



ECONOMICS OF MINING

The challenges faced by the mining sector in South Africa continue unabated. Since the recession and financial crisis of 2008, the mining sector has experienced six year-on-year reductions in its percentage contribution to GDP.

After what seemed to be an improvement in 2015 (3.9% growth), the industry's contribution to GDP decreased by 4.7% in 2016. The sector's share of GDP declined from 7.7% in 2015 to 7.3% in 2016, the lowest since 2006 (6.4%).

A number of factors explain the decrease, including costs, low commodity prices and uncertainty emanating from the domestic policy environment. These factors posed challenges for some major mines in their efforts to remain profitable. As in 2015, many platinum and gold mines operated at a loss at some point during the year. The implementation of Section 54s (mine safety stoppages) by the DMR resulted in severe revenue losses.

The domestic policy environment deteriorated further and markedly in March and April 2017 due to the cabinet reshuffle that included the firing of Finance Minister Pravin Gordhan and the consequent downgrading of SA's sovereign debt rating. The downgrade will raise the cost of capital, increasing government and private borrowing costs, increasing the portion of government revenue that has to be allocated to covering debt service costs - thus crowding out other key government programmes, weakening the currency, raising inflation and, ultimately, affecting investment, growth and employment creation.

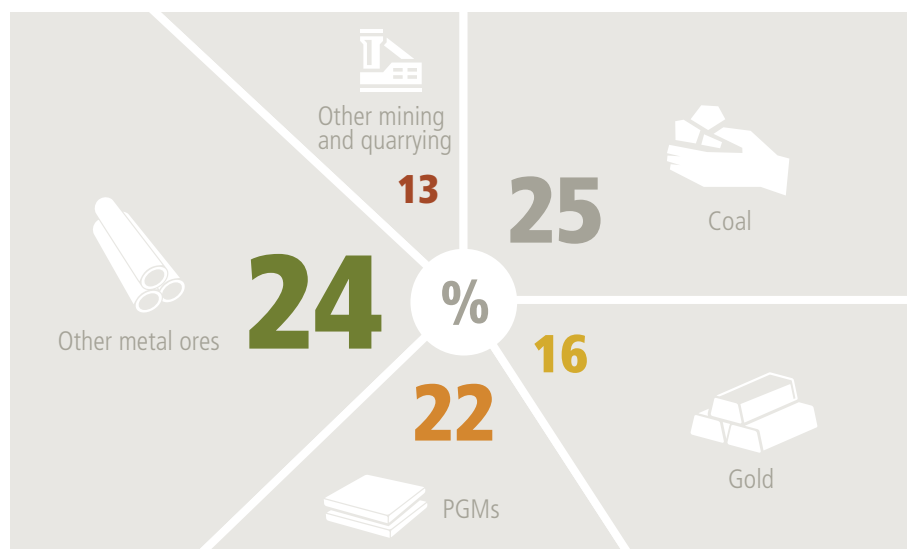
The mining industry continues to play a significant role in the country's development. This goes beyond direct expenditure on goods, services and employment. The mining industry is also a significant foreign-exchange earner, which makes it possible for the country to service its international debt obligations and to import foreign technology, so important for today's economic growth. Preliminary figures for 2016 indicate that total mineral exports amounted to R221.5 billion of the total merchandise exports of R1.1 trillion or 20.1%.

South African mining GDP increased to R304 billion in 2016 from R284 billion in 2015 in actual (or nominal) rand value. The largest contributors to mining GDP were the coal, PGMs and gold sectors, which contributed 25%, 22% and 16%, respectively.



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**Contribution to mining GDP
by sector – 2016**

