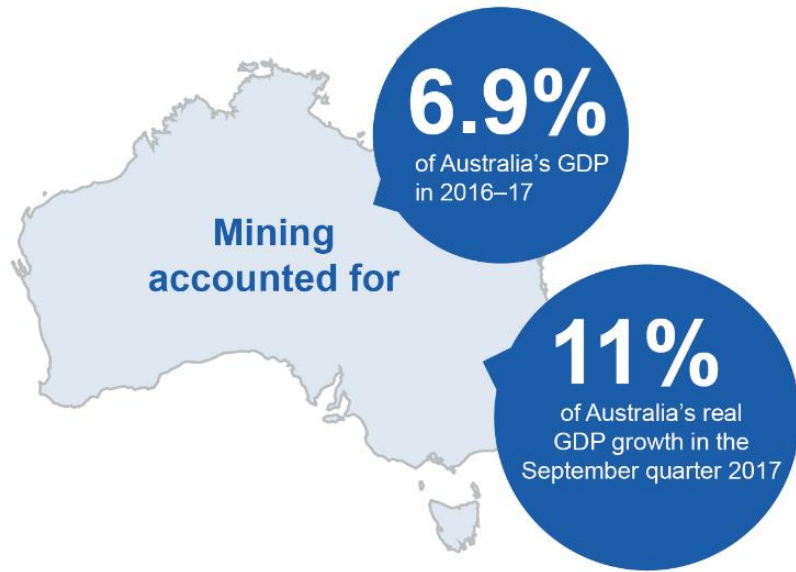
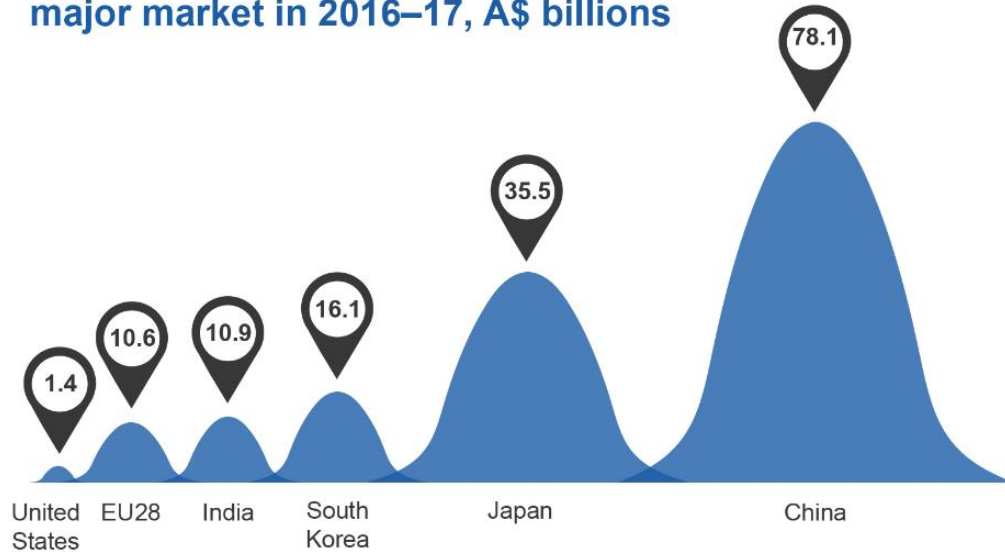


Overview

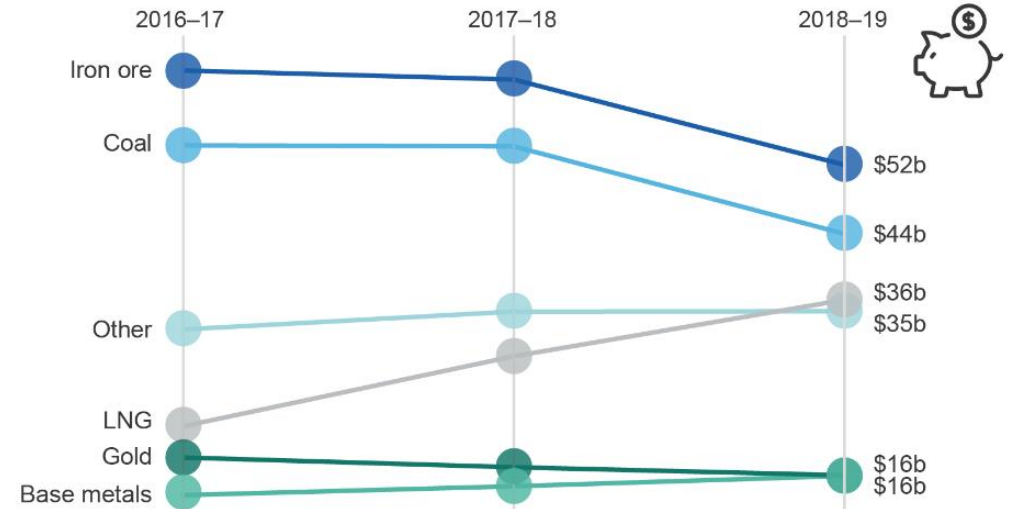
Resources and Energy Quarterly December 2017



