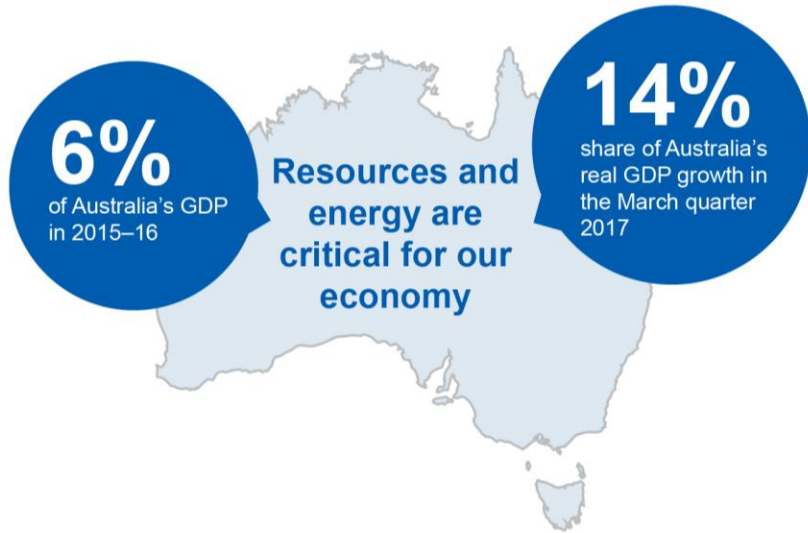
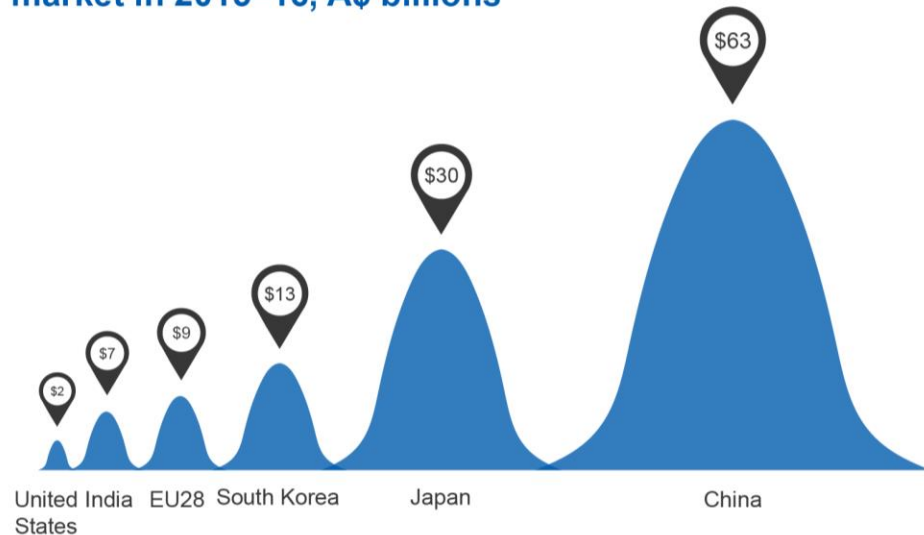


# Overview

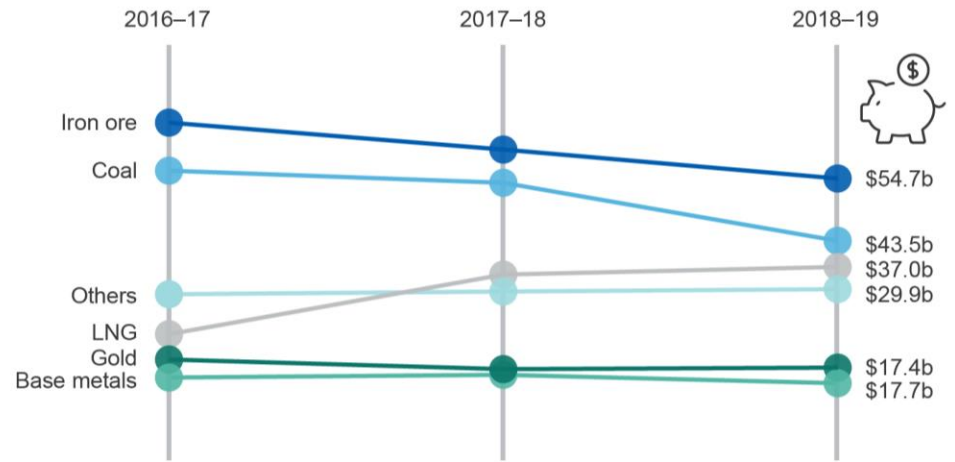
Resources and Energy Quarterly June 2017



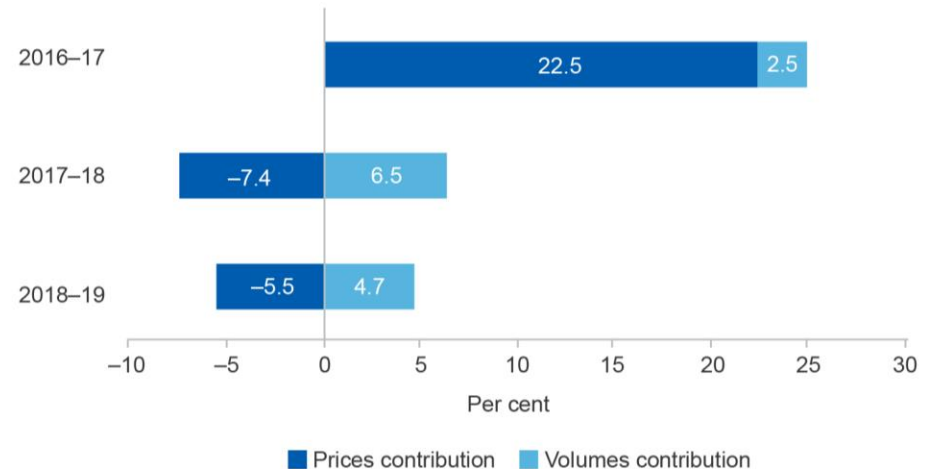
Australia's resources and energy exports by major market in 2015–16, A\$ billions