- Coal
- Gold
- PGMs
- Other metal ores
- Other mining and quarrying

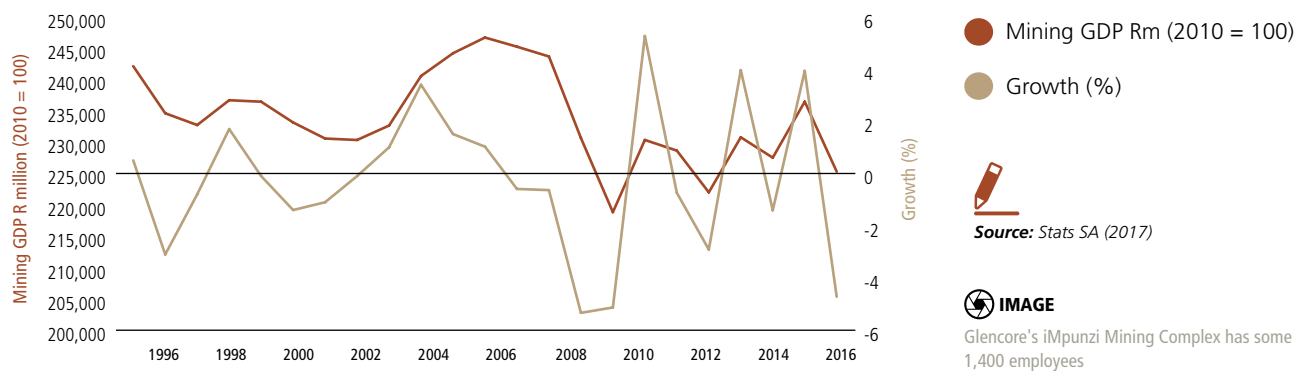


Source: Stats SA (2017)

ECONOMICS OF MINING continued

The impact of the increasingly unstable international and domestic environment in which mining operates is harshly illustrated by the fluctuations in the sector's GDP performance in recent times – at least since 2007 when there have been regular contractions in the industry's total economic activity.

Annual South African mining GDP fluctuations



Economics of mining continued

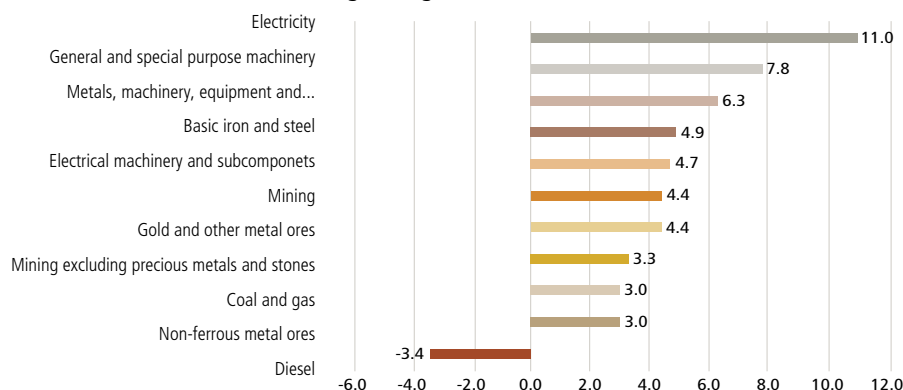
The mining sector's profitability is dependent on the selling prices of its commodities, mostly in international markets over which it has no control, and input costs incurred in the production of its commodities. Total production is estimated to have been R570 billion in 2016, with labour costs absorbing around 26% and intermediary costs 47% of the total. The biggest intermediary input cost drivers are petroleum and other chemicals (9%); machinery and equipment (+6%); electricity, gas and steam (6%); wholesale and retail trade (6%); and transport and storage (50%). On average, intermediary costs have increased annually by 12.3% in the last 10 years and by 8.2% since 2000. Average labour unit costs increased by 13.2% a year over the last 10 years and by about 10% over the last six years. These are averages calculated from national data for the sector, which will differ for every commodity group and for every mine within each commodity group.

Administered prices make up about 20% of the consumer price index and more than 12% of the production price index. Diesel and electricity costs tend to dominate the list of cost drivers. Some 80% of energy consumption in the primary sector including mining is diesel-based. It is hoped that as the National Treasury reviews the Diesel Fuel Tax Refund System (DFTRS), the benefits enjoyed by the mining sector will not be withdrawn – but instead be escalated – to improve the competitiveness of an already shrinking industry.¹

¹ The National Treasury has published a paper regarding the Diesel Fuel Tax Refund for public comment by 1 May 2017. Currently, companies meeting a specified threshold in the mining sector enjoy relief in the form of a refund pegged at 40% of the Fuel Levy and at 100% of the Road Accident Fund (RAF) Levy.

