



# Facts AND FIGURES 2021

Changing mines, changing lives

#MakingMiningMatter



**MINERALS COUNCIL**  
SOUTH AFRICA

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# FOREWORD

As mining plays a significant role in the economy of our nation, it is important for industry data to be freely available so that stakeholders can understand how the sector is performing. In this document Minerals Council Chief Economist Henk Langenhoven and his team use data to showcase our industry, and provide some insight into what the numbers mean for our country and the future of our mining industry.

It is crucial for the Minerals Council to make available credible statistics that paint an accurate picture of the South African mining sector. Statistics allow us to fulfil our mandate as the voice of the mining industry in South Africa. They also allow us to accurately represent the wider impact of mining on the country and help all South Africans to develop a better, more nuanced understanding of the current state of the mining industry.

The Minerals Council's economics discipline plays a key role in gathering the data necessary for us and our members to properly understand the state of the sector and to work to improve its growth.

This *Facts and Figures 2021* publication is a comprehensive statistical reference guide to the South African mining sector.

**“Credible statistics allow us to fulfil our mandate as the voice of the mining industry in South Africa.”**

Anglo American Platinum - Mogalakwena



## The mining sector in 2021



employed  
**458,954**  
people



contributed  
**R78.1 BILLION**  
in taxes to South Africa



contributed  
**R480.9 BILLION**  
to GDP



“Costs continue to increase much faster than headline CPI inflation”



**Roger Baxter**  
CEO – Minerals Council

## MESSAGE FROM THE CEO



We can be  
**proud**

... of a remarkable milestone for our industry: the value of production exceeded R1 trillion for the first time in 2021

The latest edition of the Minerals Council’s *Facts and Figures 2021* book is able to highlight a remarkable milestone for our industry in that the value of production exceeded R1 trillion for the first time in 2021.

This only adds to the pleasure I have in introducing you to the range of data you will find in this annual publication that offers consolidated information about many aspects of our industry.

Representing a more than 30% increase on 2020, it helps explain the significant impact mining has had on easing the extent of South Africa’s fiscal crisis. After the lockdown in March 2020 the industry operated for approximately eight months, and it operated for the whole of 2021 so after the lockdown in March 2020 it operated for more than a full year.

We are also very pleased with the increase in average employment for the year of more than 6,000 people. This marks an almost full recovery of employment lost in 2020, mainly due to COVID-19.

The news, however, is not all positive. You will see the continuation of the trend where costs are increasing much faster than headline consumer price index (CPI)

inflation, this time by a margin of almost four percentage points. And, while the last couple of years are exceptions, input costs have generally increased more rapidly than commodity prices.

Regrettably, and more seriously, we cannot provide positive information on the industry’s safety performance in 2021. There were 74 employees killed in mining accidents, compared with 60 in 2020. As you will see in the book, and elsewhere in Minerals Council communications, this second consecutive annual regression in safety performance measured by numbers of fatalities has prompted a range of programmes and other initiatives to address the worrying situation. Early trends in 2022 suggest that the regression has been halted. However, they also tell us that we have further intensive work to do.

I invite you to study the Facts and Figures book and to use it for your analysis of the industry. And, if you find that any potentially useful data may be missing, please let us know and we will do our best to remedy this in future editions.

**Roger Baxter**  
CEO – Minerals Council South Africa  
2 May 2022

# MINING AT A GLANCE






## HOW MINING CONTRIBUTES TO SOUTH AFRICA

2021 had surprising features, all due to commodity prices rising by nearly 40% in Dollar terms, and nearly 20% in Rand terms, the latter due to the strengthening of the Rand:Dollar exchange rate at 12%.

The physical volume of mining production recovered from the decline of (12.4%) in 2020 to record a growth of 11.6% in 2021. The latter largely reflects the movement in mining gross domestic production of (11.9%) in 2020 and 11.8% in 2021, reaching R481 billion.


The value of mining production reached over R1 trillion for the first time in 2021, an increase of more than 30% on 2020, which was already 14% higher than 2019, also due to the commodity price increases.

# Snapshot 2021

<b>Direct GDP contribution:</b> <b>R480.9 billion</b> <i>2020: R 353.2 billion</i> 	<b>% contribution to GDP:</b> <b>8.7%</b> <i>2020: 7.1%</i> 	<b>Total primary sales:</b> <b>R849.6 billion</b> <i>2020: R609.1 billion</i> 		
<b>Minerals exports:</b> <b>R841.6 billion</b> <i>2020: R577.0 billion</i> 	<b>Employment:</b> <b>458,954</b> <i>2020: 452,866</i> 	<b>Employee earnings:</b> <b>R153.8 billion</b> <i>2020: R151.7 billion</i> 	<b>PAYE by mining employees:</b> <b>R27.0 billion</b> <i>2020: R26 billion</i> 	<b>VAT refunds:</b> <b>R50.4 billion</b> <i>2020: R34.7 billion</i> 
<b>Value added taxes paid:</b> <b>R15.4 billion</b> <i>2020: R15.2 billion</i> 	<b>Corporate income tax paid by the mining sector:</b> <b>R78.1 billion</b> <i>2020: R38.6 billion</i> 	<b>Royalties paid:</b> <b>R27.9 billion</b> <i>2020: R14.2 billion</i> 	<b>Diesel refunds:</b> <b>R1.7 billion</b> <i>2020: R3.1 billion</i> 	<b>Transfer duties paid:</b> <b>R8.0 million</b> <i>2020: R12 million</i> 

## MINING AT A GLANCE continued

The table below summarises the trends and levels



2020

2021

2020

2021

2020

2021

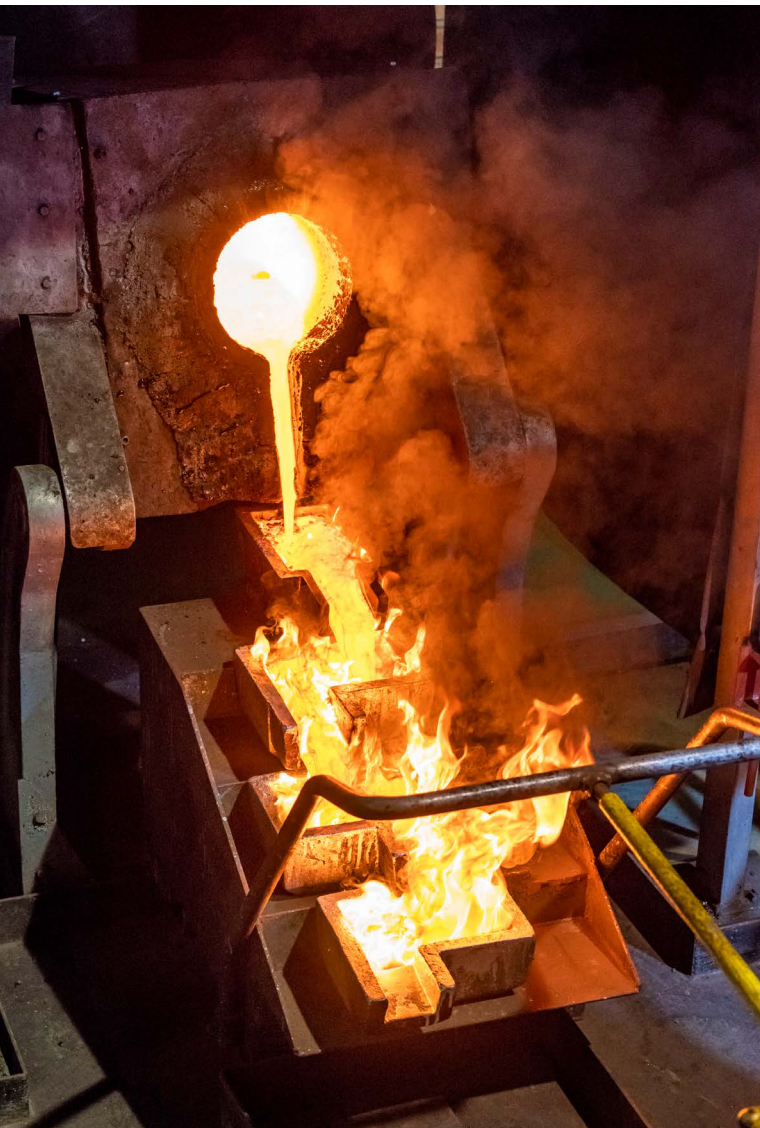
INDICATOR	Rates of change % nominal/actual		Rates of change % Inflation adjusted			
	2020	2021	2020	2021	2020	2021
Rand: Dollar (Rand)	(12.4)	11.6	-	-	R16.50	R14.79
Dollar commodity prices	11.0	36.8	-	-	-	-
Rand commodity prices	24.6	11.6	-	-	-	-
Production (values)	14.2	30.6	(12.8)	27.1	R910.0bn	R1,188.5bn
Intermediate products	-	48.0	-	-	R425.3bn	R632.0bn
Final products	-	48.0	-	-	R484.3bn	R555.9bn
Total sales	10.1	39.0	(13.2)	15.1	R609bn	R846.0bn
Exports	24.8	46.0	-	30.0	R577.0bn	R842.0bn
GDP	12.1	34.8	(11.8)	13.8	R379.8bn	R481.0bn
Compensation for employees	(5.0)	16.7	-	-	R131.7bn	R153.8bn
Employment (no.)	-	-	(4,657)	8,071	452,866	458,954
Employment (no. Q3)	-	-	-	10,461	452,718	464,046
Gross fixed investment	(9.5)	24.3	(13.8)	1.7	R92bn	R114.4bn

Sources: South African Reserve Bank, Statistics South Africa, Minerals Council South Africa



