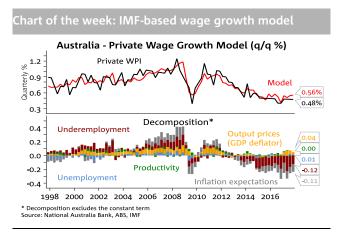
AUSTRALIAN MARKETS WEEKLY



Breaking down RBA research on wages

In this issue	 In its March Bulletin, the RBA published analysis that throws more light on why wage growth has remained low, even after taking into account a (modest) tightening of the
RBA wages research Calendar of	 labour market. While this puzzle has led some to believe the Phillips Curve is dead, the RBA finds that the Phillips Curve still explains recent wage trends, with the relationship between unemployment and wages remaining robust overall.
economic releases Forecasts	 That said, the RBA finds that the current softness in wage growth partly reflects structural factors that have been important in recent years. The Bank points to an advanced economy wages "overhang" persisting after the GFC – as wages were not cut by as much as economic conditions warranted during the Crisis. In addition, a decline in employee bargaining power/lower unionisation, also evident across advanced economies, has been providing a structural drag on wages. The RBA's main finding – and also embodied in their forecasts for wages and inflation
	 is that wages will ultimately respond to the tightening labour market, although wage growth will likely only lift gradually in the face of these structural headwinds, and evidence of increased wage stickiness.
	 Ahead of Easter, this week will be quiet data-wise for Australia. Two pieces of data worth looking into are RBA Credit and ABS Job Vacancies, both published on Thursday. It will be interesting if Job Vacancies also reports the improved labour demand that other measures are showing, although, given the continued jobs growth in the Labour Force data, it's not so much labour demand that's in any near term doubt. Rather, it's the increase in labour supply, buoyed by fast population growth and job seekers returning to the labour market. These factors are limiting the decline in spare labour market capacity.
To contact NAB's market	 Offshore, there will be ongoing interest in tariff and trade news following recent escalation of protectionism in the US. Fed speakers are due to re-appear with the FOMC out of the way, with most data interest in the US likely to be PCE deflators and Consumer Spending report, out Thursday. China releases its official PMIs, on Friday when many markets are closed for Easter. It will be important to see some recovery
experts, please click on one of the following links:	 from February. In markets, geopolitics and tariffs/trade war fears continue to take centre stage,
Ask the Economists Ask the FX Strategists Ask the Interest	with equity markets still on the defensive. AUD/USD closed (just) below 0.77 for the third time this week (and year) on Friday, despite the weak US dollar backdrop. NAB continues to look for a modestly lower \$A through the remainder of 2018 (ending around US\$0.75) and for the RBA to begin to raise rates later in the year.
Rate Strategists	There will be no Weekly next week for Easter Monday. Look forward to our next report on Monday 9 April.

	Last	% chg week		Last	bp / % chg week
AUD	0.7707	-0.1	RBA cash	1.50	0
AUD/CNY	4.88	-0.3	3y swap	2.21	3
AUD/JPY	80.7	-1.3	ASX 200	5,786	-2.9
AUD/EUR	0.623	-0.3	Iron ore	64.6	-7.5
AUD/NZD	1.065	-0.1	WTI oil	65.7	6.9
Source: Bloom	berg				



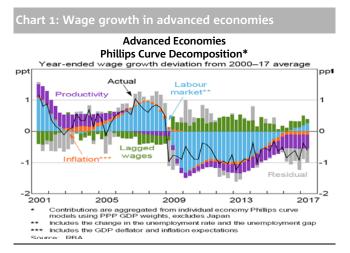
Kaixin Owyong, Economist, Markets

Wage Growth in Australia

Like many of us who watch markets, the RBA has been grappling with a puzzle: why has wage growth remained low, even when the labour market has been tightening? Since the GFC, wages have not picked up much across advanced economies as growth has recovered, even in economies operating above their (estimated) full employment levels. This has led some to believe that the relationship between unemployment and wages (the Phillips Curve) is dead.