KEY COST DRIVERS IN MINING - AVERAGE ANNUAL RATE OF INCREASE IN COSTS 2013-2016

Producer Price Index (PPI) (% Average change, 2013 – 2016)



The mining sector
contributed 7.3% of GDP in 2016



Source: Stats SA (2017)

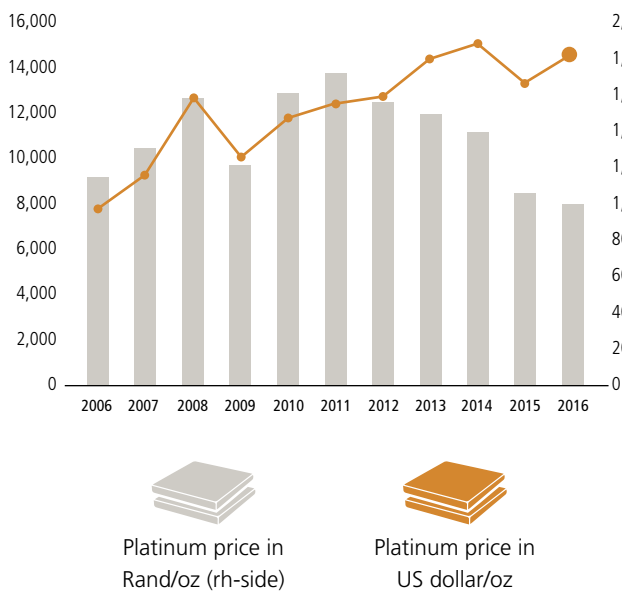
The sector paid R11.1 billion in corporate taxes in 2015, which improved further to an estimated R12.5 billion in 2016 according to National Treasury. The sector also paid R3.7 billion in royalties in 2015 and R6.3 billion in 2016. Dividend payments dropped from R7.026 billion in 2015 to an estimated R5.953 billion in 2016.

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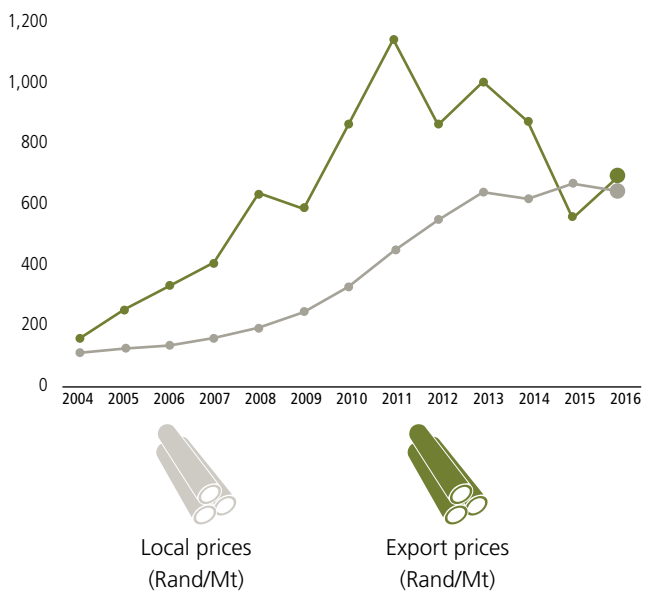
GLOBAL COMMODITY PRICES

In 2016, the price trends for minerals were mixed. In dollar terms, platinum prices fell to an average of \$992/oz in 2016 from \$1,053/oz the previous year. On the other hand, rand platinum prices were up from R13,310/oz in 2015 to R14,622/oz in 2016. Gold prices increased in rand and dollar terms. In rand terms, local iron-ore prices decreased slightly to R626/t from R650/t. Average export prices for iron ore increased by 25.2% to R671/t in 2016. Coal export prices also fell to R615/t in 2016 from R678/t. However, the average local coal prices increased by 4.6% in 2016 to R308/t. The combined impact of rising commodity prices and a depreciated rand against the US dollar seemed to save the day for some industries.

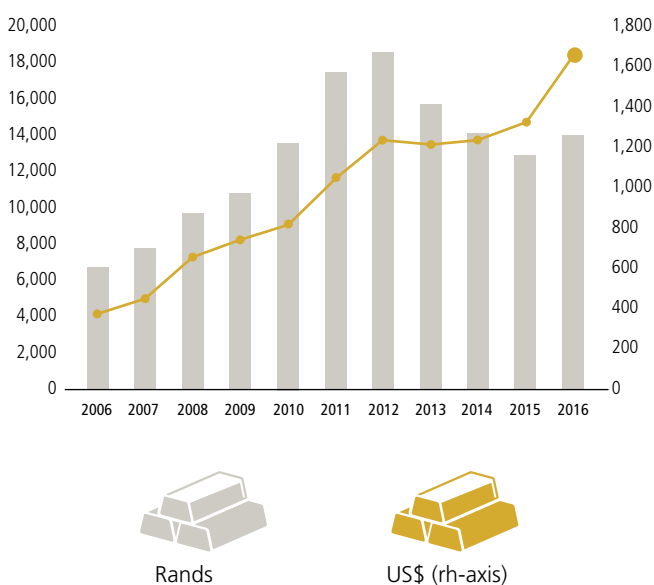
Platinum price (annual average), US\$/oz and r/oz