Anglo American Coal – Khwezela

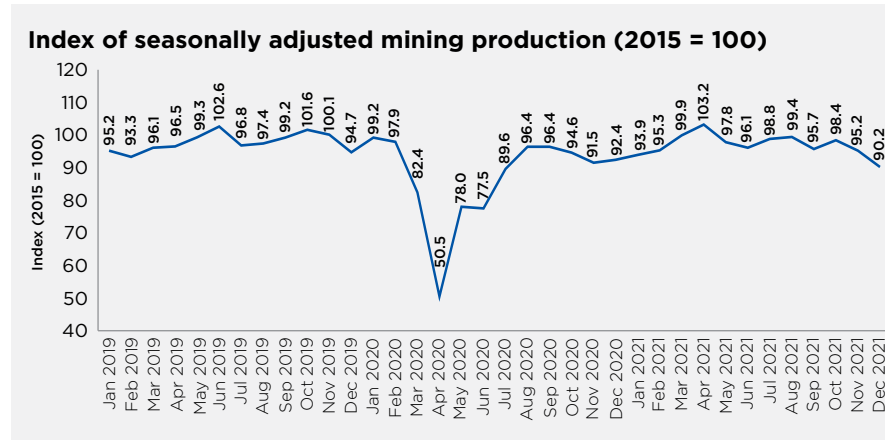
# MINING AT A GLANCE continued



Village Main Reef – Kopanang

## Production data

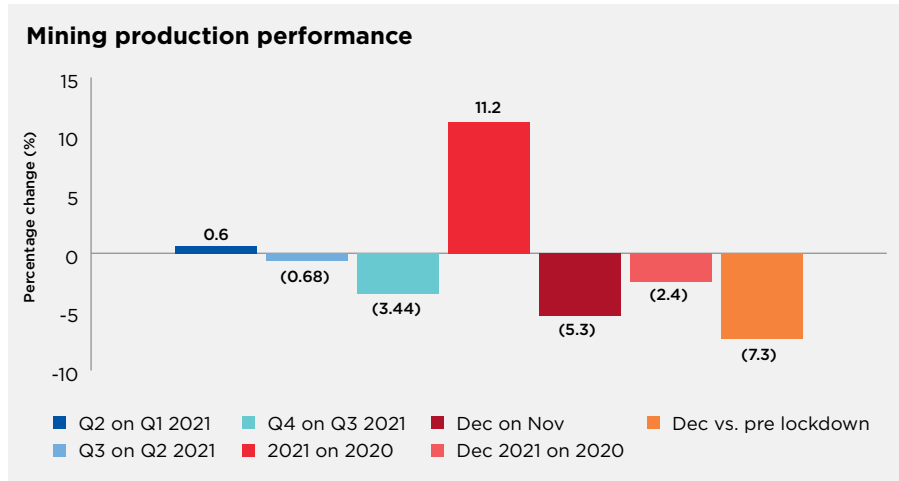
Although production has recovered 11,2% from the low base in 2020, the 20-year index of mining production shows that sector production has not recovered since the 2000/2006 peak and is struggling to maintain 2015 levels (base year = 100).



This is true of the post-lockdown period as well, and recovery seems to have stagnated since April 2021, with production at the end of December 2021 lower than November 2020. Prospects depend on commodity demand and prices holding up, a conducive policy environment and physical infrastructure constraints being eliminated.

Sources: Statistics South Africa, Minerals Council South Africa

Comparing production performances over shorter time horizons clearly shows the lagging outcomes between quarters, and more starkly towards the end of 2021.



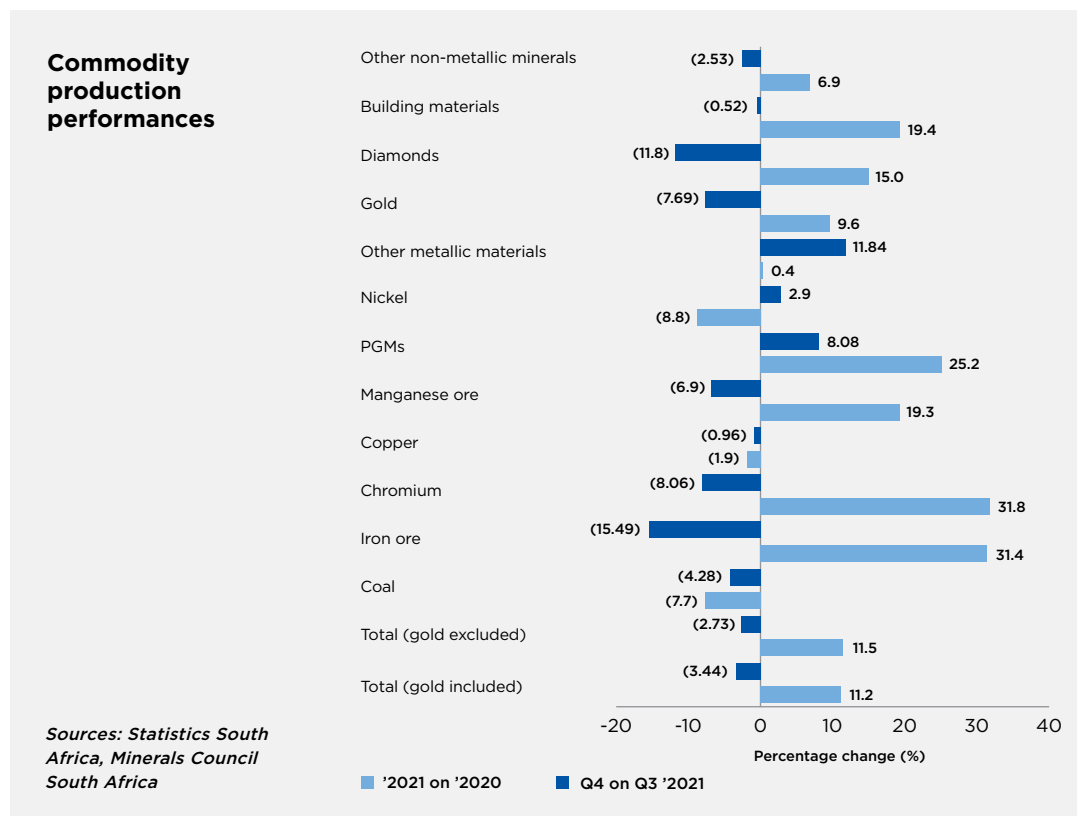
Sources: Statistics South Africa, Minerals Council South Africa

## MINING AT A GLANCE continued

The graph below depicts individual commodity production performances for 2021 (light blue bars), showing the recovery from the restrictions on production during 2020.

The thick blue bars show the concerning widespread trend of weaker fourth quarter production against the third quarter of 2021. As seen in the graph, the December production level was lower than the average monthly performance before the lockdown restrictions.

Each commodity experienced unique circumstances which resulted in these outcomes. However, the compounding uncertainties due to logistical bottlenecks (rail, ports and border posts), unsustainably high electricity tariff increases, as well as unreliable supply and pervasive criminal incidents, all contributed to unfavourable circumstances.



## Commodity price trends

Commodity markets have experienced increased volatility in recent months, and prices were slightly softer than earlier during 2021. This was the result of several factors: the varied impact of the COVID-19 pandemic, energy shortages in Europe and China, coupled with adverse weather in the United States of America, speculation about future Chinese steel making, Chinese authorities' intervention in commodity markets and continued uncertainty about demand and stocks of green commodities. This instability is expected to continue. These trends slowed down commodity price increases towards the end of 2021 (quarter 4 on 3) with 11% Dollar increases and 8.6% Rand increases.

Dollar prices for South African commodities have increased by around 37% during 2021. These trends fluctuated widely amongst the different commodities with coal 81% higher versus gold by only 1.5%. Comparing 2021 with the pre-COVID-19 period, Dollar prices were 56% higher.

## Dollar prices

	Coal US\$/t	Iron ore US\$/t	Gold US\$/t	Platinum US\$/t	Dollar index
Year to Dec 21	119.0	161.1	1,797.4	1,086.7	237.6
Year to Dec 20	65.7	108.9	1,770.3	883.4	173.7
Change year to date %	81.3	47.9	1.5	23.0	36.8
12 months to Dec 21	119.0	161.1	1,797.4	1,086.7	237.6
Change 12 months %	81.3	47.9	1.5	23.0	36.8
Change 1 month %	(13.3)	15.3	(0.1)	(2.0)	(2.7)
Dec on 12 Months	1.7	(31.7)	(0.3)	(12.1)	2.0
Change year-on-year %	42.1	(29.2)	(3.6)	(7.1)	21.0
Dec before lockdown	98.95	(0.92)	22.56	9.95	56.47
12 months average before lockdown	70.12	96.29	1,462.94	885.84	159.10

Sources: World Bank, South African Reserve Bank, Minerals Council South Africa

# MINING AT A GLANCE continued

The Rand:Dollar exchange rate has appreciated about 12% during 2021, with only recent weakness recorded. At the time of writing, it was virtually at the same level as before the lockdown period.

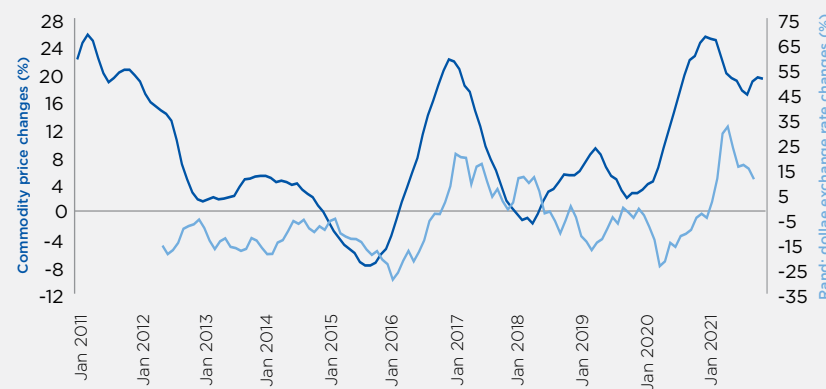
## Rand prices

	Coal US\$/t	Iron ore US\$/t	Gold US\$/t	Platinum US\$/t	Rand index	Exchange rate (ZAR cents:US\$)
Year to Dec 21	1,762.3	2,365.0	26,570.8	16,037.8	350.0	1,479
Year to Dec 20	1,071.3	1,788.0	29,231.0	14,484.7	295.2	1,650
Change year to date %	64.5	32.3	(9.1)	10.7	18.5	11.6
12 months to Dec 21	1,762.3	2,365.0	26,570.8	16,037.8	350.0	1,479
12 months to Dec 20	1,071.3	1,788.0	29,231.0	14,484.7	295.2	1,650
<b>Percentage change (%)</b>						
Change 12 months %	64.5	32.2	(9.1)	10.7	18.5	11.6
Change 1 month %	(11.4)	17.8	2.1	0.2	(3.3)	(2.1)
Dec on 12 Months	9.0	(26.2)	7.1	(5.5)	2.5	(6.9)
Change year-on-year %	51.4	(24.6)	2.7	(1.0)	14.2	(6.2)
Dec before lockdown	109.21	4.33	28.55	15.69	50.56	(6.84)
12 month average before lockdown	1,036.10	1,420.85	21,673.69	13,082.13	246.47	1,478.78

Sources: World Bank, South African Reserve Bank, Minerals Council South Africa

Due to the stronger Rand, only about half (+/-19%) of the Dollar increases have been realised in Rand terms this year (see table above). However, compared to the pre-COVID-19 period, Rand prices are still 50% higher, which largely explains the performance of the mining sector (by value).