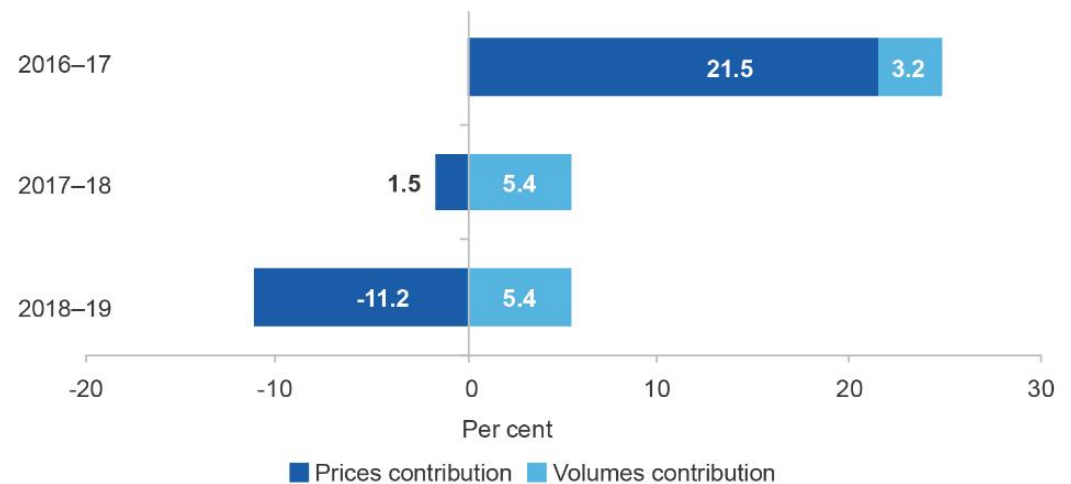
Australia's resources and energy exports by major market in 2016–17, A\$ billions



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



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



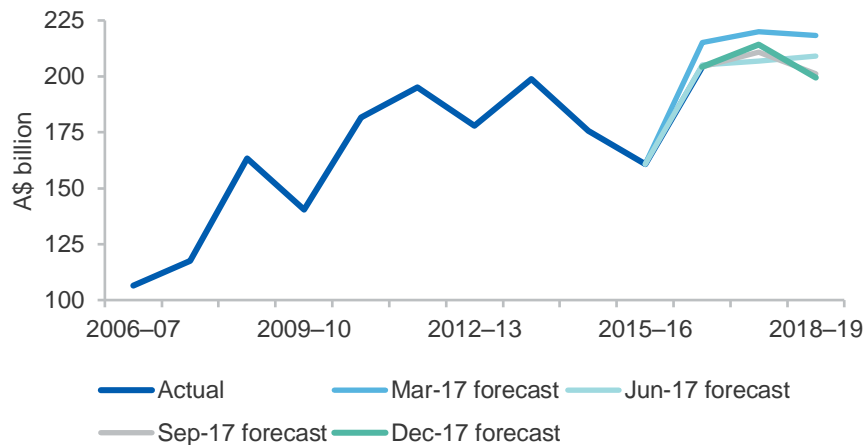
1.1 Revisions to the outlook

Since the September 2017 *Resources and Energy Quarterly*, the forecast value of Australia's resources and energy export earnings in 2017–18 has been revised up by \$3.3 billion (1.6 per cent) to \$214 billion. The outlook for 2018–19 has been revised down slightly, by \$1.4 billion (0.7 per cent) to \$200 billion.

The upward revision for 2017–18 primarily reflects higher than previously forecast iron ore, thermal coal and metallurgical coal prices. The iron ore price in particular has held up much more than previously anticipated. Nonetheless, the outlook still remains for declining iron ore prices into 2018–19. Partially offsetting these upward revisions were minor downward revisions to forecast export earnings for alumina, gold and LNG.