Iron ore prices (Rands/t)



Gold price per ounce



Price of bituminous coal (Rands/t)

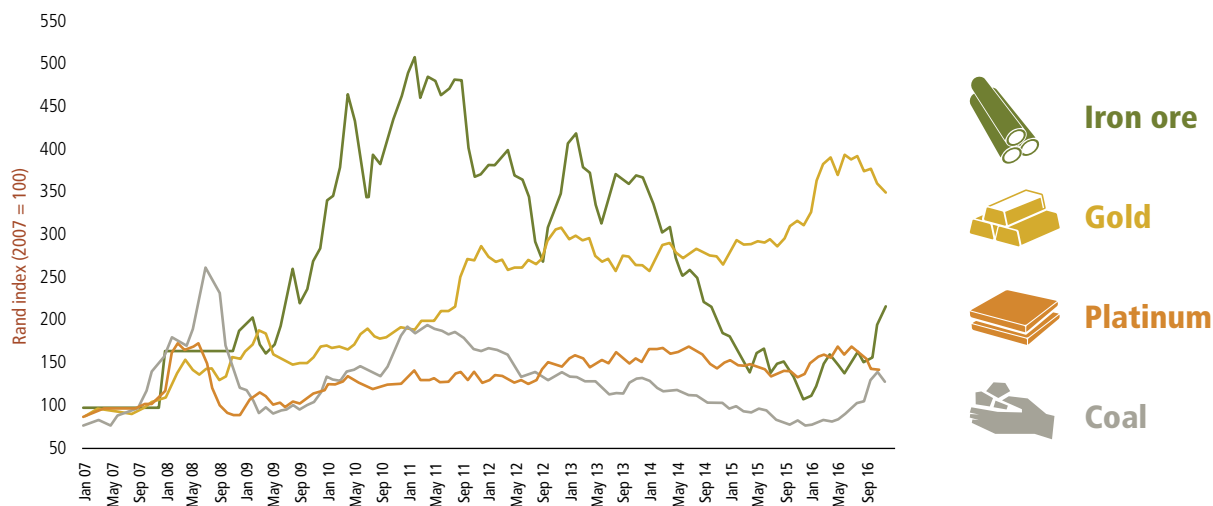


*2016 data not yet available

Economics of mining continued

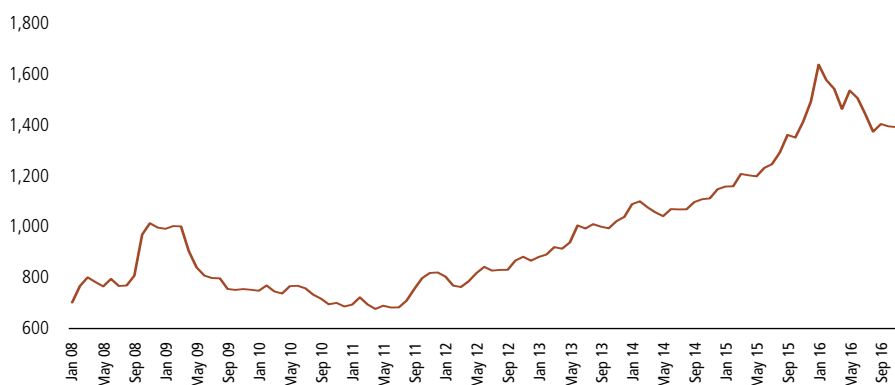
The following graph illustrates the diversity of commodity prices in rands from January 2007 to September 2016.

Rand commodity prices on an index basis (2007 = 100)



The rand depreciated against the dollar from an average of R12.74 in 2015 to R14.78 in 2016. While this is good for the country's exports, persistent and dramatic depreciation in the domestic currency has a price-raising effect which eventually filters into higher input costs (approximately 20% of intermediary inputs are imported), and higher cost-of-living expenses raising pressure for higher wages.

Rand/US dollar exchange rate



The mining sector continued to provide significant employment in South Africa. Total employment for 2016 is estimated at 455,109 people, 5% lower than in 2015. Households of people employed in the mining sector enjoy a relatively high standard of living as wages and salaries are generally higher than the economy-wide average.