The RBA, however, is not a believer. The Bank's recently published research, *Wage Growth in Advanced Economies*, shows that the relationship between unemployment and wages in Australia not only remains robust, but has been little changed over time (Arsov & Evans, 2018). It is clear that the RBA firmly believes the Phillips Curve is still an effective model for explaining wage growth (Chart 1), and that unemployment, not underemployment, remains the key metric of labour market slack for the RBA.

In contrast, modelling by the IMF finds underemployment has been more important of late, and our IMF-based wage model shows underemployment has been a significant drag on Australian wages in recent years (Chart of the Week).

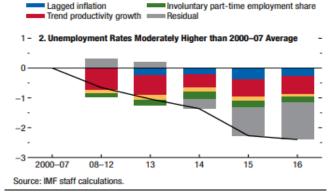


In this RBA paper, the authors estimate Phillips curve models for each economy, and across advanced economies, finding that softness in advanced economy wages post-GFC can largely be explained by the increase in unemployment and, for some economies, by lower labour productivity growth. Structural factors are also found to be holding back wage growth, including:

- stickiness in wages creating an "overhang",
 i.e. post-GFC, wages may not have been cut as much as economic conditions warranted; wage growth may remain subdued until this overhang is worked off; and
- a decline in labour's bargaining power, as evidenced by declining unionisation across advanced economies

The RBA notes that while these factors explain most of the subdued wage outcomes, there remains a sizeable unexplained factor weighing down wages across advanced economies by around 0.2 ppt per annum on average. This unexplained factor is also found in IMF research – it's much larger in recent years (World Economic Outlook, October 2017) – which is unable to account fully for why wage growth is so low in countries





where the unemployment rate remains only modestly above the pre-GFC average (Chart 2).

Part of the answer may lie in perceived bargaining power. Recent RBA analysis *Perceptions of Job Security in Australia* suggests that workers' perceptions of their job security have declined in recent years – also providing a small drag on wage growth (Foster & Guttmann, 2018). RBA modelling finds that a worker that is only 50% sure they will keep their job over the next year will have annual wage growth that is around 0.8 ppt lower than a worker that is certain they will be employed.

While perceptions of job security are lower for those in casual work, areas of high unemployment, jobs with a high risk of automation and industries more exposed to global trade, the RBA analysis is unable to explain the recent broad-based decline in perceived job security. As such, it remains to be seen whether perceived job security improves alongside a broader strengthening in economic activity and a more favourable labour market.

Should perceptions of job security improve, and the labour market continues to tighten, it would likely take some time to feed into wages growth. There is evidence that stickiness has increased in the past couple of years: the frequency of wage changes has declined alongside wage growth (Chart 3; Bishop & Cassidy, 2017). Increasing stickiness is also likely due to the longer duration of enterprise bargaining agreements (EBAs), which currently last an average of 3.2 years.

The average wage agreed upon in EBAs is also at a record low, suggesting that EBAs could weigh on aggregate wage growth for some time (Chart 4). Adding this EBA wages downshift into our IMF-based model of wages gives it the capacity to capture the low wages growth over the past couple of years, but removes much of the explanatory power of underemployment (Chart 5). This suggests that lower EBA wages, like aggregate wages, have been largely driven by labour market slack, rather than anything else.

So where does this leave us? The RBA research tells us that the Phillips Curve is not dead – declining unemployment will ultimately lead to a pick-up in wage growth. However, structural changes (the post-GFC "overhang" and a decline in employee bargaining power) will continue to weigh on wages, particularly in sectors of the Australian economy where wages have been more sticky. As such, it is unsurprising that the RBA expects only a "gradual" lift in wages, alongside only a gradual decline in unemployment. Given the lagging/sticky nature of wages, the RBA has noted that wages growth in the more flexible parts of the labour market will be important to watch. Already, in the March Board Meeting Minutes, the RBA stated: "some (but not all) of the industries with a relatively high share of employees on individual agreements had seen wages growth pick up." NAB will be keeping a close watch on developments in this space.