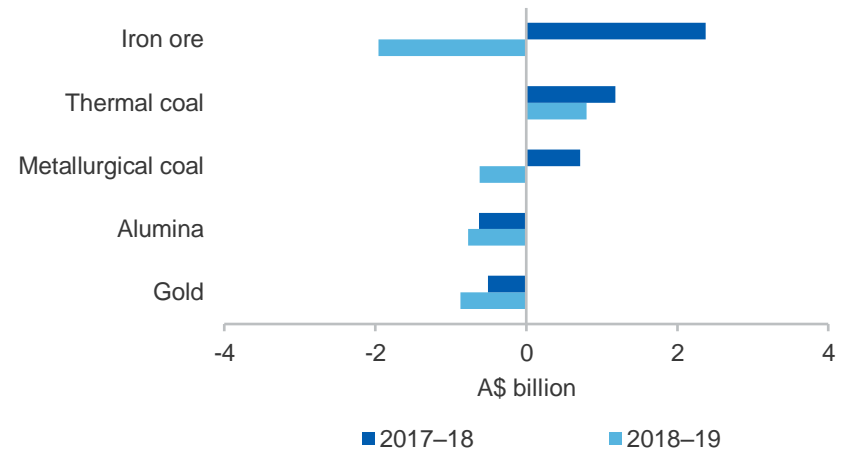
A downward revision to iron ore export volumes in 2018–19 is the primary driver for the downward revision to export earnings. The revision to export volumes reflects new production guidance from iron ore producers.

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, September 2017 to December 2017



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

1.2 Summary

- Global economic growth, industrial production and manufacturing output gathered pace in 2017, indicative of a positive environment for commodity demand.
- Commodity prices, however, continued their downward trend in the December quarter 2017. Prices are forecast to decline by 2.0 per cent in 2017–18 and by a further 10 per cent in 2018–19, largely weighed down by the steel-making commodities iron ore and metallurgical coal. Demand for steel is expected to soften in China, the world's largest steel producing country.
- Australia's resources and energy export volumes are expected to continue to grow at a robust pace over the next two years, driven by LNG and, to a lesser extent, iron ore.

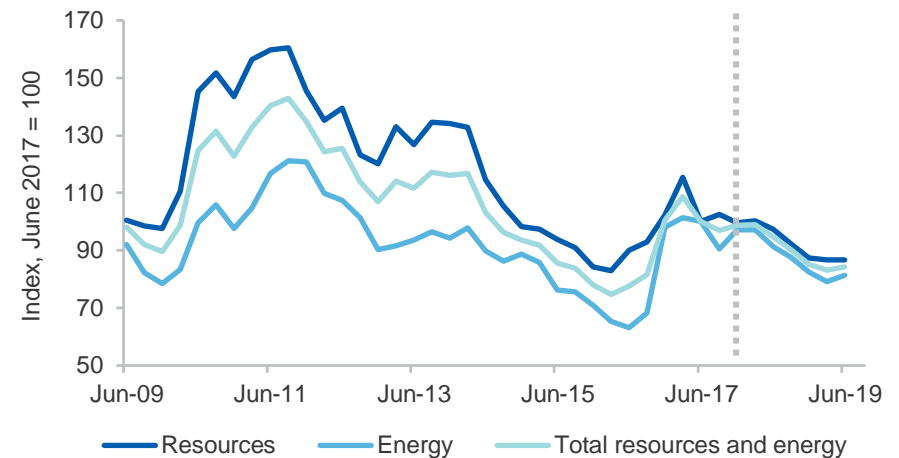
Commodity prices were lifted by a depreciation in the Australian dollar

In Australian dollar terms, the Office of the Chief Economist's (OCE) Resources and Energy Commodity Price Index grew by 1.8 per cent (preliminary estimate) in the December quarter 2017, to be 1.9 per cent lower than a year earlier. The rise in commodities prices in the December quarter was attributed to a depreciation in the Australian dollar — in US dollar terms commodity prices declined by 0.8 per cent.

Prices for energy commodities grew by 7.4 per cent while prices for resources commodities declined by 2.8 per cent, in Australian dollar terms.

A 9.3 per cent drop in the price that Australian iron ore exporters received drove the decline in resources prices, while increases in metallurgical coal, LNG and crude oil export prices boosted energy prices.

Figure 1.3: Resources and energy export prices



Notes: The export price index is based on Australian dollar export unit values (EUVs, export values divided by volumes); the export price index is a Fisher Price Index, which weights each commodity's EUV by its share of total export values

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

Winter steel production cuts in China have resulted in some ongoing volatility in the iron ore price in the December quarter. The iron ore price is forecast to gradually decline over the next two years, as Chinese steel production eases and Australian and Brazilian supplies continue to grow.