## Commodity prices



Sources: World Bank, South African Reserve Bank, Minerals Council South Africa



Tshipi é Ntle Manganese Mining – Tshipi Borwa

# MINING AT A GLANCE continued

## Total commodity sales and exports

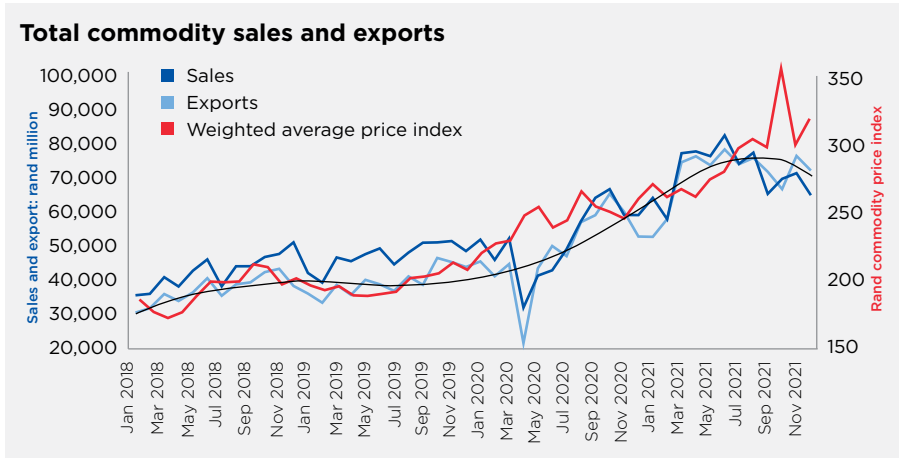
The higher commodity prices inflated the values, but not necessarily the actual physical performances recorded. The table below gives a summary of the trends for 2020 and 2021.

**Commodity prices increased by 24% in 2020 and another nearly 12% in 2021, hence the impact on the inflation adjusted numbers.**

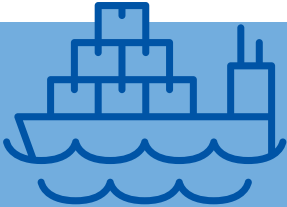
INDICATOR	2020	2021	2020	2021	2020	2021
	Rates of change % nominal/actual		Rates of change % inflation adjusted		Value (R billion) nominal/actual	
Total sales	10.1	39.0	(13.2)	15.1	609.0	846.0
Exports	24.8	46.0	0	30.0	577.0	842.0

Sources: South African Revenue Service, Statistics South Africa

R841.6 billion worth of commodities were exported during 2021, earning the country around US\$55 billion in foreign exchange. The graph alongside shows the patterns over recent times.



Sources: World Bank, South African Reserve Bank, Statistics South Africa, Minerals Council South Africa

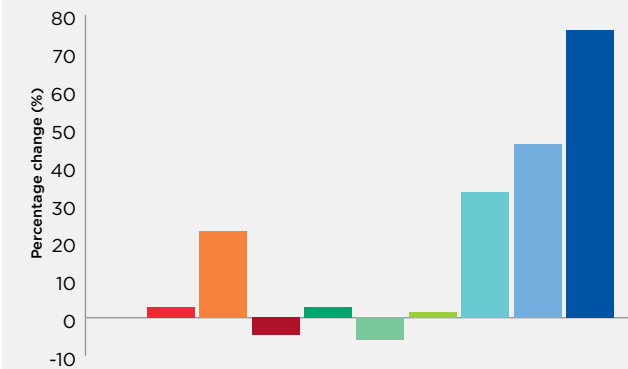


# R841.6 billion

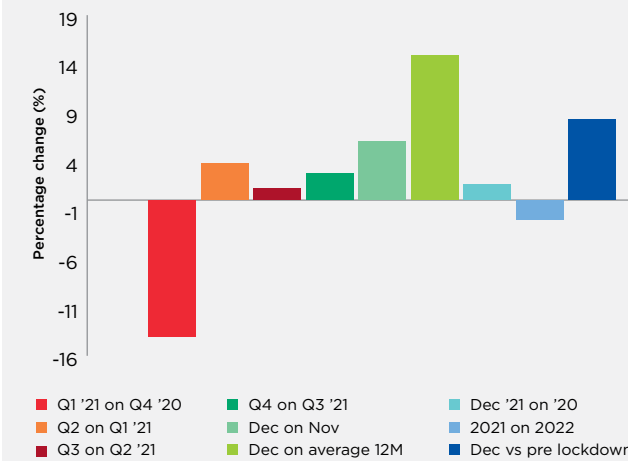
worth of commodities were exported during 2021

Having a closer look at exports shows the contrast between values and volumes exported.

### Export rates of change: values



### Export rates of change: volumes



Sources: South African Revenue Services, Statistics South Africa, Minerals Council South Africa

# MINING AT A GLANCE continued

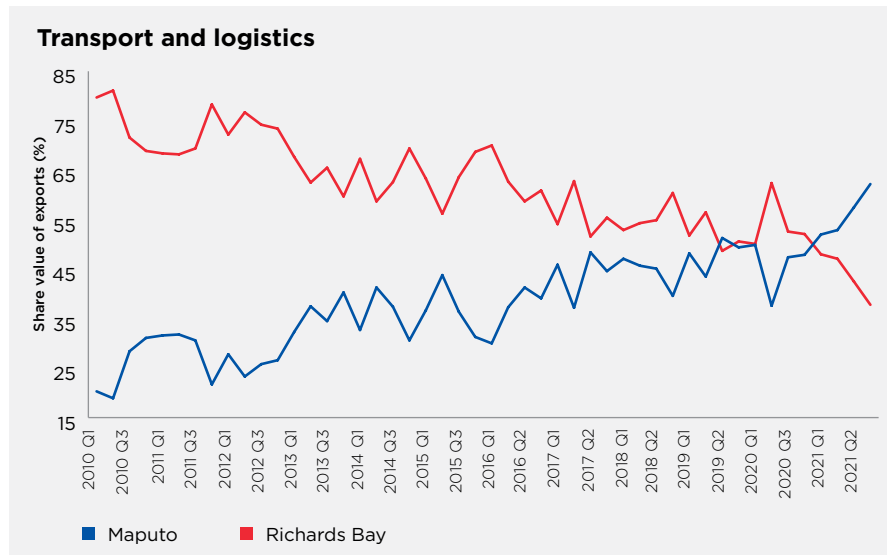
Whereas export values increased over 45% in 2021, total volumes actually declined by about 2%. The short-term comparisons show varied trends towards the end of 2021:

- **Values:** Q4 only 3% better than Q3, but December on November was at 6%, December on the 12-month average only 1.4% higher, but 76% higher than pre-lockdown averages.
- **Volumes:** Q4 3% better than Q3, December on November was at 6%, December on the 12-month average at 15%, and 8% better than pre-lockdown averages.

The constraints around transport, logistics and border posts remain, and are increasingly hampering export volumes. Based on comparisons of average monthly bulk exports

during 2021 and earlier (as far back as 2017), both export tonnages and inflation adjusted values were 6% lower in 2021, despite commodity prices increasing by 61% since 2017. In none of the years since 2016 did exports exceed 15 million tonnes per month, barring 2019. High level talks are continuing with Transnet (ports and rail) to resolve the operational, security and fixed investment backlog issues.

The challenges with transport and logistics are causing dynamic shifts in patterns of cargo flows. For example, cargo is diverted from the port of Richards Bay to Maputo in ever growing volumes. Regarding chrome ore, not only is the choice of harbour outlet changing, but rail is being substituted by road transport. The graph below shows the share of chrome ore shifting from Richards Bay to Maputo over 10 years.



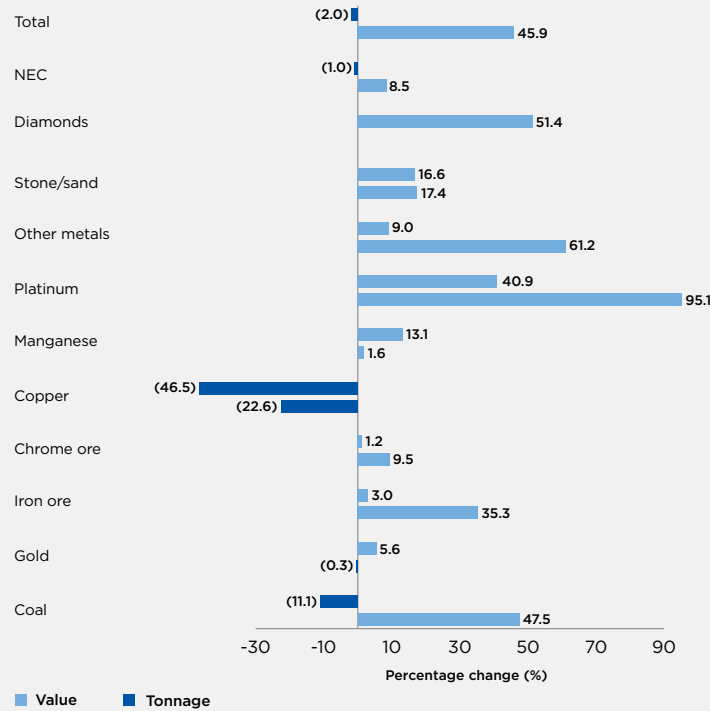
# MINING AT A GLANCE continued

## Variation in export performance by commodity

The impact of the COVID-19 shock and recovery from it were felt quite differently by the various commodities. The previously observed link between physical production and export volumes has now disappeared.

Each commodity has had its own dynamics resulting in these outcomes. The impact of better commodity prices is abundantly clear.