Australia's resources and energy commodity exports, 2016–17 A\$ billions



Australia's resources and energy exports growth, contributions from price and volumes



## Revisions to the outlook

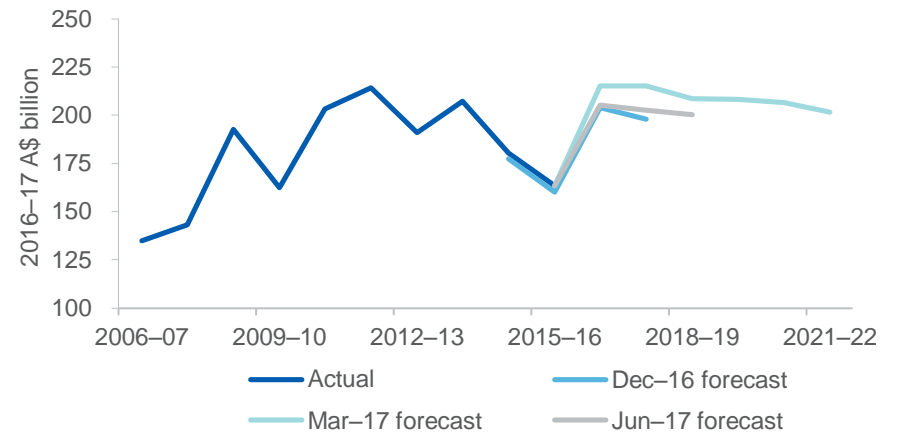
Since the March 2017 *Resources and Energy Quarterly*, the value of Australia's resources and energy export earnings in 2016–17 has been revised down by \$9.9 billion (4.6 per cent) to \$205 billion. The downward revision primarily reflects an earlier than expected decline in iron ore prices since the March 2017 *Resources and Energy Quarterly*. Export earnings for iron ore have been revised down by \$7.2 billion to \$65 billion. Export earnings have also been revised down for LNG — by \$1.0 billion — largely due to unplanned outages at LNG plants.

A downward revision to the iron ore price is also the primary reason for the downward revision in resource and energy export earnings in 2017–18 and 2018–19. An anticipated delay to the start-up of the Ichthys project (which will produce LNG and condensate), and downward revisions to the oil price outlook (which affects the LNG price outlook) also contributed to the downward revisions in total resources and energy export earnings.

Downward revisions to the metallurgical coal and copper price outlooks also contributed to the revisions to export earnings in 2017–18 and 2018–19.

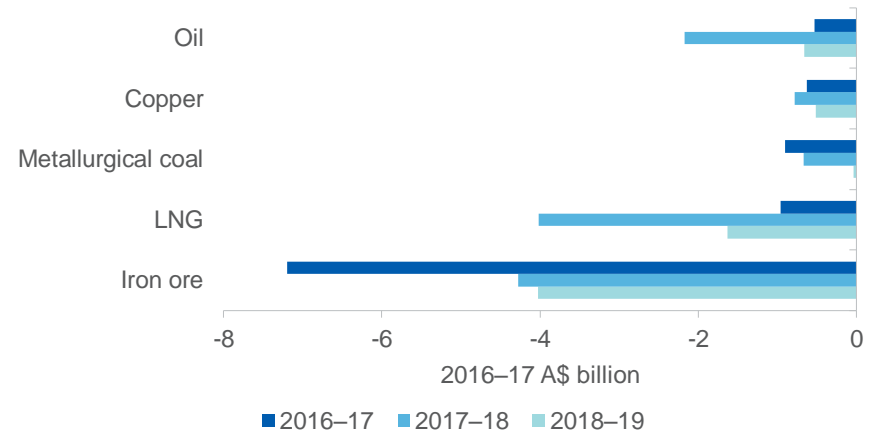
Overall, resource and energy export earnings in 2017–18 have been revised down by \$13 billion to \$202 billion, while export earnings in 2018–19 have been revised down by \$8.3 billion to \$200 billion.

**Figure 1.1: Revisions to export earnings**



Source: ABS (2017) *International Trade in Goods and Services*, 5368.0; Department of Industry, Innovation and Science (2017)

**Figure 1.2: Largest revisions to export earnings, March 2017 to June 2017**



Source: ABS (2017) *International Trade in Goods and Services*, 5368.0; Department of Industry, Innovation and Science (2017)

## Market summary: Commodity prices and world demand

### Commodity prices declined for the first time in a year in the June quarter

The Office of the Chief Economist's resource and energy commodity price index — the weighted-average price Australian resource and energy exporters receive for their commodities — is estimated to have declined by 3.0 per cent in nominal terms in the June quarter 2017, following four consecutive quarters of growth. A depreciation in the Australian dollar cushioned the impact of the fall in USD commodity prices: in US dollar terms, Australia's resources and energy export prices are estimated to have dropped by 6.7 per cent.

The slide in resource and energy commodity prices was largely driven by a 13 per cent decline in iron ore export prices (export unit values). Iron ore prices are forecast to decline further over the next two years, as supply grows and global demand is little changed.