R12.5
billion

paid
by the sector in corporate
taxes in 2016

ECONOMICS OF MINING continued

A further estimated 1,000,000 employment opportunities are supported indirectly by industry suppliers and society as a whole. This means that more than 7.5 million people are dependent on mining (if dependency ratios of about five people per worker are assumed).

Median monthly earnings of employees by industry for 2010 – 2015*

	2010	2011	2012	2013	2014	2015
Agriculture	1,295	1,300	1,495	1,733	2,153	2,231
Mining	5,000	5,800	6,000	6,000	7,000	7,500
Manufacturing	3,250	3,500	3,500	3,672	3,900	3,800
Utilities	6,000	6,000	6,000	8,666	7,000	7,500
Construction	2,437	2,600	2,600	2,800	2,816	3,000
Trade	2,505	2,800	3,000	3,000	3,033	3,100
Transport	3,500	3,600	3,800	3,900	4,000	4,000
Finance	3,501	4,333	4,000	4,000	4,000	4,000
Services	6,000	6,000	6,500	6,000	5,000	5,000
Private households	1,000	1,200	1,200	1,300	1,400	1,500
Total	2,900	3,000	3,115	3,033	3,033	3,100

Source: Stats SA (2017)

*2016 data not yet available

Number of employees and earnings – 2016

Commodity	Total employed	Total employee earnings (R)	Average annual earnings per employee (R)
Gold	116,152	28,731,310,905	247,359,59
PGMs	172,124	45,876,264,317	266,530,32
Diamonds	17,242	4,769,875,581	276,642,82
Chrome	15,700	4,207,698,490	268,006,27
Iron ore	15,994	5,878,117,325	367,520,15
Manganese	7,363	2,117,701,834	287,613,99
Coal	77,189	21,092,894,511	273,262,96
Aggregate and sand	7,508	1,190,424,425	158,554,13
Other	25,837	6,201,371,262	240,019,01
Total mining	455,109	120,065,658,650	263,817,37

Source: Department of Mineral Resources, as at June 2016

The platinum industry is the major employer in mining with over 172,000 people employed in 2016 followed by the gold and coal industries, which employed 116,152 and 77,189 people, respectively.

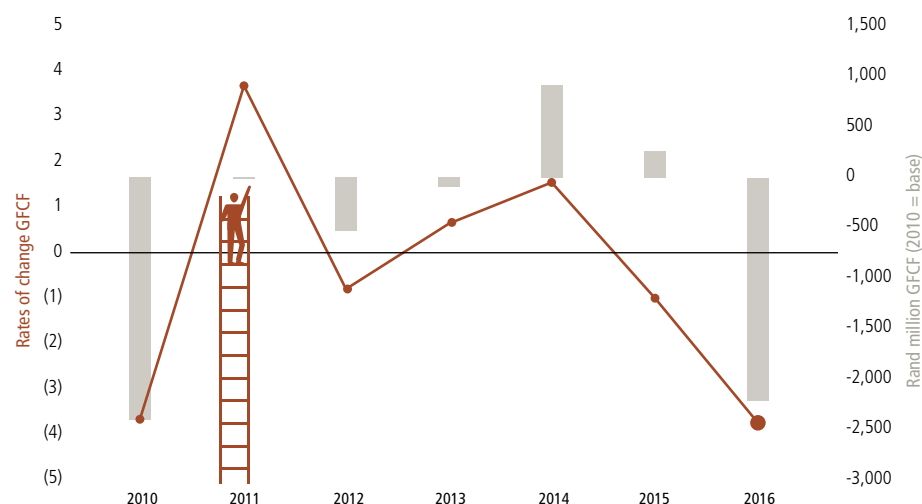


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Economics of mining continued