Metallurgical coal spot prices rose in the December quarter. Price strength derived from firm demand and concerns over supply, arising mainly from bottlenecks in the Australian export system. The winter curtailment of a significant amount of Chinese steel capacity is expected to take its toll on metallurgical coal prices in early 2018. Rising supply — due to the return of previously idled capacity and new project supply — is forecast to see prices ease over the course of 2018.

Thermal coal spot prices were steady. Prices are expected to ease through 2018 and early 2019, as supply rebounds from recent disruptions and demand moderates.

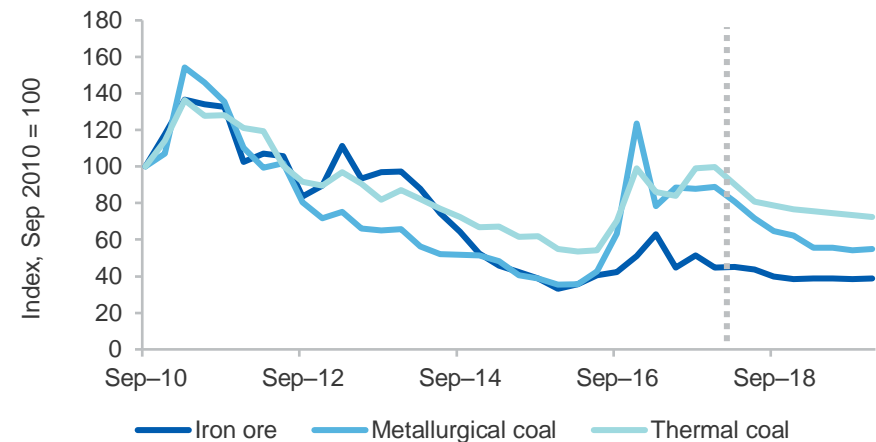
The price received by Australian LNG exporters (which is mostly on oil-linked contracts) has been broadly unchanged in recent months, reflecting relatively flat oil prices in mid-2017. However, LNG spot prices in Asia have risen sharply, driven by unplanned outages at a number of LNG facilities and strong pre-winter buying by key buyers in Asia (particularly China).

Gold prices were also relatively unchanged in the December quarter. A slight rise in the US dollar and real US Treasury bond yields was offset by the impact of persistent safe haven demand. Rising real US Treasury bond yields are expected to weigh on gold prices over the next two years, with investor caution over the outlook for the global economy boosting safe haven demand.

Base metal prices continued to increase in the December quarter and in some cases appear to be in a mini-boom. In particular, zinc prices are now the highest they have been since 2007, aluminium is the highest it has been since early 2012, copper is the highest since 2014 and nickel the highest since 2015. Strong growth in global industrial production — particularly the manufacturing of stainless steel, vehicles, aluminium-based packaging — and infrastructure development, particularly in China, has boosted demand for base metals.

The two year outlook for base metals prices is mixed. Aluminium prices are forecast to increase as the Chinese authorities extend their air pollution controls, thus dampening output in the world's largest aluminium producer. Nickel is forecast to be relatively stable, while zinc and copper prices are forecast to decline slightly due to new supply coming online.

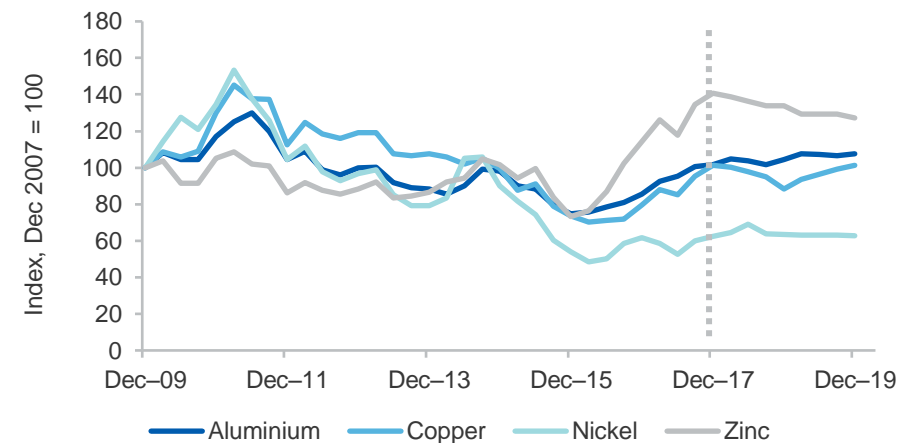
Figure 1.4: Bulk commodities spot prices



Notes: Prices are in US dollars, and are the international benchmark prices

Source: Bloomberg (2017)