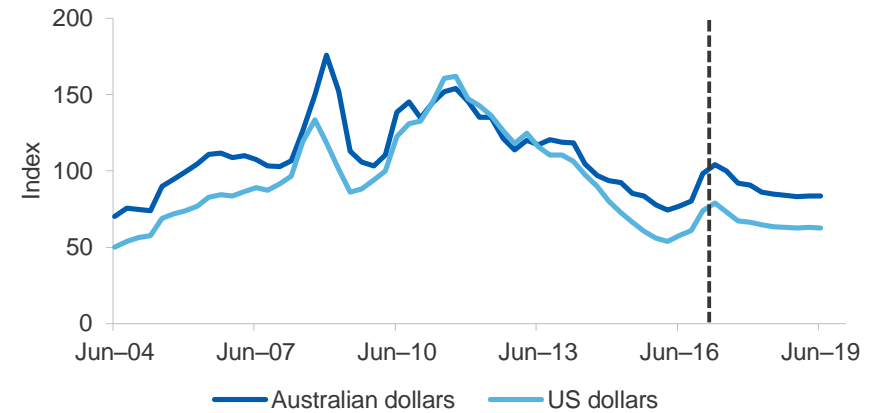
Partially offsetting the decline in iron ore prices in the June quarter was a 15 per cent increase in LNG export prices. Higher prices for LNG are linked to the lagged effect of higher oil prices in the early months of 2017.

Cyclone Debbie — which hit northern Queensland in late March and caused export delays in the world's largest metallurgical coal producing region — contributed to the metallurgical coal spot price increasing by 24 per cent in the June quarter 2017. However, with the spot price considerably lower than the previous contract price, export prices are estimated to have only increased by 4.0 per cent overall. Delays to the June quarter contract price negotiations resulted in exporters moving entirely to spot or index-linked pricing in that period.

Thermal coal export prices are estimated to have grown by 4.9 per cent in the June quarter 2017. This reflects the renegotiation of the benchmark contract price, which settled at US\$84 a tonne for April 2017 to March 2018, a 36 per cent increase. Weighing down on overall thermal coal export prices was the benchmark Newcastle spot price, which declined by 5.0 per cent in the June quarter.

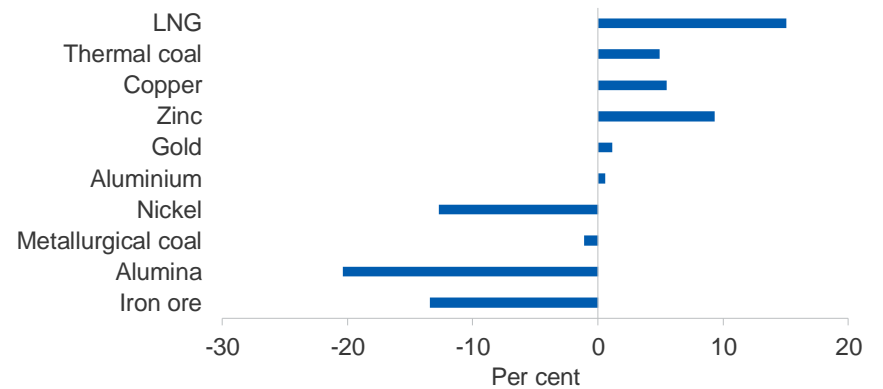
Other major price movers in the June quarter were zinc (up 9.3 per cent) and copper (up 5.5 per cent). Alumina prices declined by 20 per cent, while nickel prices declined by 13 per cent.

Figure 1.3: Resource and energy export prices, real terms



Notes: Export prices are export unit values (EUVs, export values divided by export volumes); the price index is a Fisher Price Index, which weights each commodity's EUV by its share of total export values; the Australian dollar index is based to June quarter 2017 = 100; US dollar commodity prices are converted at the market exchange rate  
Source: ABS (2017) International Trade in Goods and Services, 5368.0; Department of Industry, Innovation and Science (2017)

Figure 1.4: Growth in Australia's nominal export prices in the June quarter 2017 (ranked in order of contribution to total)



Source: ABS (2017) International Trade in Goods and Services, 5368.0; Department of Industry, Innovation and Science (2017)

*In 2016–17, Australian exporters received the highest prices for their commodities since 2013–14*

Resources and energy export prices are estimated to have grown by 23 per cent in real terms in 2016–17, to reach their highest level since 2013–14 — although they remained 34 per cent lower than their 2008–09 high.

Nonetheless, Australia’s resources and energy export prices are forecast to decline by 6.1 per cent in 2017–18, and by a further 7.4 per cent in 2018–19. These declines primarily reflect declining metallurgical coal prices — driven by a forecast decline in China’s metallurgical coal imports. Also expected to put downward pressure on Australia’s overall resources and energy export prices is iron ore and, to a lesser extent, thermal coal. Partially offsetting declines in iron ore and coal prices are forecast increases in LNG, crude oil and condensate and gold prices.

*Growth in global consumption of Australia’s resource and energy commodities is forecast to slow over the next two years*

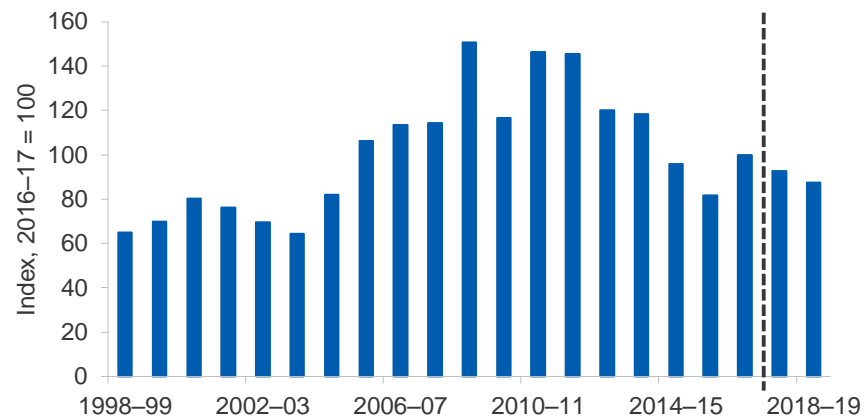
Global consumption of resource and energy commodities is forecast to grow in 2017, 2018 and 2019 — albeit more slowly than in 2016, and considerably more slowly than most of the last decade. Slower global demand growth is expected to contribute to declining commodity prices.