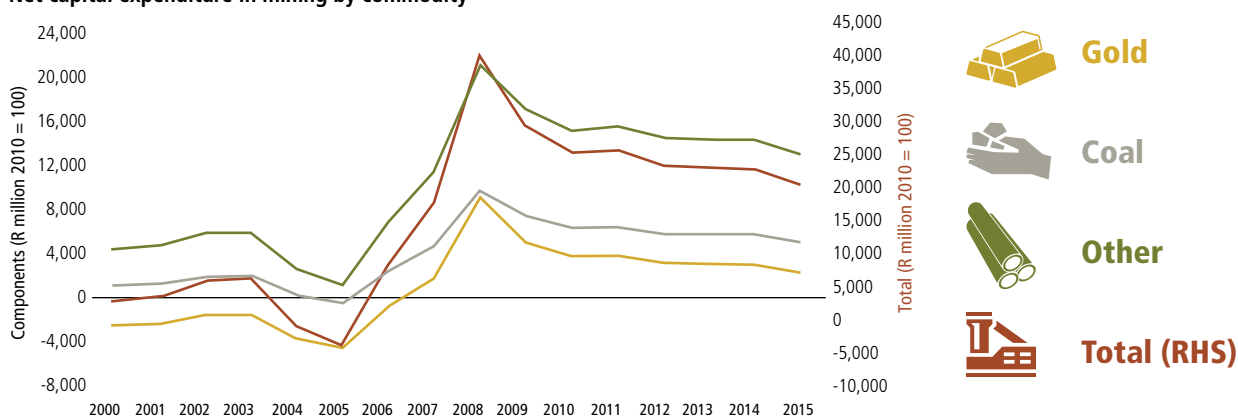
The slump in commodity prices and its domino effect on profitability had a major impact on fixed investment in the sector. Gross fixed capital formation (GFCF) in mining reached a recent peak in 2009, a level not achieved since. The graph shows the trend of GFCF relative to the peak of R65.965 billion; only in 2014 and 2015 was investment slightly higher than in 2009. GFCF was 3.4% lower in 2016 than it was in 2009.

Gross fixed capital formation in mining compared to 2009



Although gross fixed capital investment remained stable, a closer analysis of the data shows that it went mostly into maintenance of mining capacity, and less and less into new capacity investment (see graph on page 30). Other mining in the graph includes platinum mining as a major portion. Although all data was not available at the time of writing, it is estimated that net investment was negative in 2016.

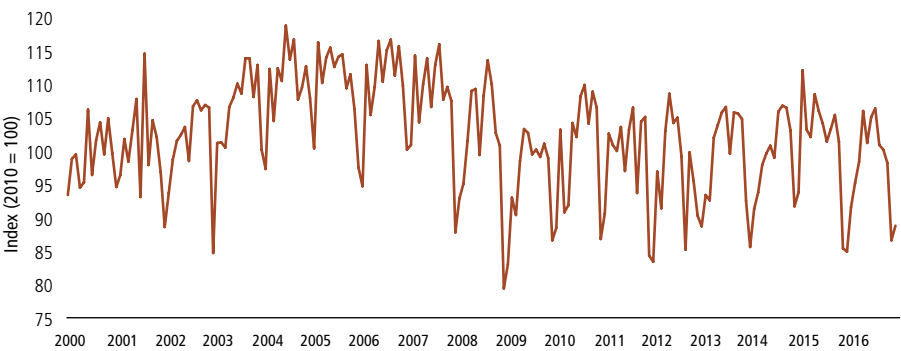
Net capital expenditure in mining by commodity



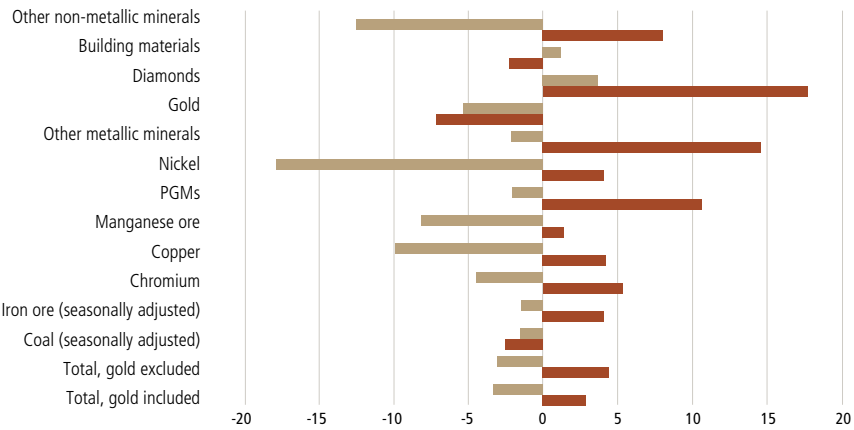
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Lack of investment in the industry is disappointing, especially considering South Africa remains abundantly endowed with natural resources. The country’s gold reserves alone are estimated at 6,000 tonnes, according to the US Geological Survey (2016). This ranks South Africa third in the list of countries with the greatest gold reserves, after Australia (9,500 tonnes) and Russia (8,000 tonnes).

Index of monthly mining production




Rates of change in mining production by commodity




South African
mining GDP in 2016
was R304 billion
in nominal terms

 **Source:** Stats SA (2017)



 12 months to February 2017

 February to January 2017