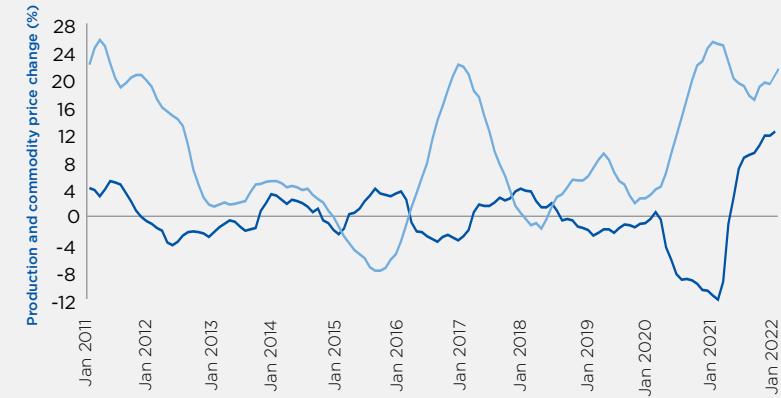
Variation in export performance by commodity (2021 on 2020)



Sources: Statistics South Africa, South African Revenue Services, Minerals Council South Africa



Variation in the weighted average commodity prices and mine production



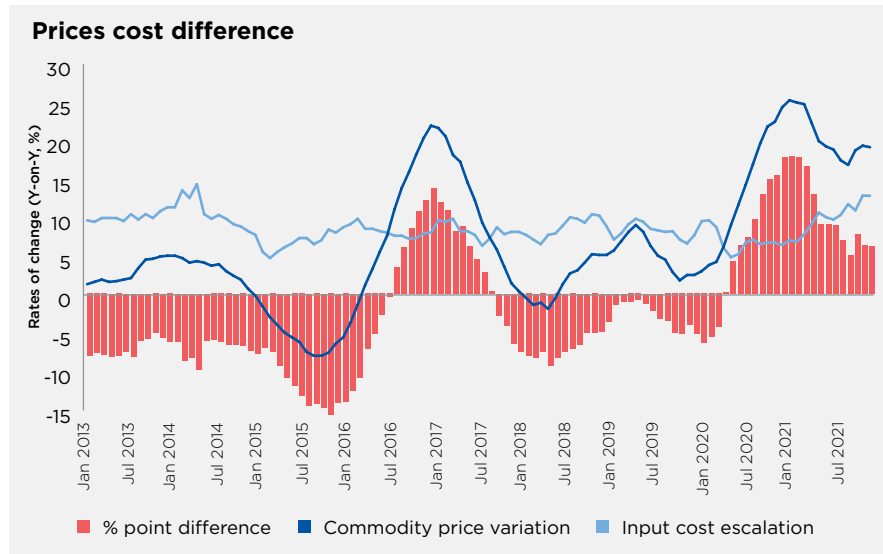
Sources: World Bank, South African Reserve Bank, Statistics South Africa, Minerals Council South Africa

# OVERVIEW OF THE SOUTH AFRICAN MINING INDUSTRY

## Input cost escalation

The latest composite input cost index data became available and, when overlaid on the commodity price movements, the trends are showing a narrowing of the profitability margins.

Commodity prices will not necessarily continue accelerating and costs are climbing domestically. Input costs have been rising at 10% over the last year, and the latest months closer to 12%, which is quite concerning. The only mitigating factor is the low cost base of 2020, but commodity prices have been softening and have become more volatile over the last 12 months.



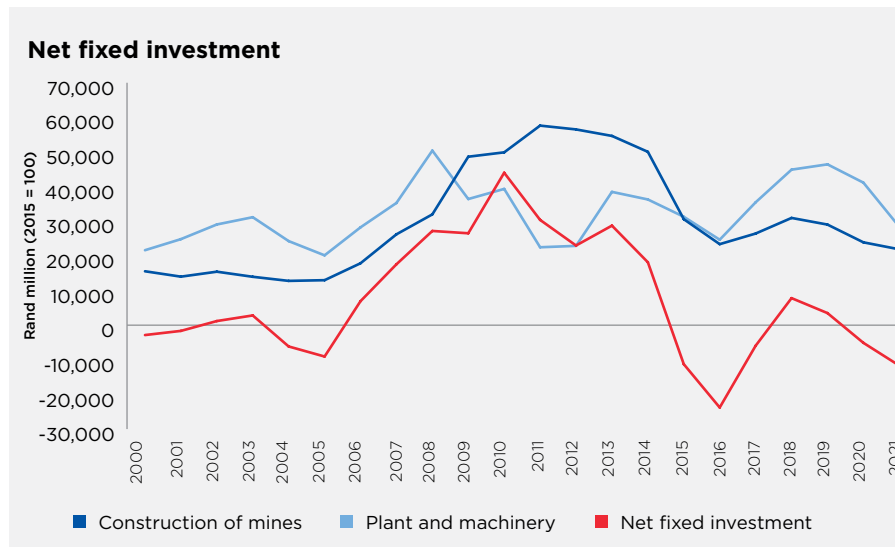
“Input costs have been increasing at 10% over the last year”

Sources: World Bank, South African Reserve Bank, Minerals Council South Africa

## Gross fixed capital formation

Due to the lack of quarterly investment data for the whole sector, only a sample of data up to quarter 3 of 2021 is available. The graph shows an estimate of gross fixed capital investment for the construction of mines and spend on machinery and equipment for 2021 (2015 = 100). In nominal terms gross fixed investment increased by about 14%, but cost escalation negated that. Net fixed investment declined further due to persistently high depreciation of fixed capital assets in the sector.

The graph below contains gross fixed capital formation for mining as reported by the South African Reserve Bank up to 2021.



Sources: Statistics South Africa, South African Reserve Bank, Quantec

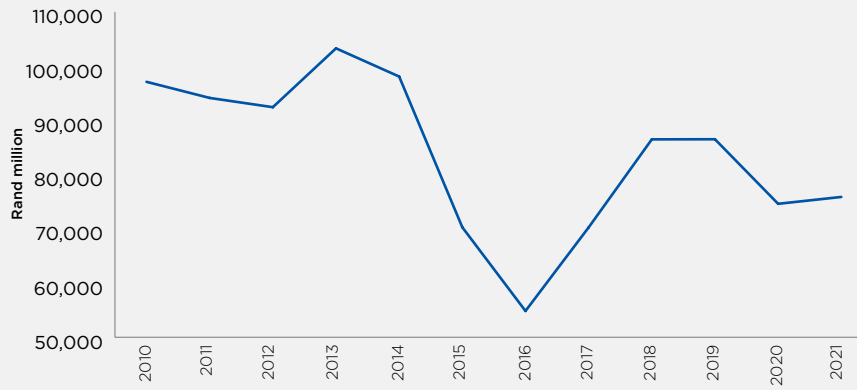


# OVERVIEW OF THE SOUTH AFRICAN MINING INDUSTRY continued

The graph alongside contains gross fixed capital formation for mining as reported by the South African Reserve Bank up to 2021.

Sources: Statistics South Africa, South African Reserve Bank, Quantec

**Gross fixed capital**



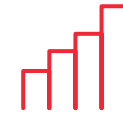
## Summary



The positive impact of rising commodity prices continued to benefit mining performance, but physical volumes of production and exports remain a concern. The longer-term trend is unstable and struggling to break out of its low trajectory.



Exports amounted to R841.6 billion or 48.8% higher than during 2020, tempered by no growth in volumes. Exports were 90% higher (values) and 24% higher (volumes) compared to pre-lockdown 2019. 2021 exports equal Dollar earnings of US\$56.4 billion.



Nominal gross fixed investment grew by an estimated 14%, but cost escalation meant that no real growth was achieved, with real net investment declining further (a trend that started in 2009).



The value of production reached over R1 trillion during 2021, which was a 12% real improvement on 2020.



Transport and logistics (rail, harbour, electricity) constrained export growth to such a degree that volumes were equal to 2017 levels; only in 2019 were 15 million tonnes exported.



Commodity prices kept on improving from 24% in 2020 to 19% in 2021 (Rand terms). Dollar prices rose by 37% but a strengthening exchange rate took some 'shine' of that.



Mining input costs have been rising at an average of 10% and increased to almost 12% towards the end of 2021.



## OVERVIEW OF THE SOUTH AFRICAN MINING INDUSTRY continued

### Structure of the mining industry

The structure of the mining sector has changed over the years. Traditionally it has been capital intensive. Since 2008 the structure of the sector changed fundamentally to become relatively more labour intensive. We can be forgiven for thinking that this was a result of the global financial crisis (GFC) which significantly impacted demand and prices. However, our analysis suggests that the GFC was an added force to an already changing sector. Policy and regulatory constraints seem to explain the decline in the capital-labour ratio, labour productivity, multi-facto productivity and a rise in unit labour costs. This we say because, even as the global economy recovered, these indicators – save for unit labour costs – have generally remained below their pre-GFC levels. Each graph also contains the year in which the various iterations of the Mining Charter were published.

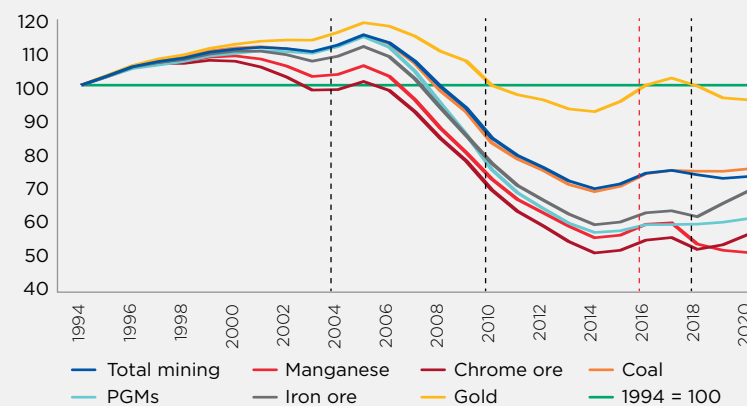


### Capital-labour ratio

The capital-labour ratio is a measure of the amount of capital employed to labour employed. While mining is generally capital intensive, the graph on the right shows that, from 2008 onwards, labour became the dominant production factor employed in the sector when compared to 1994 (1994 = 100). For almost a decade after 1994 the sector remained capital intensive until around 2008. Typically, the older they are, the more mining operations intensify their employment of capital, seeking to gain productivity improvements, something that clearly has not occurred in South Africa. This is attributable to policy uncertainty. Furthermore, as mines get deeper, capital is preferred to labour. Mining companies have allocated capital towards sustaining operations instead of expansion projects, and in the process labour's employment in relation to capital has been increasing. Please note that factor intensity does not imply higher productivity – see the productivity analysis on the following page.