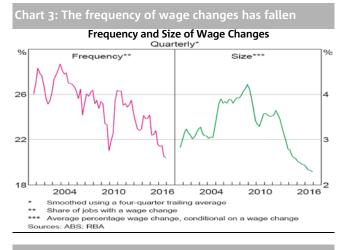
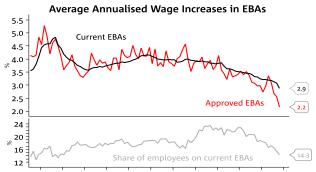
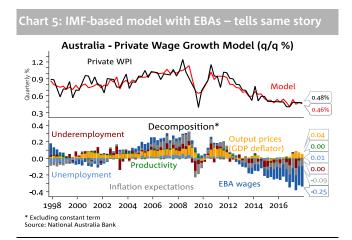


Chart 4: EBA wages trending lower



1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 Source: National Australia Bank, Department of Employment



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CALENDAR OF ECONOMIC RELEASES

/londay	Economic Indicator 26 March 2018	Period	Forecast	Consensus	Actual	Previous	GMT	AEDT
2	Trade Balance NZD	Feb	-329	-100	217	-566	21.45	8.45
	New RBNZ Policy Targets Agreement announced							
	New Residential Lending, YoY	Feb				4.6	2.00	13.00
(UK Finance Loans for Housing	Feb		39000		40117	8.30	19.30
	ECB's Weidmann Gives Speech in Austrian Central Bank						9.30	20.30
	Chicago Fed Nat Activity Index	Feb		0.15		0.12	12.30	23.30
5	Dallas Fed Manf. Activity	Mar		33.5		37.2	14.30	1.30
5	Fed's Dudley Speaks on the Future of Financial Regulation						16.30	3.30
	Fed's Mester Speaks on Monetary Policy						20.30	7.30
	, 27 March 2018							
J	ANZ Roy Morgan Weekly Consumer Confidence Index	25-Mar				118.5	22.30	9.30
	Fed's Quarles to Speak in Atlanta						23.10	10.10
	PPI Services YoY	Feb		0.7		0.7	23.50	10.50
	M3 Money Supply YoY	Feb		4.6		4.6	8.00	19.00
	Bank of Finland Press Briefing on Monetary Policy, Economy						8.00	19.00
	Consumer Confidence	Mar F		0.1		0.1	9.00	20.00
5	ECB's Nowotny Presents Austrian Central Bank's Annual Report						9.00	20.00
	S&P CoreLogic CS US HPI NSA Index/YoY	Jan		/		196.23/6.27	13.00	0.00
	Richmond Fed Manufact. Index	Mar		22		28	14.00	1.00
	Conf. Board Consumer Confidence	Mar		131		130.8	14.00	1.00
	Fed's Bostic Speaks at Economic Conference in Atlanta						15.00	2.00
ednes	day, 28 March 2018							
	ANZ Business Confidence	Mar				-19	0.00	11.00
	GfK Consumer Confidence	Apr		10.7		10.8	6.00	17.00
	MBA Mortgage Applications	23-Mar				-1.1	11.00	22.00
	Wholesale Inventories MoM	Feb P		0.5		0.8	12.30	23.30
	GDP Annualized QoQ	4Q T		2.7		2.5	12.30	23.30
	Wholesale Inventories MoM	Feb P		0.5		0.8	12.30	23.30
	Pending Home Sales MoM/NSA YoY	Feb		2/		-4.7/-1.7	14.00	1.00