Figure 1.5: Base metals spot prices



Notes: Prices are in US dollars, and are the international benchmark prices

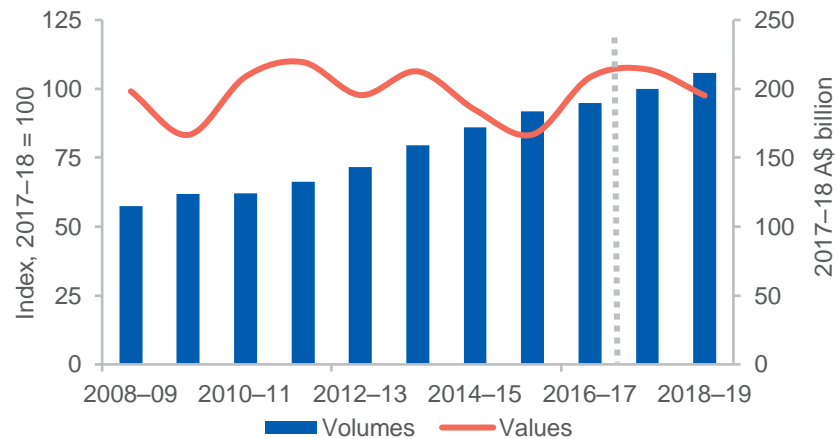
Source: Bloomberg (2017) London Metals Exchange

Australia's export values to reach record high in 2017–18

The OCE's Resources and Energy Export Values Index (preliminary estimate) declined by 0.5 per cent year-on-year in the December quarter 2017. This was due to a 1.9 per cent drop in prices that more than offset a 1.2 per cent increase in volumes. Nonetheless, export values are forecast to grow by 4.9 per cent in 2017–18, to reach \$214 billion. This would represent a record high, in nominal terms.

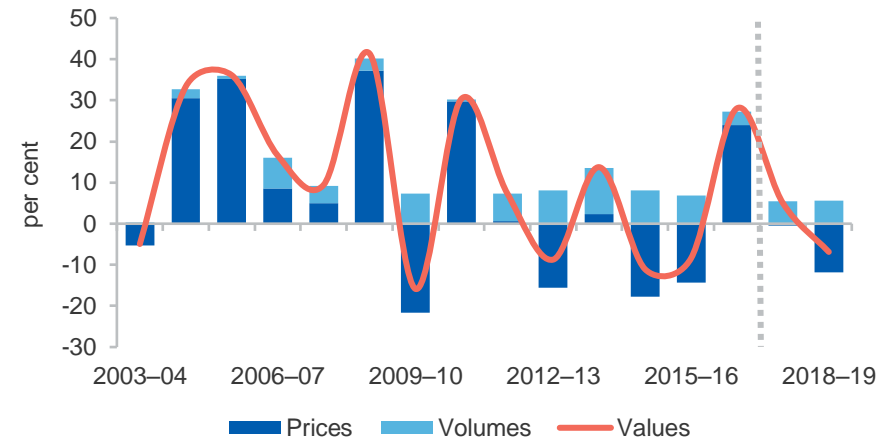
In 2018–19, an expected 12 per cent drop in prices is forecast to more than offset a solid 5.8 per cent increase in export volumes. As a result, export values are forecast to decline by 6.7 per cent.

Figure 1.6: 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 1.7: 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

Export volumes to grow, driven by LNG and iron ore

The OCE's Resources and Energy Export Volumes Index (preliminary estimate) increased by 1.2 per cent year-on-year in the December quarter 2017, to reach a new record high. Export volumes are forecast to continue to grow over the outlook period, by 5.4 per cent in 2017–18 and by 5.8 per cent in 2018–19.

Export volumes in the December quarter were largely boosted by continued rapid growth in LNG exports, which increased by 21 per cent year-on-year. Increased production at Gorgon propelled LNG exports higher. Over the next two years, the completion of the three remaining LNG projects currently under construction — Wheatstone, Ichthys and Prelude — will also underpin resources and energy export volumes growth.

Iron ore also supported growth in overall resources and energy export volumes in the December quarter, rising by 4.2 per cent year-on-year. The pace of growth in iron ore exports volumes is forecast to be 6.2 per cent in 2017–18, before moderating to 1.6 per cent in 2018–19. Ongoing

productivity improvements and new additions to capacity will underpin the growth in iron ore exports volumes. This will be despite moderating steel production (and therefore iron ore demand) in Australia's largest export destination for iron ore — China. Australia's major iron ore suppliers are highly cost competitive and are expected to displace higher cost and lower quality Chinese mining operations.