In particular, growth in consumption of steel-making commodities iron ore and metallurgical coal — which together represent over half of Australia’s resources and energy exports — is forecast to slow significantly. This is attributed to slight declines in steel production in China, the world’s largest steel producer, following a decade of rapid growth.

Similarly, a slowdown in infrastructure investment and construction activity in China is expected to be reflected in slowing growth in global consumption of base metals.

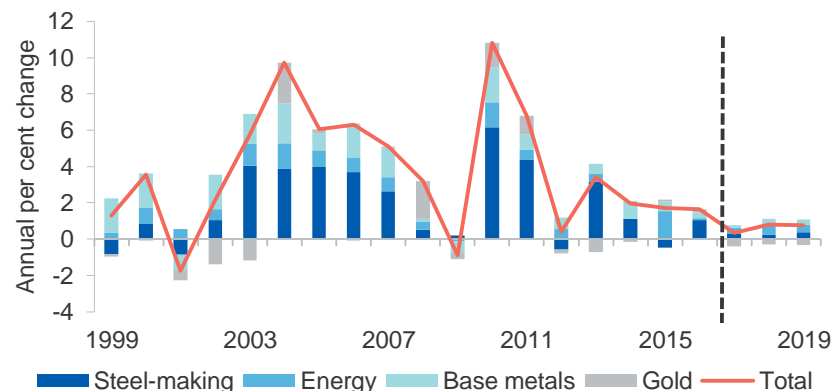
Global consumption of energy (excluding metallurgical coal) commodities is also forecast to slow, but not to the same extent as steel-making commodities. For Australia, the most important source of growth in global energy commodity demand will be from gas, which is forecast to grow at an average annual rate of 1.6 per cent between 2016 and 2019. By contrast, global consumption of thermal coal is forecast to grow by 0.7 per cent a year.

**Figure 1.5: Australia’s resources and energy export prices, real terms**



Notes: The price index is a Fisher Price Index based on Australia’s export volumes and values. The values are in Australian dollars.  
Source: ABS (2017) *International Trade in Goods and Services*, 5368.0; Department of Industry, Innovation and Science (2017)

**Figure 1.6: Global usage of resource and energy commodities**



Notes: Steel-making includes iron ore and metallurgical coal. Energy excludes metallurgical coal. Consumption volumes for each commodity are weighted by their share of Australia’s resources and energy export values for that year.  
Sources: Bloomberg (2017) *World Steel Association*; IEA (2017) *Coal Information 2016*; Nexant *World Gas Model (2017)*; International Energy Agency *Monthly Oil Data Service (2017)*; World Nuclear Association (2017); Thompson Reuters (2017); World Bureau of Metal Statistics (2017); International Nickel Study Group (2017); International Lead Zinc Study Group (2017); Department of Industry, Innovation and Science (2017)

## Australia overview

*Australia's resource and energy export values grew rapidly in the first half of 2017, driven by a temporary surge in prices*

Australia's resources and energy export values grew by 44 per cent year-on-year (in real terms) in the March quarter 2017 — the strongest growth in over six years — and are estimated to have increased by 34 per cent year-on-year in the June quarter. For 2016–17 as a whole, resource and energy export values are estimated to have grown by 25 per cent.

Growth in export values in 2016–17 was largely propelled by increased prices — particularly for metallurgical coal and iron ore (despite recent price declines), but also for thermal coal and LNG. The rapid price growth was likely temporary — driven by a surge in activity in China's construction sector, as well as once-off weather and infrastructure-related supply disruptions. As a result, prices for iron ore and coal are forecast to decline in the next two years, while LNG prices — which are linked to oil prices by formula under contractual arrangement — are forecast to remain close to current levels.

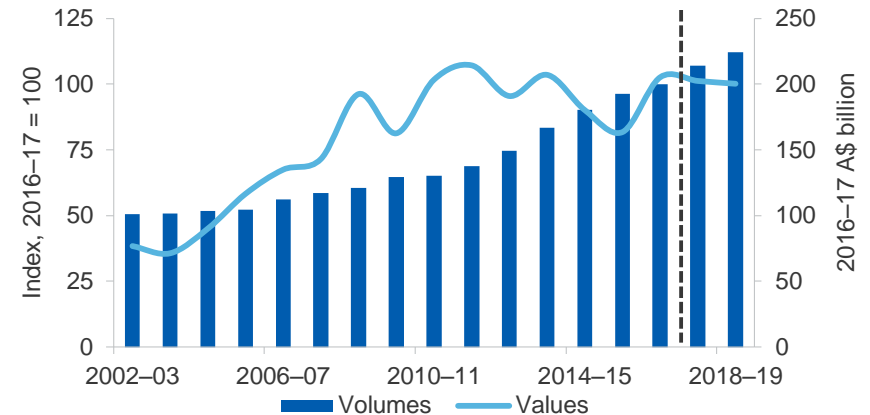
To a lesser extent, growth in export values was supported by growth in export volumes in 2016–17. The resources and energy export volumes index — which weights export volumes for each commodity by their value — is estimated to have grown by 3.9 per cent in 2016–17. This was the slowest growth in export volumes in six years.

Declining investment in the mining industry (particularly outside of oil and gas) is weighing on export volumes growth. The slowdown in export volumes growth reflects slower growth in iron ore and coal export volumes than in previous years, as well as declines in export volumes of metallurgical coal, zinc, nickel, aluminium, copper and oil.