Sectors with a high capital-labour ratio will tend to have higher real

South African mining: Capital-labour ratio (1994 = 100)



Sources: Minerals Council South Africa, Quantec

NB: The vertical broken lines (black) depict the various iterations of Mining Charters (2004, 2010 and 2018). The pink vertical line represents the publication of the Draft 2016 Mining Charter.

wages and vice versa, i.e. a low capital-labour ratio implies lower real wages, even in jurisdictions with a relatively high labour union presence.

The gold industry is an exception as its capital-labour ratio seems to gravitate towards unity, which means that since 1994 it has employed virtually the same amount of capital as labour. Again, this is an anomaly. South African gold mines are among the deepest in the world and, as such, should be more capital intensive – this is not the case. The rest of the sector is relatively more labour intensive than was the case before the period between 1994 and the mid-2000s.

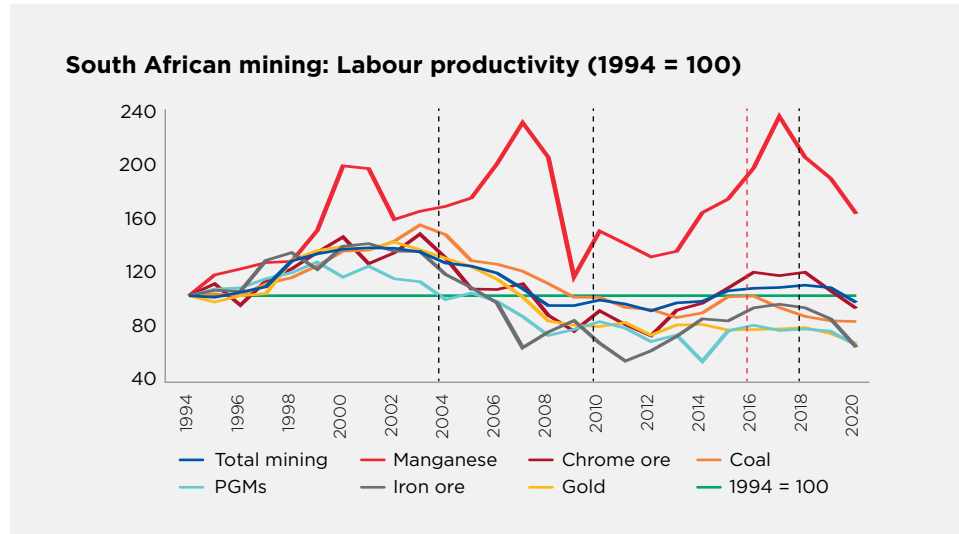
# OVERVIEW OF THE SOUTH AFRICAN MINING INDUSTRY continued

## Labour productivity in the South African mining sector

Labour productivity is an important economic indicator that is closely linked to the economic, sector or industry growth, competitiveness and living standards. It is the amount of output produced (volumes) divided by the number of employees. Labour productivity in the mining sector (blue line) has remained relatively flat since 2008 with productivity in the manganese industry remaining above 1994 levels.

Productivity levels in the PGM and gold industries have also remained flat since 2008 and below 1994 levels, despite the relatively intensive labour in the production process.

*NB: The vertical broken lines (black) depict the various iterations of Mining Charters (2004, 2010 and 2018). The pink vertical line represents the publication of the Draft 2016 Mining Charter.*



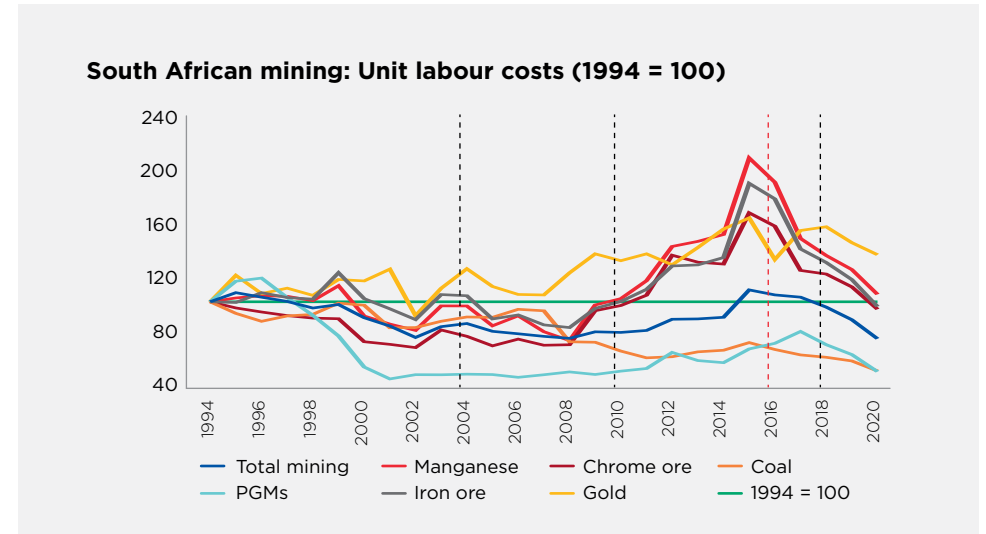
Sources: Minerals Council South Africa, Quantec

## Unit labour costs

Unit labour costs measure the average cost of labour per unit of output. In line with stagnant labour productivity, unit labour costs in the sector have trended lower than they were at the dawn of democracy. However, there are notable deviations in the gold and iron ore industries where unit labour costs have on average been higher than in 1994, even as labour productivity

has failed to keep pace. Unit labour costs in the gold industry have escalated more than labour productivity, a phenomenon that renders the local industry less competitive compared to its global peers.

*NB: The vertical broken lines (black) depict the various iterations of Mining Charters (2004, 2010 and 2018). The pink vertical line represents the publication of the Draft 2016 Mining Charter.*



Sources: Minerals Council South Africa, Quantec

# OVERVIEW OF THE SOUTH AFRICAN MINING INDUSTRY continued

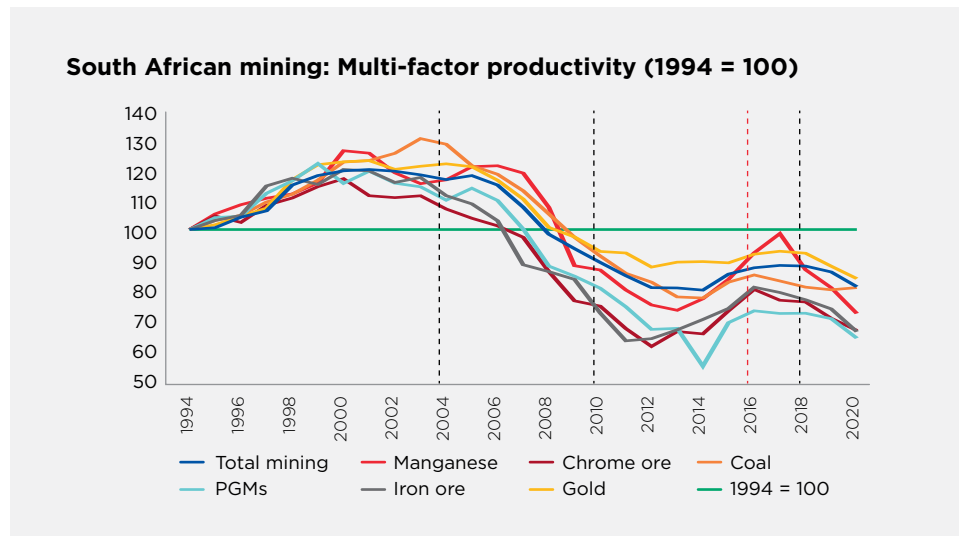
## Multi-factor productivity

Multi-factor productivity or total factor productivity refers to the part of growth in value added terms that is not explained by either labour or capital. Alternatively, it is the part of growth that results from the interaction of labour and capital, and it is also referred to as the part of growth that is explained by technical development or technology. The graph below shows that technology has not played a major role in output growth in the sector. This does not mean that new production methods have not been employed in the sector, but rather that these methods have not had the effect of increased productivity,

perhaps confirming the fact that mining companies are investing to replenish existing capital, compared to investing in order to grow the sector. Policy uncertainty and constraints account for this phenomenon.

Between 2006 and 2009 multi-factor productivity trended below the period 1994 and 2005 with the PGM, gold and chrome ore industries the most affected.

*NB: The vertical broken lines (black) depict the various iterations of Mining Charters (2004, 2010 and 2018). The pink vertical line represents the publication of the Draft 2016 Mining Charter.*



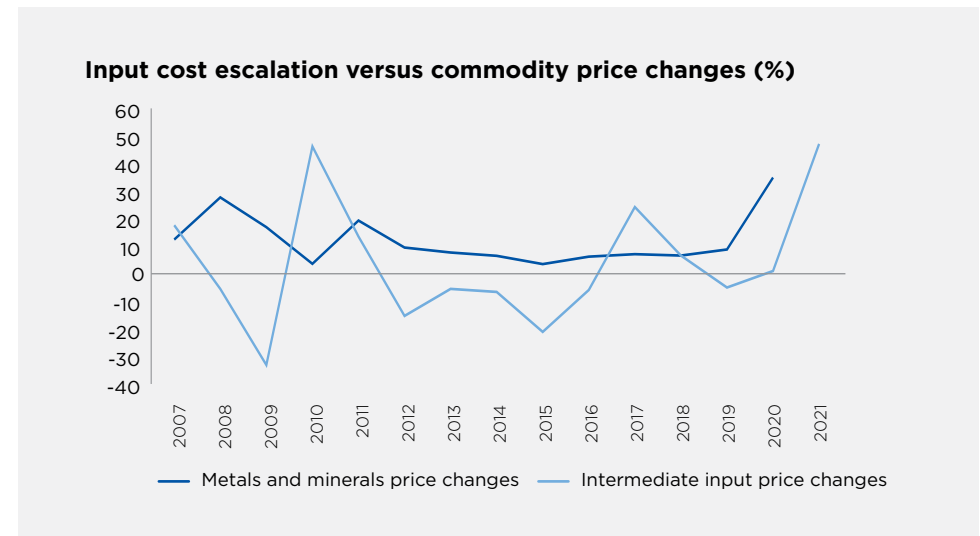
Sources: Minerals Council South Africa, Quantec

## Input costs

The graph below clearly shows the price-taking nature of the mining sector in South Africa. Input cost escalation has historically outpaced increases in commodity prices. Simply put, mineral producers in South Africa cannot transfer cost increases to the final price and, as such, the mining sector must keep on innovating its production methods to remain globally competitive.