Metallurgical coal export volumes may have grown to equal their highest level on record in the December quarter, and are forecast to remain steady in 2018–19. The potential for industrial action by miners at the Appin mine and rail workers in the Hunter Valley, as well as wet conditions in Queensland stemming from La Niña pose risks to the outlook for metallurgical coal.

Thermal coal export volumes are forecast to increase modestly in the next two years. Output is expected to be boosted by the ongoing expansions at Rolleston and at a significant number of mines in the NSW Hunter Valley region, including Ravensworth. Industrial action may also affect thermal coal production volumes.

Exports of gold and base metals, which have been declining in recent years, are forecast to return to growth. New productive capacity has been incentivised by a somewhat more supportive price environment in recent quarters. In particular, copper exports, which took a 12 per cent hit in 2016–17 are forecast to grow by 10 per cent in 2018–19, largely due to the expected completion of expansion works at BHP's Olympic Dam. Zinc exports dropped by a third in 2016–17 and are expected to grow by 18 per cent in 2018–19. The closure of MMG's Century mine in 2015 had a big impact on production volumes, but the recent surge in zinc prices has accelerated efforts to bring new capacity online.

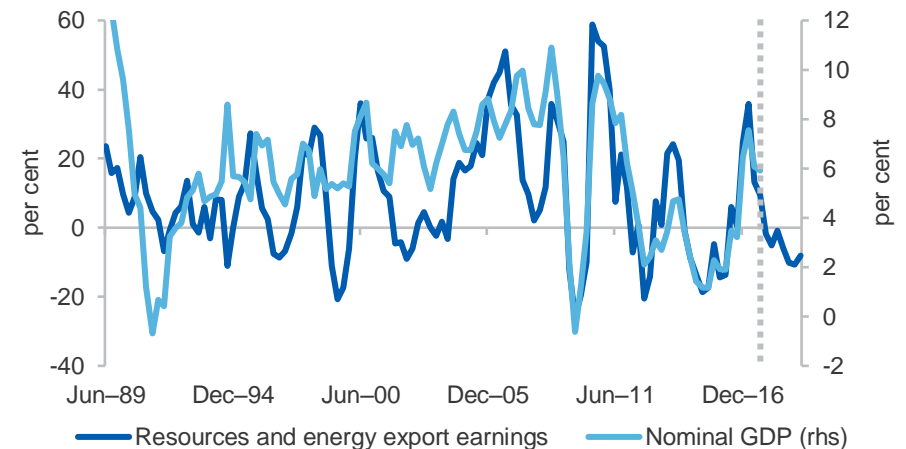
Mining industry continues to support overall economic growth

Australia's Gross Domestic Product (GDP) grew by 0.6 per cent in the September quarter 2017, with mining industry value-added growing by 1.1 per cent. The mining industry directly accounted for 11 per cent of the growth in Australia's GDP in the quarter.

Oil and gas extraction and iron ore mining have been the largest contributors to mining industry value-added growth in the last two years, propelled by growing export volumes. In the case of oil and gas extraction, the contribution of rapidly growing export volumes has been partially offset by declining investment (from a high base). In the coming few years, it is likely that slowing exports growth, coupled with continued investment declines, will see a declining contribution from the oil and gas sector to Australia's GDP growth. Nonetheless, the absolute value of oil and gas's contribution to Australia's economy will remain high for many years to come.

The contribution of mining services (particularly exploration services) to GDP is expected to grow in the coming quarters, as a more supportive price environment (for gold and base metals) incentivises exploration activity.

Figure 1.8: Australia's nominal GDP vs resources and energy export earnings, year-on-year change



Source: ABS (2017) National Accounts, 5206.0; International Trade in Goods and Services, 5368.0; Department of Industry, Innovation and Science (2017)

Mining industry investment expected to continue to decline

Real investment in Australia's mining industry was steady in the September quarter 2017, following twelve quarters of consecutive declines. Nonetheless, mining companies are expecting declines in nominal investment in the remainder of 2017–18. Mining investment is expected to decline by 31 per cent in 2017–18, to reach its lowest level in ten years.