*Weather-related supply disruptions had a measurable effect on Australia's metallurgical coal exports in 2016–17*

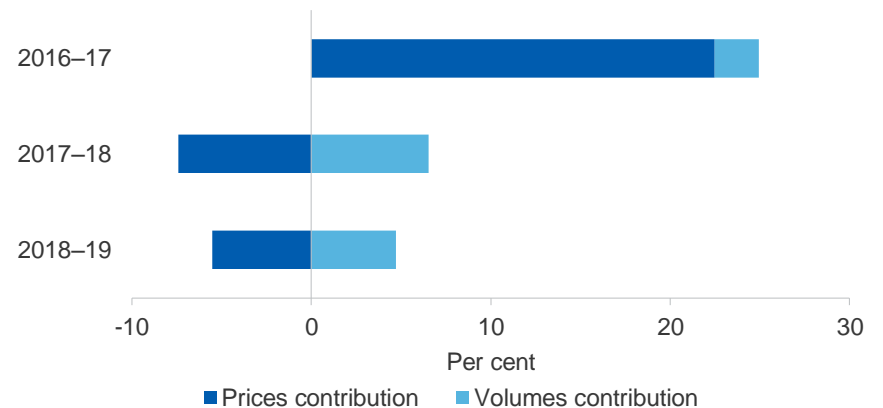
Several weather events affected Australian resource and energy exports in 2016–17. In Queensland, a combination of weather-induced production and infrastructure problems, industrial action and geological instability in some mines, hampered metallurgical coal production in the September quarter 2016.

**Figure 1.7: Australia's resources and energy export values and volumes**



Source: ABS (2017) *International Trade in Goods and Services*, 5368.0; Department of Industry, Innovation and Science (2017)

**Figure 1.8: Annual growth in Australia's resources and energy export values, contributions from prices and volumes**



Source: ABS (2017) *International Trade in Goods and Services*, 5368.0; Department of Industry, Innovation and Science (2017)



Metallurgical coal exports were again affected in the June quarter 2017 by rail damage in the aftermath of Cyclone Debbie. Producers stockpiled output while they waited for railway and port infrastructure to be repaired, suggesting a pickup in exports is likely in 2017–18. The two weather events contributed to metallurgical coal export volumes for 2016–17 being revised down from a 1.2 per cent increase (as of the June 2016 *Resources and Energy Quarterly*) to a 2.9 per cent decrease.

In Western Australia, a particularly severe monsoon season had a small impact on iron ore and LNG shipments. The effect of the monsoon was small enough such that company guidance for iron ore shipments for 2016–17 was not altered. Woodside reported that its Western Australian LNG and condensate production was lower than expected because of the monsoon.

Heavy rainfall in South Australia in the March quarter 2017 impacted on copper production, contributing to a 13 per cent decline in output.

*Export volumes across most base metals, metallurgical coal, oil and uranium, are estimated to have declined in 2016–17*

With relatively little new investment in Australian resource and energy mining and refining in recent years — a notable exception being LNG — export volumes growth has slowed considerably. In some cases, temporary supply disruptions and mine or refinery closures has contributed to lower export volumes.

Export volumes for the major base metals are estimated to have declined sharply in 2016–17, including zinc (down 32 per cent), nickel (down 27 per cent) and copper (down 11 per cent), reflecting a combination of mine and refinery closures, as well as temporary supply disruptions. Oil (down 4.7 per cent) and uranium (down 2.1 per cent) also declined, reflecting temporary supply disruptions.

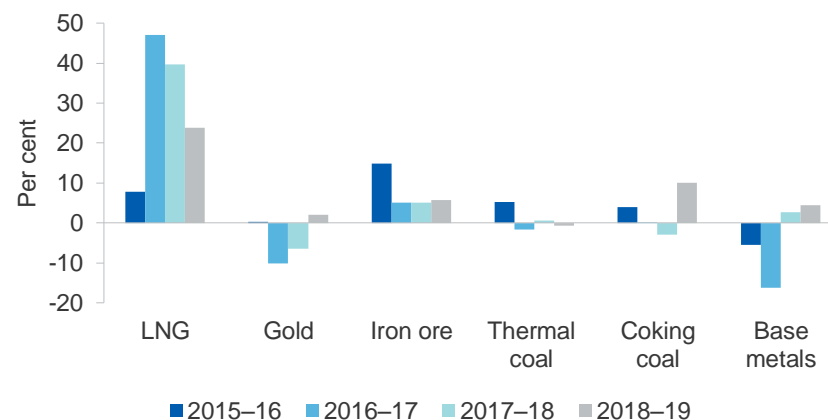
Several nickel, zinc and aluminium operations closed in 2016–17 — with producers reacting to lower global prices. Aluminium production was also adversely affected by a power outage at Portland Aluminium smelter. The decline in copper export volumes largely reflects life-of-mine closures.

The drop in base metals production is forecast to turn around, modestly, in 2017–18 and 2018–19. This reflects a small number of new mines starting production, and other new mining operations increasing output.

*Export volumes growth to accelerate in 2017–18, but soften in 2018–19*

In 2017–18 and 2018–19, Australia's resources and energy export volumes are forecast to grow by 7.0 per cent and 4.8 per cent, respectively. The pickup in 2017–18 partly reflects a return to growth in base metals exports. LNG exports will remain the main driver of growth in export volumes in the next two years, but the pace of growth in LNG exports is expected to slow sharply in both years. This reflects export volumes levelling off, as LNG operations finish their ramp up to full capacity following a period of heavy investment in the sector.