From 2015 to 2020 metals and minerals prices have on average declined by 0.2% annually, while intermediate input costs soared by 11.2%. To deal with the increase

in costs, mining companies have had to strike a balance between capital and labour. An important aspect to note is that when commodity prices rise, input costs, quickly catch up and outpace them. In 2020, for example, intermediate input costs went up by 34.9% compared to 1% in metals and minerals prices. In 2021 metals and minerals prices soared by 47.1%.



Sources: Quantec, World Bank, Minerals Council South Africa

## OVERVIEW OF THE SOUTH AFRICAN MINING INDUSTRY continued

### Inventory movements

The table below shows the movements in inventories from raw materials, work in progress, and finished goods. To better understand developments in the mining value chain, consideration will be on the net inventory figures. Between 2020 Q3 and 2021 Q3 there was a huge increase of 416% in net inventories for raw materials, perhaps because of logistical constraints where bulk miners (coal, chrome ore, iron ore and manganese) exported far less than in previous years because of rail and port constraints. For example, the coal industry's exports were 12.8 million tonnes less than the year before, despite higher international prices.

#### Inventories

	2021 Q3	2020 Q3	% change	Four quarters to 2021 Q3	Four quarters to 2020 Q3	% change
<b>Opening</b>						
Raw materials	25,110	21,882	14.75	96,352	89,088	8.15
Work in progress	85,924	55,105	55.93	318,201	197,447	61.16
Finished goods	44,948	40,534	10.89	176,316	145,419	21.25
<b>Closing</b>						
Raw materials	26,316	23,346	12.72	98,783	89,559	10.30
Work in progress	76,815	65,900	16.56	329,314	217,974	51.08
Finished goods	47,909	43,290	10.67	180,397	157,500	14.54
<b>Net</b>						
Raw materials	1,206	1,464	(2.03)	2,431	471	416.14
Work in progress	(9,109)	10,795	(39.36)	11,113	20,527	(45.86)
Finished goods	2,961	2,756	(0.22)	4,081	12,081	(66.22)

Source: Statistics South Africa, Quarterly Financial Surveys, p0044



Further confirming the view that logistical constraints played a major role in the accumulation of raw materials is the significant decline of 45.86% in “work in progress” and 66.22% in “finished goods”. “Work in progress” reflects the amount of raw materials that have been processed. The Quarterly Financial Survey is a sample of mining companies, and not an estimate of the total market movements.

### Changes in inventories

	Mining and quarrying (Current prices)	Mining and quarrying (Constant 2015 price)
	R millions	R millions
31 December 2010	4,039	4,419
31 December 2011	3,986	6,069
31 December 2012	(2,372)	(2,929)
31 December 2013	6,474	4,339
31 December 2014	1,270	(1,662)
31 December 2015	10,951	10,951
31 December 2016	4,480	1,248
31 December 2017	1,923	309
31 December 2018	11,833	9,217
31 December 2019	19,839	13,201
31 December 2020	11,991	4,291

Source: Statistics South Africa GDP publication, p0441

The table above shows changes in inventories, i.e. it is a flow as opposed to a stock table. In real terms the table indicates a modest flow in inventories in the year 2020. This is explained by the fact that 2020 was the peak of the COVID-19 pandemic. Data for 2021 is expected to present huge changes in inventories as economies were opening up because of millions of people having been vaccinated across the globe.

## OVERVIEW OF THE SOUTH AFRICAN MINING INDUSTRY continued

### Total mineral sales

Group	Commodity	Total exports	Local sales	Total sales	Exports as a % of total sales
		R'000	R'000	R'000	%
Gold, PGMs, diamonds and silver	Gold	93,053,603	9,155,869	102,209,471	91.0%
	PGMs	321,271,671	25,253,878	346,525,549	92.7%
	Diamonds	13,210,210	7,928,797	21,139,007	62.5%
	Silver	344,063	119,554	463,617	74.2%
	<b>Sub-total</b>	<b>427,879,547</b>	<b>42,458,097</b>	<b>470,337,644</b>	<b>91.0%</b>
Base minerals	Chrome ore	10,743,835	11,230,705	21,974,540	48.9%
	Copper	2,143,909	601,743	2,745,652	78.1%
	Iron ore	115,680,173	5,101,679	120,781,852	95.8%
	Lead concentrate	842,619	3,664	846,283	99.6%
	Manganese	34,341,810	2,757,122	37,098,932	92.6%
	Nickel	7,290,721	1,872,249	9,162,970	79.6%
	Zinc	7,084,935	-	7,084,935	100.0%
	Coal	63,717,030	86,381,343	150,098,372	42.5%
	Other non-metallic	3,977,193	3,428,913	7,406,106	53.7%
	Miscellaneous	8,380,720	13,715,710	22,096,430	37.9%
<b>Sub-total</b>	<b>254,202,946</b>	<b>125,093,127</b>	<b>379,296,073</b>		
<b>Grand total</b>	<b>682,082,493</b>	<b>167,551,224</b>	<b>849,633,717</b>		

Source: Department of Mineral Resources and Energy



Glencore Coal - Goedgedonden Colliery

## OVERVIEW OF THE SOUTH AFRICAN MINING INDUSTRY continued

### South Africa's contribution to world mineral reserves: 2021

Commodity	Substitutes	unit	South Africa's reserves	World		Locality of major reserves		
				Rank	%	1st	2nd	3rd
Chromium	Chromium has no substitute in stainless steel, the leading end use, or in superalloys	Mt	200,000	1	35.0	Kazakhstan	South Africa	India
Coal	Coal to liquids, power generation, chemicals manufacture	Mt	53,156	6	3.5	USA	Russia	Australia
Copper	Aluminium, titanium, and steel	kt	11,000	11	1.0	Chile	Australia	Peru
Fluorspar (contained CaF)	Synthetic fluorspar could potentially be recovered by the US Department of Energy	kt	41,000	3	13.0	Mexico	China	South Africa
Gold (metal)	Generally, palladium, platinum, and silver may substitute for gold in industrial applications	t	2,700	4	5.1	Australia	USA	Russia
Iron ore	No substitute	Mt	640	11	0.8	Australia	Brazil	Russia
Lead (metal)	Depending on application substitutes include tin, steel, zinc, and plastics	kt	300	Outside the world's top ten	0.3	Australia	China	Russia
Manganese (metal)	No satisfactory substitutes	Mt	520	1	40.0	South Africa	Australia	USA
Nickel	Low-nickel, duplex, or ultrahigh-chromium stainless steels; titanium alloys	Mt	3,700	N/A	0.04	Indonesia	Australia	Brazil
PGMs	Palladium	kt	63,000	1	91.3	South Africa	Russia	Zimbabwe
Phosphate rock, PGMs (contained concentrates)	There are no substitutes for phosphorus in agriculture	kt	1,400,000	6	2.0	Morocco and Western Sahara	China	Algeria
Rare earths	Substitutes are available for many applications but generally are less effective	t	790,000	11	0.7	China	Vietnam	Brazil

## OVERVIEW OF THE SOUTH AFRICAN MINING INDUSTRY continued

### South Africa's contribution to world mineral reserves: 2021 continued

Commodity	Substitutes	unit	South Africa's reserves	World		Locality of major reserves		
				Rank	%	1st	2nd	3rd
Titanium minerals (metals)	Ilmenite, leucocoxene, rutile, slag, and synthetic rutile	Mt	35	5	4.5	Australia	China	India
Uranium (metal, up to US\$US 80/kg U)		t	279,100	6	5.2	Australia	Kazakhstan	Canada
Vanadium (metal)	Manganese, molybdenum, niobium (columbium), titanium, and tungsten	kt	3,500	4	15.9	China	Russia	Australia
Vermiculite	Depending on application, expanded perlite, expanded clay, shale, slag, and slate	kt	14,000	2	N/A	USA	South Africa	Brazil
Zinc (metal)	Aluminum alloys, cadmium, paint, and plastic coatings, magnesium-base alloys	kt	14,000	N/A	N/A	Australia	China	Mexico, Russia
Zirconium minerals (metals)	Chromite, olivine, niobium (columbium), stainless steel, and tantalum	kt	6,500	2	10.4	Australia	South Africa	Mozambique

Sources: US Geological Survey, Department of Mineral Resources and Energy

N/A = not available

# OVERVIEW OF THE SOUTH AFRICAN MINING INDUSTRY continued

## Key mineral industry statistic for South Africa: 2011-2021

Description	Units of measure	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Year-on-year % change
<b>Gross domestic product</b>													
Direct contribution of mining to GDP (value add)	R'millions nominal terms	216,442	218,985	238,283	239,209	227,875	251,631	268,306	287,199	315,116	353,222	480,992	36.2%
Direct contribution of mining to GDP	R'millions constant 2015 prices	217,357	209,214	217,469	213,854	223,745	220,141	225,420	223,666	221,217	194,968	217,996	(1.1%)
Mining GDP growth rate	% YoY	(0.6)	(3.7)	3.9	(1.7)	4.6	(1.6)	2.4	(0.8)	(1.1)	(11.9)	11.8	
Direct contribution of mining to GDP	US\$ equivalent	29,841	26,673	24,692	22,058	17,872	17,108	20,154	21,702	21,810	21,459	32,543	0.5%
South African GDP (value added at basic prices)	R'millions nominal terms	3,035,118	3,236,488	3,502,361	3,738,791	3,981,758	4,288,841	4,592,450	4,820,365	5,039,287	4,997,872	5,563,477	4.5%
South African GDP (value added at basic prices)	R'millions constant 2015 prices	3,698,088	3,782,074	3,876,980	3,936,505	3,981,758	4,014,646	4,061,243	4,121,231	4,124,458	3,879,360	4,063,693	0.1%
Mining's contribution as % of total GDP nominal terms	%	7.1%	6.8%	6.8%	6.4%	5.7%	5.9%	5.8%	6.0%	6.3%	7.1%	8.6%	
Mining's contribution as % of total GDP real terms	%	5.9%	5.5%	5.6%	5.4%	5.6%	5.5%	5.6%	5.4%	5.4%	5.0%	5.4%	
<b>Fixed investment</b>													
Direct contribution of mining to fixed investment - gross fixed capital formation (GFCF)	R'millions nominal terms	71,633.8	75,235.3	91,823.1	93,868.5	70,285.5	59,424.7	76,021.8	97,139.1	101,655.9	92,018.5	114,409.9	4.6%
Direct contribution of mining to fixed investment (GFCF)	R'millions constant 2015 prices	94,131	92,427	103,276	98,076	70,285	54,855	70,261	86,494	86,514	74,614	75,878	0.0%
Total private sector fixed investment (private GFCF)	R'millions nominal terms	375,458	414,515	461,274	490,222	502,967	535,114	554,431	590,968	620,719	540,674	581,515	5.0%
Total South African fixed investment (GFCF)	R'millions nominal terms	578,014	625,643	721,234	775,950	822,576	846,552	873,223	886,428	908,878	757,318	809,899	2.5%
Mining fixed investment growth rate	% YoY	(3.1%)	(1.8%)	11.7%	(5.0%)	(28.3%)	(22.0%)	28.1%	23.1%	0.0%	(13.8%)	1.7%	
Direct contribution to fixed investment (GFCF)	US\$ equivalent	9,876.4	9,163.9	9,515.1	8,655.9	5,512.3	4,040.1	5,710.4	7,340.2	7,035.8	5,590.4	7,740.9	38.5%
Mining's contribution to private sector fixed investment (GFCF)	%	19%	18%	20%	19%	14%	11%	14%	16%	16%	17%	20%	
Minings contribution as % of total investment	%	12%	12%	13%	12%	9%	7%	9%	11%	11%	12%	14%	