	Fed's Bostic Speaks to Finance Professionals in Atlanta						16.00	3.00
	Building Permits MoM	Feb				0.2	21.45	8.45
	Retail Sales MoM/YoY	Feb		0.6/1.7		-1.8/1.6	23.50	10.50
ursday	/, 29 March 2018						2.2	
	Building consents, new dwellings #	Feb				0.2	21.45	8.45
J	Job vacancies	Feb				2.7	0.30	11.30
J	Private Sector Credit MoM/YoY	Feb	0.3/4.7	0.3/4.9		0.3/4.9	0.30	11.30
	Credit aggregates, Household YoY	Feb	0.5/ 4.7			6.0	2.00	13.00
	Unemployment Claims Rate SA	Mar		5.3		5.4	7.55	18.55
	Mortgage Approvals	Feb		66		67.5	8.30	19.30
(GDP QoQ/YoY	4Q F		0.4/1.4		0.4/1.4	8.30	
	CPI MoM/YoY	Mar P						19.30
-				0.5/1.7		0.5/1.4	12.00	23.00
	CPI EU Harmonized MoM/YoY	Mar P		0.5/1.6		0.5/1.2	12.00	23.00
5	PCE Core MoM/YoY	Feb		0.2/1.587		0.3/1.5	12.30	23.30
	PCE Deflator MoM/YoY	Feb		0.2/1.7		0.4/1.7	12.30	23.30
	Personal Income/Spending	Feb		0.4/0.2		0.4/0.2	12.30	23.30
A	GDP MoM/YoY	Jan		0.1/2.9		0.1/3.3	12.30	23.30
4	Industrial Product Price MoM	Feb				0.3	12.30	23.30
4	Raw Materials Price Index MoM	Feb				3.3	12.30	23.30
	Initial Jobless Claims	24-Mar		230		229	12.30	23.30
I	BoP Current Account Balance	4Q F				62.2		
	Chicago Purchasing Manager	Mar		62		61.9	13.45	0.45
	U. of Mich. Sentiment	Mar F		102		102	14.00	1.00
	Fed's Harker Speaks on the Economic Outlook						17.00	4.00
day, 3	0 March 2018							
	Good Friday hollday, most markets							
	Jobless Rate	Feb		2.6		2.4	23.30	10.30
	Job-To-Applicant Ratio	Feb		1.6		1.59	23.30	10.30
	Tokyo CPI YoY	Mar		1.3		1.4	23.30	10.30
	Tokyo CPI Ex-Fresh Food YoY/Ex-Food, Energy YoY	Mar		0.9/0.5		0.9/0.5	23.30	10.30
	Industrial Production MoM/YoY	Feb P		5/2.3		-6.8/2.5	23.50	10.50
	Manufacturing PMI	Mar		5, 15		50.3	1.00	12.00
	Non-manufacturing PMI	Mar				54.4	1.00	12.00
	Composite PMI	Mar				54.4 52.9		12.00
	•						1.00	
	Vehicle Production YoY	Feb				-3.8	4.00	15.00
	ng Central Bank Interest Rate Announcements	2.4	0/	01				
istralia		3-Apr	1.5%	1.5%		1.5%		
inada,		18-Apr		1.25%		1.25%		
irope,		26-Apr				-0.4%		
oan, B		27-Apr				-0.1%		
i, Fede	ral Reserve	2-May	1.5-1.75%	1.5-1.75%		1.5-1.75%		
	land RENZ	10-May	1.75%	1.75%		1.75%		
ew Zea		10 1110)	1,0,0	=., 5				