**Figure 1.9: Export volumes growth by commodity grouping**



Notes: The base metal group comprises aluminium, copper, nickel and zinc  
 Source: ABS (2017) *International Trade in Goods and Services*, 5368.0; Department of Industry, Innovation and Science (2017)

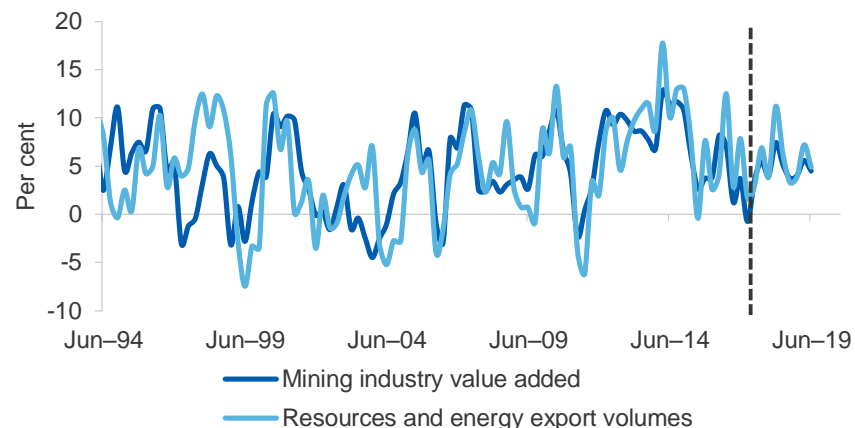
*The mining industry continued to support overall Australian economic growth in the March quarter 2017*

Australia's real Gross Domestic Product (GDP) grew by 0.3 per cent in the March quarter 2017, with mining industry value-added growing by 0.5 per cent. The mining industry directly accounted for 14 per cent of the growth in Australia's GDP in the quarter. Growth in mining industry value-added was primarily driven by oil and gas extraction, which grew by 3.1 per cent. Coal mining industry value-added also grew in the March quarter (up 1.6 per cent), while iron ore mining value-added declined by 1.5 per cent.

Oil and gas extraction has been the largest contributor to growth in mining industry value-added in the last two years, propelled by rapid growth in LNG exports. Growth in industry value-added for Australia's largest commodity exports — iron ore and coal — has been dampened by falling capital expenditure and slowing export volumes growth.

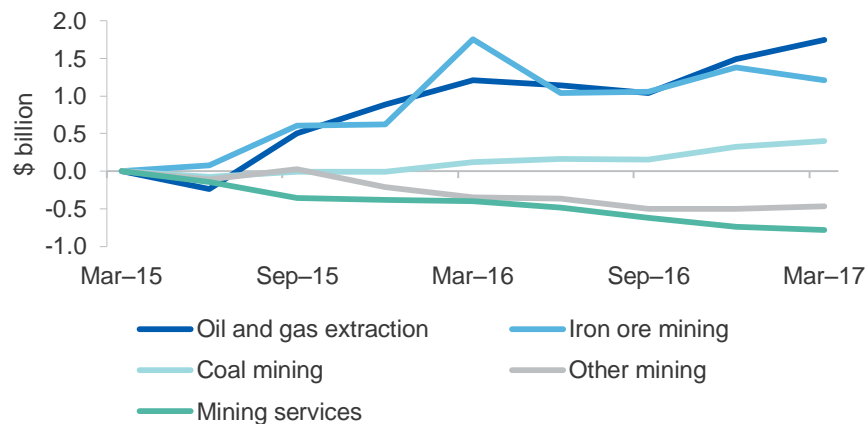
Resources and energy exports have a significant impact on mining industry value-added, as demonstrated in Figure 1.10. Over the next two years, accelerated growth in resources and energy export volumes (primarily from LNG) is expected to underpin more rapid growth in mining industry value-added. However, as outlined in the March 2017 *Resources and Energy Quarterly*, mining's contribution to the Australian economy is projected to slow considerably after 2018–19, as the last of the LNG plants currently under construction are completed, and as the LNG industry approaches full capacity.

**Figure 1.10: Mining industry value-added and resources and energy export volumes, year-on-year percentage growth**



Note: Mining industry value-added is in seasonally adjusted chain volume measures  
Source: ABS (2017) National Accounts, 5204.0; ABS (2017) International Trade in Goods and Services, 5368.0; Department of Industry, Innovation and Science (2017)

**Figure 1.11: Cumulative growth in mining industry value-added since March quarter 2015**



Note: Chart data is in seasonally adjusted chain volume measures  
Source: ABS (2017) National Accounts, 5204.0; ABS (2017) International Trade in Goods and Services, 5368.0

*Mining industry capital expenditure grew slightly in the March quarter 2017, although it is expected to decline in 2017–18*

Investment in Australia’s mining industry crept up by 0.4 per cent in the March quarter 2017, the first increase in nearly three years. The increase was entirely driven by a rise in investment in building and structures, while investment in plant and machinery continued to decline.

However, it is likely that mining investment will again decline in the coming financial year. Mining companies are expecting a 27 per cent drop in nominal investment in 2017–18. These falls are likely to come mostly from oil and gas extraction. As can be seen in Figure 1.13, investment in oil and gas peaked in December quarter 2013 — considerably higher, and over a year later, than the investment peaks for metal ore and coal mining.

Equally apparent is the dramatic decline in oil and gas investment since its peak. Weighing on investment in the oil and gas sector in the coming two years will be the \$US54 Gorgon LNG project, which was completed in March 2017. While large LNG projects remain — most significantly, the \$US37 Ichthys and the \$US34 billion Wheatstone projects — the list of major projects yet to be completed is forecast to diminish rapidly over the next two years.