# OVERVIEW OF THE SOUTH AFRICAN MINING INDUSTRY continued

## Key mineral industry statistic for South Africa: 2011-2021 continued

Description	Units of measure	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Year-on-year % change
<b>Sales and exports</b>													
Total primary mineral sales	R'millions nominal terms	370,832.7	363,756.5	385,033.1	386,350.0	386,709.4	424,041.9	474,170.8	498,289.4	552,365.1	607,547.4	849,633.7	10.9%
Total primary mineral sales	US\$ equivalent	51,127.7	44,306.9	39,898.9	35,626.7	30,328.6	28,829.2	35,617.4	37,652.4	38,230.1	36,910.5	57,485.4	1.5%
Mining industry primary exports	R'millions nominal terms	282,296.6	202,331.5	234,881.4	236,205.7	211,492.5	226,776.6	296,828.8	296,745.1	321,793.7	329,450.0	438,534.2	33.1%
Mining industry primary exports	US\$ equivalent	38,921.0	24,644.7	24,339.5	21,781.4	16,586.8	15,417.8	22,296.3	22,423.0	22,271.9	20,015.2	29,670.8	48.2%
Total South African exports (merchandise)	R'millions nominal terms	782,663.9	812,402.2	919,811.0	1,005,739.4	1,027,655.7	1,115,945.6	1,183,542.4	1,249,348.0	1,295,144.6	1,394,959.4	1,820,394.6	30.5%
Primary mineral exports as % of total South African exports	%	36.1%	24.9%	25.5%	23.5%	20.6%	20.3%	25.1%	23.8%	24.8%	23.6%	24.1%	2.0%
<b>Employment</b>													
Mining industry direct employment	numbers	512,874	524,869	509,909	492,931	480,205	458,291	463,901	456,438	460,015	453,585	461,656	1.8%
Total South African formal non-agricultural employment	numbers	8,656,951	8,906,362	9,064,960	9,258,630	9,399,279	9,711,074	9,853,734	10,107,030	10,220,218	9,729,156	9,613,540	(1.2%)
Mining as % of total non-agricultural formal employment	%	5.9%	5.9%	5.6%	5.3%	5.1%	4.7%	4.7%	4.5%	4.5%	4.7%	4.8%	3.0%
Remuneration paid to employees in mining	R'millions current	86,972	93,630	100,753	102,146	114,085	120,515	128,558	134,454	143,539	149,642		(100.0%)
Average annual remuneration per mineworker	Rand	169,578	178,388	197,590	207,223	237,576	262,966	277,123	294,572	312,033	329,909	0	(100.0%)
<b>Exchange rates</b>													
Rand per US\$	R/US\$	7.3	8.2	9.7	10.8	12.8	14.7	13.3	13.2	14.4	16.5	14.8	(10.2%)
Rand per Euro	R/Euro	10.1	10.6	12.8	14.4	14.1	16.3	15.0	15.4	16.2	18.8	17.5	(6.9%)
Rands per British Pound (GBP)	R/GBP	11.6	13.0	15.1	17.9	19.5	20.0	17.2	17.6	18.4	21.1	20.3	(3.7%)

# OVERVIEW OF THE SOUTH AFRICAN MINING INDUSTRY continued

## Key mineral industry statistic for South Africa: 2011-2021 continued

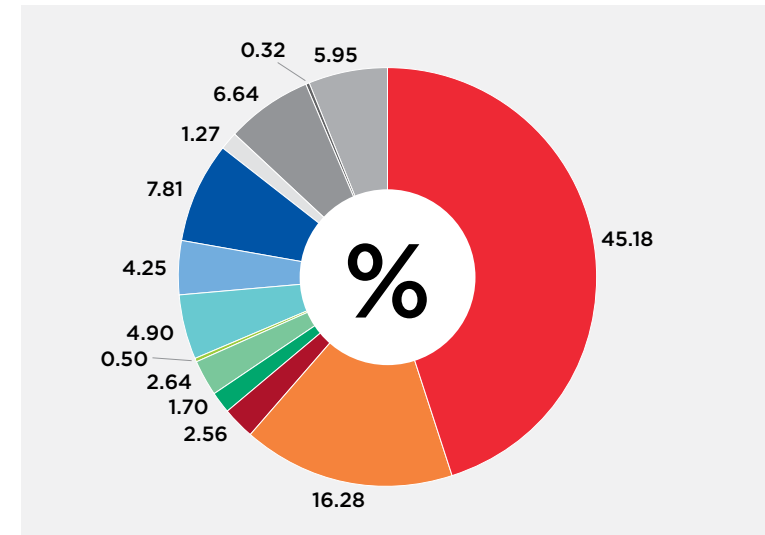
Description	Units of measure	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Year-on-year % change
<b>Commodity prices</b>													
Coal	US\$/tonne	116	93	80	72	57	64	85	98	72	66	120	82.5%
Iron ore	US\$/dmtu	168	128	135	97	56	58	72	70	94	109	162	48.5%
Gold	US\$/oz	1,569	1,670	1,411	1,266	1,161	1,249	1,258	1,269	1,392	1,770	1,800	1.7%
Platinum	US\$/oz	1,719	1,551	1,487	1,384	1,053	987	948	880	863	883	1,091	23.5%
Palladium	US\$/oz	950	738	773	814	697	617	875	1,037	1,548	2,224	2,416	8.6%
Rhodium	US\$/oz	1,739	1,210	1,045	1,169	956	694	1,107	2,219	3,908	11,221	20,141	79.5%
Copper	US\$/mt	8,828	7,962	7,332	6,863	5,510	4,868	6,170	6,530	6,010	6,174	9,317	50.9%
Nickel	US\$/mt	22,910	17,548	15,032	16,893	11,863	9,595	10,410	13,114	13,914	13,787	18,465	33.9%
Zinc	US\$/mt	2,194	1,950	1,910	2,161	1,932	2,090	2,891	2,922	2,550	2,266	3,003	32.5%

Sources: World Bank, South African Reserve Bank, Department of Mineral Resources and Energy, Statistics South Africa, South African Revenue Services

# OVERVIEW OF THE SOUTH AFRICAN MINING INDUSTRY continued

## Mining Sector Expenditure 2021

Expenditure Item	R million	%
Purchases	451,907	45.18%
Employment costs	162,840	16.28%
Interest paid	25,645	2.56%
Royalties paid	17,014	1.70%
Paid rental on land and buildings	26,426	2.64%
Paid rental on plant and machinery	5,051	0.50%
Depreciation	48,966	4.90%
Losses on assets	42,502	4.25%
Tax and company tax	78,093	7.81%
Buildings, improvements and construction works	12,727	1.27%
Expenditure on plant, machinery, furniture, fittings and other equipment	66,389	6.64%
Capital expenditure: capital expenditure on vehicles	3,228	0.32%
Other expenditure	59,509	5.95%
<b>Total expenditure</b>	<b>1,000,297</b>	<b>100%</b>



Source: Statistics South Africa

## Mining royalties paid

Commodity	2018/2019			2019/2020			2020/2021		
	Royalties paid	Relative proportions	Year-on-year growth	Royalties paid	Relative proportions	Year-on-year growth	Royalties paid	Relative proportions	Year-on-year growth
	R million	%	%	R million	%	%	R million	%	%
Coal	2,059	23.9	25.8	1,741	14.7	(15.4)	1,970	13.8	13.2
Diamond	362	4.2	2.6	95	0.8	(73.9)	29	0.2	(69.5)
Gold and uranium	288	3.3	(51.3)	180	1.5	(37.5)	608	4.3	237.8
Industrial minerals	233	2.7	134.2	453	3.8	94.6	596	4.2	31.65
Iron ore	2,078	24.1	(4.1)	4,413	37.3	112.3	4,190	29.5	(5.1)
Manganese	802	9.3	20.6	787	6.7	(1.9)	158	1.1	(79.9)
Platinum	1,127	13.1	32.5	2,786	23.6	147.2	5,743	40.4	106.1
Zinc	3	-	(75.0)	(9)	(0.1)	(376.4)	23	0.2	(355.6)
Other	1,659	19.3	33.5	1,384	11.7	(16.6)	909	6.4	(34.3)
<b>Total</b>	<b>8,612</b>	<b>100.0</b>	<b>13.1</b>	<b>11,830</b>	<b>100.0%</b>	<b>37.4</b>	<b>14,226</b>	<b>100.0</b>	<b>20.3</b>

Source: South African Revenue Services

## OVERVIEW OF THE SOUTH AFRICAN MINING INDUSTRY continued

### Employment per commodity: 2011-2021

	Total	Gold	PGMs	Diamonds	Chrome ore	Iron ore	Manganese	Non-ferrous metals	Coal	Industrial minerals	Other minerals
2011	512,874	144,799	194,745	12,047	16,911	22,360	7,460	-	78,580	13,013	22,961
2012	524,869	142,200	197,752	12,332	19,762	23,380	8,685	-	83,244	13,795	23,719
2013	509,909	131,738	191,260	13,579	18,358	21,127	9,842	15,539	88,039	13,623	6,805
2014	492,931	119,007	186,864	15,356	18,658	21,794	9,971	15,816	86,106	13,031	6,330
2015	480,205	115,029	186,465	18,313	18,450	20,554	8,639	16,414	77,747	12,866	5,727
2016	458,291	116,572	172,556	18,789	15,449	16,651	7,242	14,754	77,259	13,222	5,797
2017	463,901	112,901	172,760	18,038	16,968	17,510	7,780	16,325	82,372	13,029	6,219
2018	456,438	100,189	167,041	16,361	18,935	18,613	9,352	17,466	89,647	12,712	6,121
2019	460,015	92,916	168,102	15,252	20,901	19,769	11,143	19,593	94,297	12,195	5,847
2020	452,866	91,649	164,703	13,939	19,274	20,469	12,198	19,246	91,649	11,530	5,237
<b>2021</b>	<b>458,954</b>	<b>93,998</b>	<b>171,568</b>	<b>12,900</b>	<b>18,599</b>	<b>21,427</b>	<b>13,290</b>	<b>17,953</b>	<b>92,670</b>	<b>11,551</b>	<b>4,998</b>