26 March 2018

FORECASTS

Economic Forecasts																				
		Annual %	6 change								Qu	arterly S	% chang	e						
						20	16			20:	17			20	18			20	19	
Australia Forecasts	2016	2017	2018	2019	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Household Consumption	2.9	2.7	2.5	2.5	1.0	0.6	0.5	0.8	0.4	0.9	0.5	1.0	0.4	0.6	0.5	0.7	0.6	0.6	0.7	0.7
Underlying Business Investment	-11.9	3.0	4.9	5.5	-3.4	-2.4	-5.4	1.6	3.2	0.3	4.0	-1.2	1.8	1.4	0.9	1.5	1.1	1.4	1.9	1.4
Residential Construction	8.6	-2.4	-3.2	-2.0	4.6	1.5	-1.0	2.5	-3.0	0.2	-1.7	-1.3	-0.4	-1.0	-0.6	-0.3	-1.0	-0.2	0.0	-0.5
Underlying Public Spending	5.3	4.5	3.9	3.7	1.8	2.0	1.0	0.7	1.0	1.1	1.6	1.1	0.8	0.8	0.8	0.9	1.0	1.0	1.0	1.0
Exports	6.8	3.9	4.9	3.7	2.5	1.2	0.8	3.2	-1.7	3.0	1.2	-1.8	2.1	2.1	1.6	1.3	0.3	0.6	0.8	1.0
Imports	0.2	7.6	4.0	4.5	-0.8	2.5	0.8	2.3	2.9	0.8	2.2	0.5	0.8	1.0	0.8	1.2	1.0	1.2	1.5	1.2
Net Exports (a)	1.2	-0.9	0.1	-0.3	1.0	-0.3	0.0	0.1	-1.0	0.4	-0.2	-0.5	0.2	0.2	0.1	0.0	-0.2	-0.1	-0.2	-0.1
Inventories (a)	0.1	-0.1	-0.1	0.0	0.0	0.4	0.2	-0.4	0.4	-0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Domestic Demand - qtr%					0.1	0.6	-0.1	1.0	0.7	0.9	0.9	0.6	0.5	0.6	0.5	0.7	0.6	0.7	0.9	0.8
Dom Demand - ann %	1.9	2.9	2.6	2.8	1.5	1.8	1.7	2.5	2.3	2.6	3.6	3.1	2.9	2.7	2.3	2.4	2.5	2.6	3.0	3.0
Real GDP - qtr %					1.0	0.8	-0.2	1.1	0.5	0.8	0.7	0.4	0.7	0.9	0.7	0.8	0.5	0.6	0.7	0.7
Real GDP - ann %	2.6	2.3	2.8	2.6	2.7	3.3	2.1	2.4	1.9	2.0	2.9	2.4	2.6	2.7	2.7	3.1	2.8	2.6	2.6	2.5
CPI headline - qtr %					-0.2	0.4	0.7	0.5	0.5	0.2	0.6	0.6	0.5	0.5	0.6	0.8	0.5	0.5	0.6	0.8
CPI headline - ann %	1.3	1.9	2.2	2.4	1.3	1.0	1.3	1.5	2.1	1.9	1.8	1.9	1.9	2.3	2.3	2.4	2.4	2.4	2.4	2.5
CPI underlying - qtr %					0.2	0.5	0.3	0.4	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6
CPI underlying - ann %	1.5	1.8	1.9	2.2	1.5	1.5	1.4	1.5	1.7	1.8	1.9	1.8	1.8	1.7	1.9	2.0	2.1	2.2	2.2	2.3
Wages (Pvte WPI - qtr %					0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7
Wages (Pvte WPI - ann %)	1.9	1.8	2.1	2.5	2.0	2.0	1.9	1.8	1.8	1.8	1.9	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.5	2.6
Unemployment Rate (%)	5.7	5.6	5.1	5.0	5.8	5.7	5.7	5.7	5.9	5.6	5.5	5.4	5.2	5.1	5.1	5.0	5.0	5.0	5.0	5.0
Terms of trade	0.5	12.2	-0.7	-0.7	-1.9	2.5	4.1	11.2	5.4	-6.0	-0.1	0.2	2.6	-1.5	-3.1	-1.0	-1.7	-2.4	0.9	0.4
G&S trade balance, \$Abn	-14.2	11.8	7.9	-18.2	-8.4	-7.5	-4.3	6.0	6.9	3.0	2.0	-0.1	3.6	3.3	1.0	0.1	-2.4	-5.3	-5.3	-5.2
% of GDP	-0.8	0.7	0.4	-0.9	-2.0	-1.8	-1.0	1.4	1.5	0.7	0.4	0.0	0.8	0.7	0.2	0.0	-0.5	-1.1	-1.1	-1.0
Current Account (% GDP)	-3.1	-2.3	-2.7	-4.0	-3.7	-3.9	-3.3	-1.4	-1.4	-2.4	-2.4	-3.1	-2.4	-2.4	-2.9	-3.1	-3.6	-4.2	-4.2	-4.1

