.7	5.2	3.4	4.0	4.3	3.5	2.0	1.7
% of GDP	1.2	0.9	0.6	1.5	0.7	0.2	-0.3	0.9	0.8	1.2	1.7	1.0	1.1	0.7	0.8	0.8	0.7	0.4	0.3
Current Account (% GDP)	-2.1	-2.3	-2.6	-1.6	-2.4	-2.8	-3.4	-2.3	-2.5	-2.3	-1.5	-2.3	-2.2	-2.5	-2.4	-2.3	-2.5	-2.7	-2.8

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

Exchange Rate Forecasts	8-Apr	Jun-19	Sep-19	Dec-19	Mar-20
Majors					
AUD/USD	0.7097	0.70	0.73	0.75	0.76
NZD/USD	0.6732	0.67	0.69	0.70	0.70
USD/JPY	111.51	113	110	108	107
EUR/USD	1.1220	1.18	1.20	1.23	1.24
GBP/USD	1.3044	1.40	1.43	1.45	1.46
USD/CHF	0.9993	0.98	0.99	0.97	0.98
USD/CAD	1.3371	1.31	1.27	1.27	1.25
USD/CNY	6.7163	6.70	6.68	6.60	6.50

Australian Cross Rates	8-Apr	Jun-19	Sep-19	Dec-19	Mar-20
AUD/NZD	1.0542	1.04	1.06	1.07	1.09
AUD/JPY	79.1	79	80	81	81
AUD/EUR	0.6325	0.59	0.61	0.61	0.61
AUD/GBP	0.5441	0.50	0.51	0.51	0.52
AUD/CNY	4.7666	4.69	4.88	4.92	4.94
AUD/CAD	0.9489	0.92	0.93	0.95	0.95
AUD/CHF	0.7092	0.69	0.72	0.72	0.74

Interest Rate Forecasts	8-Apr	Jun-19	Sep-19	Dec-19	Mar-20
Australia Rates					
RBA Cash rate	1.50	1.50	1.25	1.00	1.00
3 month bill rate	1.72	1.80	1.60	1.35	na
3 Year Swap Rate	1.53	1.45	1.35	1.35	1.40
10 Year Swap Rate	2.14	2.08	2.08	2.08	2.20
Offshore Policy Rates					
US Fed funds	2.50	2.50	2.50	2.50	2.50
ECB deposit rate	-0.40	-0.40	-0.40	-0.40	-0.20
BoE repo rate	0.75	0.75	0.75	1.00	1.00
BoJ excess reserves rate	-0.10	-0.10	-0.10	-0.10	-0.10
RBNZ OCR	1.75	1.75	1.75	2.00	2.25
China 1yr lending rate	4.35	4.35	4.35	4.35	4.35
China Reserve Ratio	13.5	12.5	12.0	12.0	12.0
10-year Benchmark Bond Yields					
Australia	1.89	2.40	2.50	2.60	2.60
United States	2.50	2.80	3.00	3.00	3.00
New Zealand	1.99	3.10	3.20	3.30	3.40

Sources: NAB Global Markets Research; Bloomberg; ABS

Global GDP	2015	2016	2017	2018	2019	2020	20 Yr Avg
Dec year							
Australia	2.5	2.8	2.4	2.8	2.1	2.3	3.4
US	2.9	1.6	2.2	2.9	2.1	1.8	2.6
Eurozone	2.0	1.9	2.5	1.8	1.2	1.6	1.5
UK	2.3	1.8	1.8	1.4	1.3	1.6	2.4
Japan	1.3	0.6	1.9	0.8	0.5	0.7	0.8
China	6.9	6.7	6.9	6.6	6.3	6.0	9.2
India	8.2	7.1	6.7	7.3	7.1	7.2	6.6
New Zealand	3.5	3.9	3.1	2.8	2.4	2.6	3.0
World	3.5	3.3	3.8	3.7	3.5	3.5	3.5
MTP Top 5	4.1	3.7	4.3	4.0	3.5	3.4	5.0

Commodity prices (\$US)	8-Apr	Jun-19	Sep-19	Dec-19	Mar-20
Brent oil	70.7	65	65	70	70
Gold	1293	1320	1330	1350	1360
Iron ore	92.0	82	78	76	72
Hard coking coal	195	193	178	170	165
Thermal coal	79	93	98	95	93
Copper	6392	6250	6400	6300	6225
Aust LNG (*)	na	11.3	11.6	11.4	11.9

(*) Implied Australian LNG export prices.

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