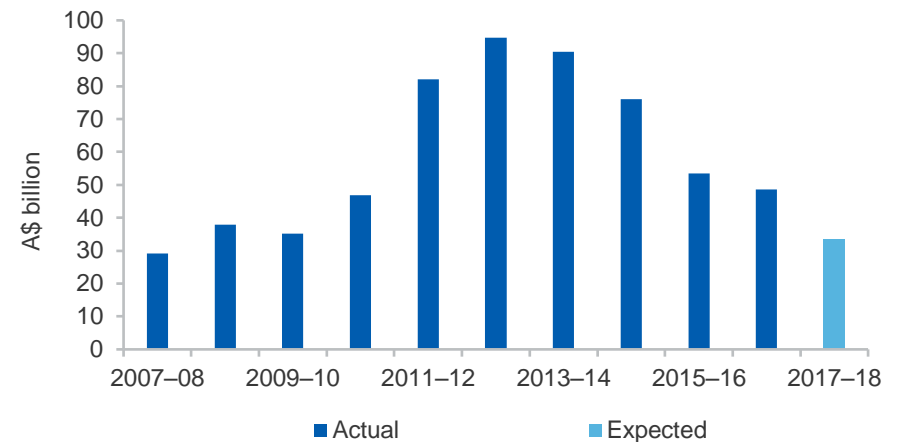
The decline in mining industry investment is consistent with the findings in the special chapter of this report, which provides an overview of the *Resources and Energy Major Projects*. Although timing can differ between the ABS and OCE surveys on mining industry investment — depending on when investment actually occurs versus when it is announced — both point to continued declines in mining investment activity in the short term. However, with the slight uptick in projects that have been publicly announced or under feasibility, as well as increased exploration activity, it is likely that mining investment is close to bottoming out beyond 2017–18.

Oil and gas investment remained the driver of declining mining investment in the September quarter, falling by 17 per cent year-on-year. This was partially offset by a 23 per cent increase in coal mining investment, while metal ore mining investment was relatively steady. Coal mining investment has now grown (year-on-year) for two consecutive quarters, following declines in every preceding quarter since March 2013.

The rapid decline in oil and gas investment in recent years reflects completion of some huge projects. In particular, the US\$54 billion Gorgon LNG project was completed recently. With the completion of the three remaining LNG projects — Wheatstone, Ichthys, and Prelude — in 2018, oil and gas investment in Australia is expected to continue to decline in the short term, and weigh on overall mining investment.

For a more detailed discussion on mining projects and exploration activity, refer to the chapter on Resources and Energy Major Projects (*Chapter 15*).

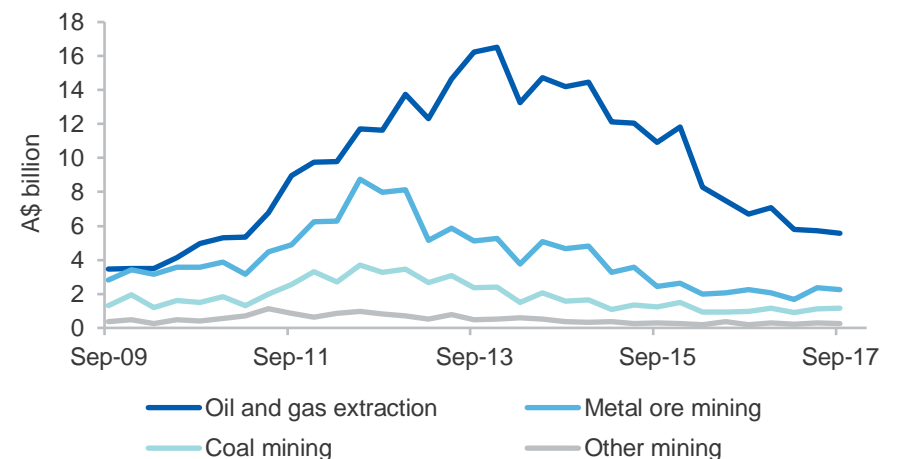
Figure 1.9: Mining industry capital expenditure, fiscal year