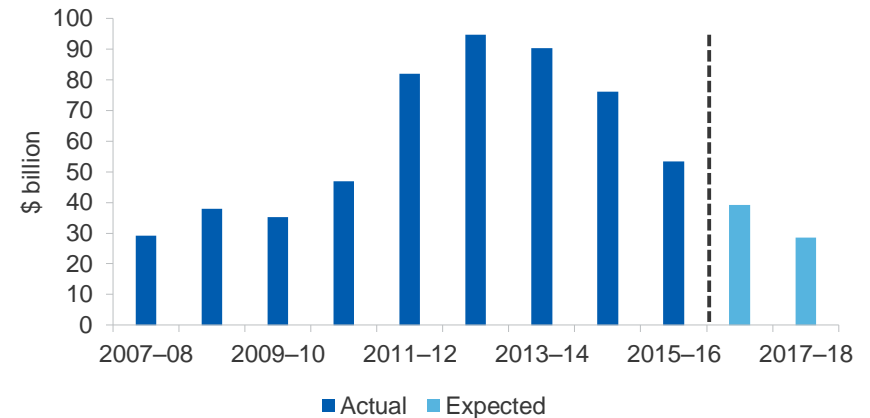
*Exploration expenditure is growing, driven by gold*

Exploration expenditure grew by 5.1 per cent (seasonally adjusted) in the March quarter 2017, but was 3.7 per cent lower year-on-year. Within the total, minerals exploration expenditure grew for the fourth consecutive quarter, and was 15 per cent higher year-on-year.

The increase in minerals exploration in the past year has been largely driven by gold exploration. Increased gold exploration has been incentivised by relatively supportive gold prices and high profit margins. While the gold price has declined by 22 per cent (in nominal terms) since its record high in December quarter 2012, it remains 43 per cent higher than its 21<sup>st</sup> century-to-date average. The outlook for gold prices is also generally stable.

Minerals exploration in the March quarter 2017 was also helped by growth in “other minerals” exploration, and by nickel and cobalt exploration. Coal exploration edged up by 2.1 per cent year-on-year, while iron ore exploration declined by 7.3 per cent year-on-year.

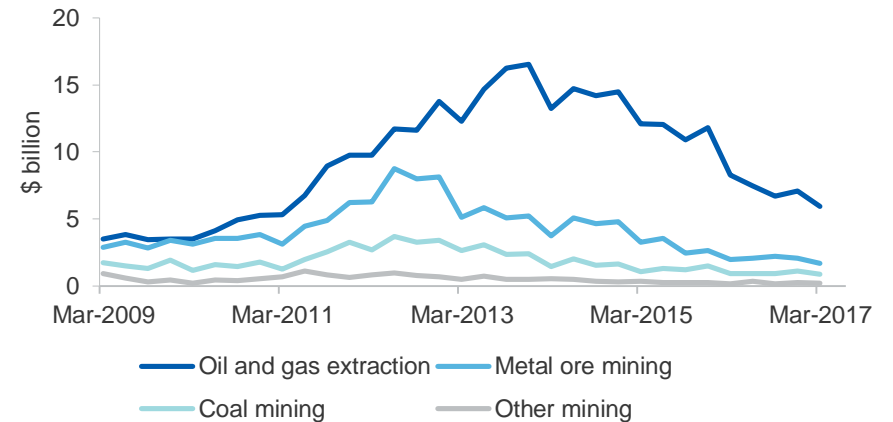
**Figure 1.12: Mining industry capital expenditure, fiscal year**



Notes: Chart data is in nominal terms

Source: ABS (2017) Private New Capital Expenditure and Expected Expenditure, 5625.0

**Figure 1.13: Mining industry capital expenditure by commodity, quarterly**



Notes: Other mining includes non-metallic mineral mining and quarrying and exploration and other mining support services; chart data is in nominal terms

Source: ABS (2016) Private New Capital Expenditure and Expected Expenditure, 5625.0

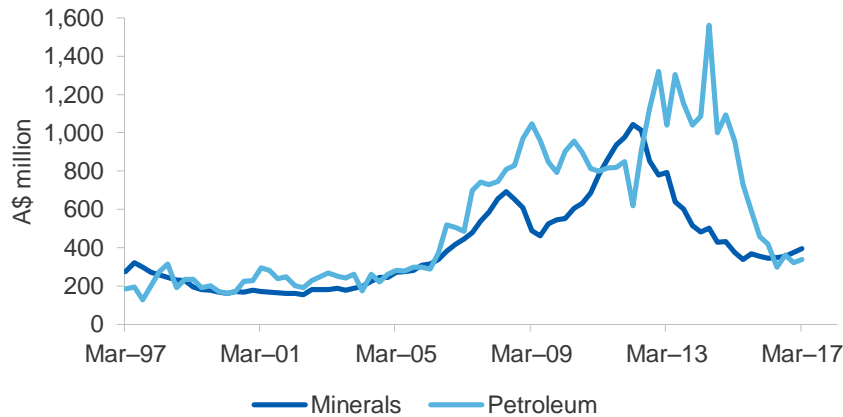


*Mining employment edged up in the June quarter 2017, for the fourth consecutive quarter*

The mining sector employed 235,800 people in the June quarter 2017, up by 0.4 per cent quarter-on-quarter and by 6.0 per cent year-on-year. Mining industry employment has been growing since the September quarter 2016.