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

Exchange Rate Forecasts

	26-Mar	Mar-18	Jun-18	Sep-18	Dec-18	Jun-19	Dec-19			
Majors										
AUD/USD	0.7707	0.79	0.78	0.77	0.75	0.76	0.75			
NZD/USD	0.7240	0.73	0.72	0.71	0.70	0.71	0.70			
USD/JPY	104.71	110	110	109	109	107	105			
EUR/USD	1.2366	1.25	1.28	1.30	1.30	1.27	1.30			
GBP/USD	1.4152	1.44	1.45	1.47	1.48	1.45	1.46			
USD/CNY	6.3160	6.28	6.25	6.20	6.18	6.23	6.24			
USD/CAD	1.2884	1.23	1.22	1.24	1.25	1.21	1.22			
USD/CHF	0.9463	0.93	0.92	0.90	0.91	0.93	0.92			
Australian Cross Rat										
AUD/NZD	1.0645	1.08	1.08	1.08	1.07	1.06	1.07			
AUD/JPY	80.7	87	86	84	82	81	79			
AUD/EUR	0.6232	0.63	0.61	0.59	0.58	0.59	0.58			
AUD/GBP	0.5446	0.55	0.54	0.52	0.51	0.52	0.51			
AUD/CNY	4.8677	4.96	4.88	4.77	4.64	4.70	4.68			
AUD/CAD	0.9930	0.97	0.95	0.95	0.94	0.91	0.92			
AUD/CHF	0.7293	0.73	0.72	0.69	0.68	0.70	0.69			
Interest Rate Forecasts										
	26-Mar	Mar-18	Jun-18	Sep-18	Dec-18	Jun-19	Dec-19			
Australia Rates										

	20-iviar	IVIAT-18	Jun-18	Sep-18	Dec-18	Jun-19	Dec-19
Australia Rates							
RBA Cash rate	1.50	1.50	1.50	1.50	1.75	2.00	2.25
3 month bill rate	2.00	1.80	1.80	2.05	2.05	2.30	2.55
3 Year Swap Rate	2.19	2.1	2.4	2.5	2.6	3.2	3.4
10 Year Swap Rate	2.87	3.0	3.3	3.4	3.5	3.9	4.0
Offshore Policy Rates							
US Fed funds	1.75	1.75	2.00	2.00	2.25	2.50	2.50
ECB deposit rate	-0.40	-0.40	-0.40	-0.40	-0.20	0.00	0.00
BoE repo rate	0.50	0.50	0.50	0.50	0.75	0.75	1.00
BoJ excess reserves rate	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10
RBNZ OCR	1.75	1.75	1.75	1.75	1.75	2.25	2.75
China 1yr lending rate	4.35	4.35	4.35	4.35	4.35	4.35	4.35
China Reserve Ratio	17.0	16.0	16.0	16.0	16.0	16.0	16.0
10-year Benchmark Bon	d Yields						
Australia	2.65	2.85	2.80	3.10	3.10	3.40	3.65
United States	2.81	3.00	3.00	3.25	3.25	3.50	3.50
New Zealand	2.78	2.95	3.00	2.95	3.20	3.35	3.80

Sources: NAB Global Markets Research; Bloomberg; ABS

Global GD	Р						
							20 Yr
Dec year	2014	2015	2016	2017	2018	2019	Avge
Australia	2.6	2.5	2.6	2.3	2.8	2.6	3.4
US	2.6	2.9	1.5	2.3	2.7	2.3	2.6
Eurozone	1.4	2.0	1.8	2.5	2.5	2.4	1.5
UK	3.1	2.3	1.9	1.8	1.8	1.5	2.4
Japan	0.3	1.4	0.9	1.8	1.4	0.9	0.8
China	7.3	6.9	6.7	6.8	6.5	6.3	9.2
India	7.0	7.5	7.9	6.4	7.1	7.3	6.6
New Zealand	3.6	3.5	4.0	2.9	2.8	3.0	3.0
World	3.5	3.4	3.2	3.6	3.8	3.6	3.5
MTP Top 5	4.0	4.1	3.7	4.2	4.0	3.7	5.0

Commod	lity	prices	(ŞUS)

	26-Mar	Mar-18	Jun-18	Sep-18	Dec-18	Mar-19	Jun-19	Sep-19	Dec-19	
WTI oil	65.7	60	61	61	60	59	60	61	62	
Gold	1349	1330	1320	1330	1360	1380	1370	1380	1390	
Iron ore	64.6	73	67	63	61	60	58	60	62	
Hard coking coal	220	215	175	130	110	101	99	100	100	
Thermal coal	97	85	90	90	90	90	65	65	65	
Copper	6638	6760	6690	6630	6630	6630	6630	6630	6630	
Aust LNG (*)	11.2	10.5	11.2	11.5	11.8	11.7	11.3	11.7	11.8	

(*) Implied Australian LNG export prices.

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