Notes: Chart data is in nominal terms

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

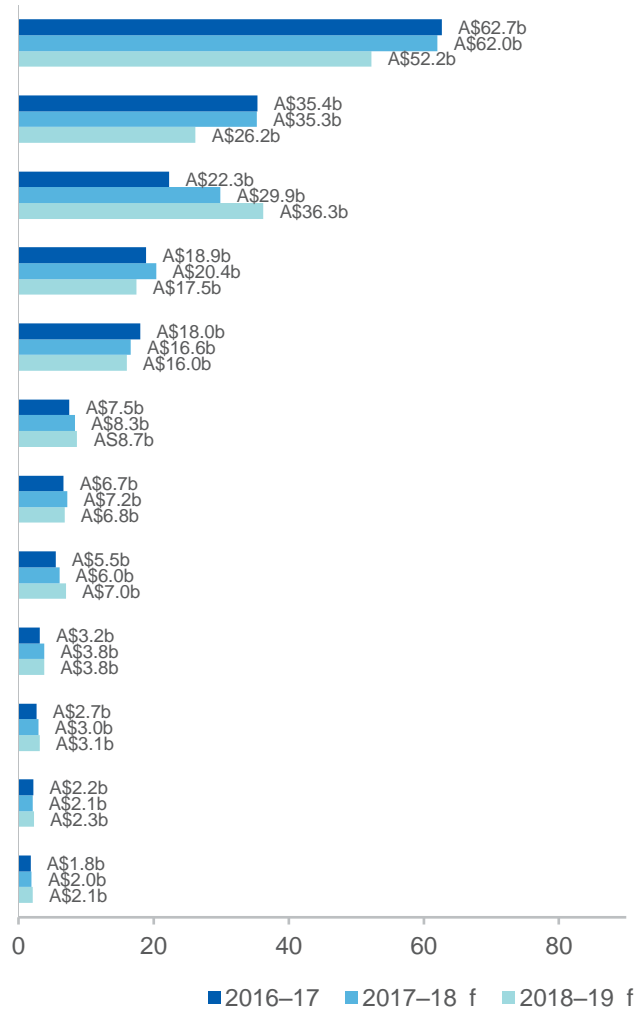
Figure 1.10: Mining industry capital expenditure by commodity, quarterly



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 (2017) Private New Capital Expenditure and Expected Expenditure, 5625.0

Figure 1.11: Australia's major resources and energy commodity exports



	2017-18 f			2018-19 f		
	volume	EUV	value	volume	EUV	value
Iron ore	▲	▼	▼	▲	▼	▼
	6	-7	-1	2	-17	-16
Metallurgical coal	▲	▼	→	→	▼	▼
	8	-8	0	0	-26	-26
LNG	▲	▲	▲	▲	→	▲
	21	11	34	21	0	21
Thermal coal	▲	▲	▲	▼	▼	▼
	1	6	8	-1	-14	-14
Gold	▼	▼	▼	▲	▼	▼
	-5	-3	-8	3	-6	-4
Copper	▼	▲	▲	▲	▼	▲
	-2	12	11	6	-2	4
Alumina	▼	▲	▲	▼	▼	▼
	-1	9	8	-2	-3	-5
Crude oil	▲	▲	▲	▲	▼	▲
	4	6	10	17	-1	16
Aluminium	▲	▲	▲	▼	▲	→
	7	12	20	-1	2	0
Zinc	▲	▲	▲	▲	▼	▲
	2	9	11	18	-12	4
Nickel	▼	→	▼	▲	▲	▲
	-6	0	-5	8	1	9
Lead	▲	→	▲	▲	▼	▲
	9	0	10	13	-4	9

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

Table 1.1: Outlook for Australia's resources and energy exports

	Unit	Annual percentage change						
		2015–16	2016–17	2017–18 f	2018–19 f	2016–17	2017–18 f	2018–19 f
Resources and energy	A\$m	160,767	204,117	214,112	199,768	27.0	4.9	-6.7
– real b	A\$m	166,878	208,318	214,112	195,110	24.8	2.8	-8.9
Energy	A\$m	59,791	85,349	95,218	90,890	42.7	11.6	-4.5
– real b	A\$m	62,063	87,106	95,218	88,770	40.3	9.3	-6.8

Notes: **b** In 2017–18 Australian dollars; **f** forecast.

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

Table 1.2: Australia's resources and energy commodity exports, selected commodities

	Volume				Value (2017–18 A\$m)			
	unit	2016–17	2018–19 f	CAGR	unit	2016–17	2018–19 f	CAGR
Alumina	kt	18,230	17,717	-1.4	A\$m	6,655	6,825	1.3
Aluminium	kt	1,329	1,400	2.6	A\$m	3,165	3,806	9.7
Copper	kt	921	994	3.9	A\$m	7,540	8,680	7.3
Gold	t	334	325	-1.3	A\$m	18,013	16,010	-5.7
Iron ore	Mt	818	883	3.9	A\$m	62,689	52,231	-8.7
Nickel	kt	175	178	0.7	A\$m	2,199	2,270	1.6
Zinc	kt	1,008	1,212	9.7	A\$m	2,688	3,118	7.7
LNG	Mt	52	77	21.2	A\$m	22,299	36,392	27.7
Metallurgical coal	Mt	177	193	4.2	A\$m	35,363	26,213	-13.9
Thermal coal	Mt	202	203	0.4	A\$m	18,903	17,492	-3.8
Oil	kbd	221	269	10.5	A\$m	5,476	7,008	13.1
Uranium	t	7,081	7,100	0.1	A\$m	596	635	3.2

Notes: **f** forecast; CAGR is compound annual growth rate in percentage terms from 2016–17 to 2017–18

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