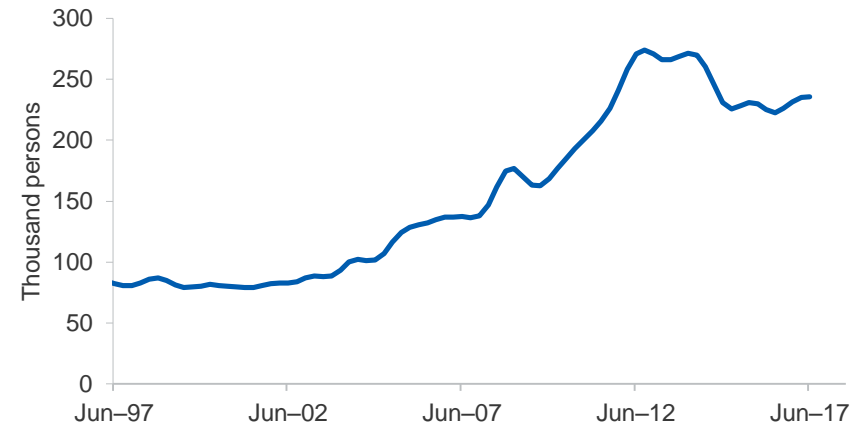
The modest improvement in mining industry employment in recent quarters was supported by the recent jump in minerals (particularly gold) exploration activity. This is evidenced by Figure 1.16, which shows that the growth in mining industry employment is limited to exploration and mining support services and, to a lesser extent, metal ore mining. By contrast, employment in other mining sub-industries have been relatively steady or in decline.

**Figure 1.14: Australia's exploration expenditure, quarterly**



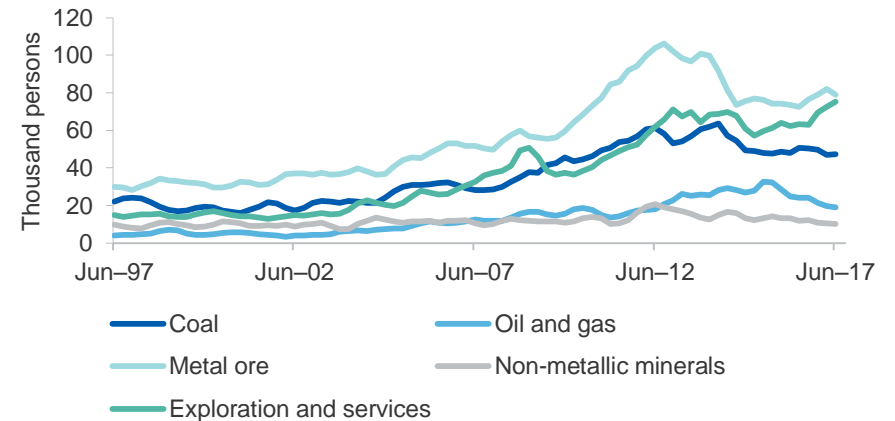
Note: Data is seasonally adjusted  
Source: ABS (2017) Actual and Expected Private Mineral Exploration, 8412.0

**Figure 1.15: Australia's mining industry employment**



Notes: Trend data  
Source: ABS (2017) Labour Force Australia, 6291.0.55.003

**Figure 1.16: Australia's mining industry employment, by sub-industry**



Notes: Data is a three quarter centred moving average of original data; non-metallic minerals includes quarrying; services is 'other mining support services'  
Source: ABS (2017) Labour Force Australia, 6291.0.55.003

**Figure 1.17: Australia's major resources and energy commodity exports, 2016–17 dollars**



Source: ABS (2017) International Trade in Goods and Services, 5368.0; Department of Industry, Innovation and Science (2017)

Notes: f Forecast growth on previous year; EUV is export unit value, which is export values divided by export volumes; values are in 2016–17 dollars

**Table 1.2: Outlook for Australia's resources and energy exports**

	Unit	2015–16	2016–17 s	2017–18 f	2018–19 f	Annual percentage change		
						2016–17 s	2017–18 f	2018–19 f
Resources and energy	A\$m	160,741	205,230	206,776	209,061	27.7	0.8	1.1
– real b	A\$m	163,554	205,230	202,424	200,255	25.5	-1.4	-1.1
Energy	A\$m	59,813	86,664	93,077	96,198	44.9	7.4	3.4
– real b	A\$m	60,860	86,664	91,118	92,146	42.4	5.1	1.1
Resources	A\$m	100,928	118,566	113,699	112,863	17.5	-4.1	-0.7
– real b	A\$m	102,694	118,566	111,305	108,109	15.5	-6.1	-2.9

Notes: **b** In 2016–17 Australian dollars; **s** estimate; **f** forecast

Source: ABS (2017) *International Trade in Goods and Services*, 5368.0; Department of Industry, Innovation and Science (2017)

**Table 1.3: Australia's resources and energy commodity exports, selected commodities**

	Unit	Volume			Value (2016–17 A\$)			
		2016–17 s	2018–19 f	CAGR	Unit	2016–17 s	2018–19 f	CAGR
Alumina	kt	17,938	18,265	0.9	A\$m	6,286	5,846	-3.6
Aluminium	kt	1,353	1,395	1.6	A\$m	3,202	3,174	-0.4
Copper	kt	909	948	2.1	A\$m	7,439	7,804	2.4
Gold	t	326	334	1.1	A\$m	17,467	17,366	-0.3
Iron ore	Mt	825	893	4.0	A\$m	64,502	54,732	-7.9
Nickel	kt	183	201	4.9	A\$m	2,052	2,064	0.3
Zinc	kt	1,026	1,169	6.7	A\$m	2,521	2,652	2.6
LNG	Mt	51	74	19.7	A\$m	22,693	37,046	27.8
Metallurgical coal	Mt	182	197	3.8	A\$m	35,673	26,487	-13.8
Thermal coal	Mt	202	199	-0.8	A\$m	19,150	17,011	-5.7
Oil	kbd	228	292	13.2	A\$m	5,601	8,147	20.6
Uranium	t	7,724	8,450	4.6	A\$m	947	1,003	2.9

Notes: **s** estimate **f** forecast; CAGR is compound annual growth rate in percentage terms from 2016–17 to 2018–19

Source: ABS (2017) *International Trade in Goods and Services*, 5368.0; Department of Industry, Innovation and Science (2017)