Source: Department of Mineral Resources and Energy

### Employee earnings per commodity: 2011-2021

	Total	Gold	PGMs	Diamonds	Chrome ore	Iron ore	Manganese	Non-ferrous metals	Coal	Industrial minerals	Other minerals
2011	86,972	20,841	30,482	2,141	2,755	6,507	1,278	-	16,069	1,402	5,499
2012	93,630	22,238	34,393	2,408	3,434	4,691	1,565	-	17,446	1,598	5,857
2013	100,753	23,930	37,710	2,871	3,841	4,848	1,947	3,590	18,949	1,680	1,387
2014	102,146	23,383	35,652	3,663	4,047	5,692	2,302	3,691	20,595	1,810	1,311
2015	114,085	24,578	44,955	4,678	4,417	6,219	2,199	3,947	19,932	1,924	1,235
2016	120,515	28,761	45,926	5,073	4,214	5,895	2,118	4,042	21,112	2,074	1,301
2017	128,558	30,168	49,484	5,430	4,734	5,826	2,391	4,440	22,442	2,129	-
2018	134,454	27,677	51,412	5,198	5,518	6,641	3,002	5,289	25,924	2,201	1,592
2019	143,539	25,859	55,976	4,945	6,383	7,025	3,861	6,601	28,991	2,208	1,691
2020	151,753	26,904	61,083	4,505	6,312	7,537	4,430	6,746	30,516	2,062	1,655
<b>2021</b>	<b>166,155</b>	<b>30,806</b>	<b>67,312</b>	<b>4,880</b>	<b>6,117</b>	<b>8,557</b>	<b>5,197</b>	<b>7,781</b>	<b>31,401</b>	<b>2,353</b>	<b>1,751</b>

Source: Department of Mineral Resources and Energy

# OVERVIEW OF THE SOUTH AFRICAN MINING INDUSTRY continued

## Mining employment by gender: 2011-2021

	Male		Female		Total
	Number	%	Number	%	Number
2011	468,591	91	44,283	9	512,874
2012	476,469	91	48,399	9	524,869
2013	459,750	90	50,159	10	509,909
2014	440,547	89	52,384	11	492,931
2015	426,332	89	53,873	11	480,205
2016	404,664	88	53,627	12	458,291
2017	407,320	88	56,581	12	463,901
2018	398,583	87	57,855	13	456,438
2019	400,324	87	59,691	13	460,015
2020	386,009	86	62,315	14	448,324
<b>2021</b>	<b>393,464</b>	<b>86</b>	<b>65,490</b>	<b>14</b>	<b>458,954</b>

Source: Department of Mineral Resources and Energy

## Mining employment by type: 2011-2021

	Established		Contractors		Total
	Number	%	Number	%	Number
2011	350,123	68	162,751	32	512,874
2012	357,436	68	167,433	32	524,869
2013	354,939	70	154,970	30	509,909
2014	342,751	70	150,180	30	492,931
2015	334,458	70	145,747	30	480,205
2016	318,040	69	140,251	31	458,291
2017	312,947	67	150,954	33	463,901
2018	301,164	66	155,274	34	456,438
2019	295,002	64	165,013	36	460,015
2020	283,669	63	164,655	37	448,324
<b>2021</b>	<b>281,779</b>	<b>61</b>	<b>177,175</b>	<b>39</b>	<b>458,954</b>

Source: Department of Mineral Resources and Energy



DRDGOLD - Far West Gold Recoveries



The number and share of female employees in the mining sector has been growing steadily since 2009 where there were 34,433 female employees employed. In 2021 the sector employed 65,490 female employees, representing 14.3% of the total workforce. Even at the height of the COVID-19 pandemic in 2020, the sector hired 957 female employees, raising the total to 62,315.

# OVERVIEW OF THE SOUTH AFRICAN MINING INDUSTRY continued

## Contractors: total remuneration and employees: 2020-2021

Commodity	Remuneration (R'000)				No. of employees			
	Contractors		As % of industry		Contractors		As % of industry	
	2020	2021	2020	2021	2020	2021	2020	2021
Gold	3,651,467	4,944,245	14	16	17,468	19,718	19	21
PGMs	11,454,145	15,408,416	19	23	47,286	55,138	29	32
Diamonds	1,466,979	1,570,872	33	32	4,956	4,888	36	38
Chrome ore	1,208,058	1,005,714	19	16	7,384	8,013	38	43
Iron ore	1,617,353	1,757,595	21	21	11,358	12,309	55	57
Manganese	1,663,216	1,791,921	38	34	7,072	7,686	58	58
Coal	7,667,424	7,734,517	25	25	53,753	54,917	59	59
Other	2,398,498	3,480,762	-	-	15,378	14,506	-	-
<b>Total</b>	<b>31,127,144</b>	<b>37,694,045</b>	<b>21</b>	<b>23</b>	<b>164,655</b>	<b>177,175</b>	<b>42</b>	<b>39</b>

Source: Minerals Council South Africa, Department of Mineral Resources and Energy

### How to read the table on the left

The columns on percentages represent contractors' share in that industry. For example, in 2020 contractors received 14% or R3.6 billion of total remuneration in the gold industry compared to 16% (or R4.9 billion) in 2021. Similarly, in 2021 there were 19,718 contractors, representing 21% of total gold industry employment.

## Mining's contribution to South Africa - provincial overview

At provincial level, mining plays a big role, offering not only employment, but also supporting the respective provincial economies. Mining contributes more than 20% to the economies of the Limpopo, Mpumalanga, North West, and Northern Cape provinces. In the communities where mining companies operate, they have built schools, clinics, and other social infrastructure such as roads and housing for employees, thus improving the quality of life of these communities. Mining companies have also directly and indirectly supported recreational activities.

## Mining sector contribution to provincial economies: 2011-2021

	Mining sector contribution to provincial economies (GDP basic prices)										
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	%
Eastern Cape	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Free State	8.2%	8.5%	8.3%	8.7%	8.4%	8.6%	8.4%	7.8%	7.7%	6.8%	7.6%
Gauteng	11.5%	11.2%	11.1%	11.2%	10.6%	11.1%	10.9%	9.8%	9.1%	6.9%	8.8%
KwaZulu-Natal	3.5%	3.6%	3.6%	4.0%	3.7%	3.8%	3.8%	3.8%	3.8%	3.7%	3.8%
Limpopo	23.2%	23.5%	23.8%	24.0%	24.1%	24.4%	24.5%	25.0%	25.2%	26.7%	25.4%
Mpumalanga	20.6%	21.6%	21.4%	22.9%	21.5%	22.3%	22.4%	22.9%	23.2%	25.4%	23.4%
North West	25.8%	23.7%	23.8%	20.7%	23.6%	21.6%	21.7%	22.2%	22.4%	21.2%	22.3%
Northern Cape	6.6%	7.1%	7.2%	7.8%	7.4%	7.5%	7.7%	7.9%	8.0%	8.7%	8.1%
Western Cape	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%

Source: Statistics South Africa

# OVERVIEW OF THE SOUTH AFRICAN MINING INDUSTRY continued

## Safety and health performance



### Safety performance

#### Continued safety regression recorded in 2021

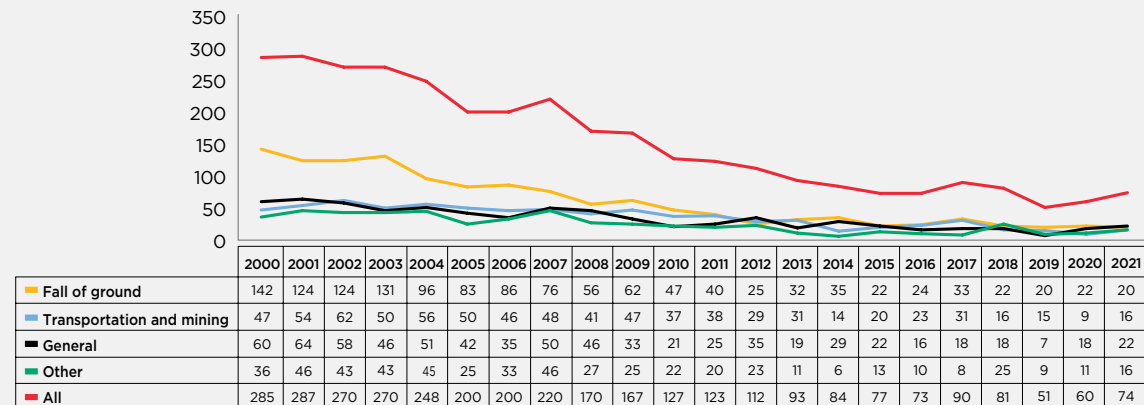
The industry continued to experience a disappointing regression in 2021, with 74 fatalities, compared to 60 recorded in 2020. This shows a year-on-year increase in fatalities of 23%. The gold and platinum sector contributed significantly to the total fatalities with 30 and 21 fatalities recorded respectively. The other commodities recorded the highest regression in safety performance with 13 fatalities recorded compared to 7 in 2020 (86% regression).

An analysis of the fatality trends indicates that general types of accident and fall of ground (FoG) are a key area of concern, with 22 general types of fatalities (30%) reported in 2021 and 20 fatalities (27%) caused by FoG. Transport-related accidents accounted for 16 fatalities (22%) in 2021.

The Minerals Council Board and the CEO Zero Harm Forum continue to monitor the progress on the project on trackless mobile machinery collision avoidance systems that is aimed at addressing transport-related fatalities. Several low hanging fruit initiatives were implemented by the industry with a focus on traffic flow and risk analysis. The Elimination of Fall of Ground Fatalities Action Plan was approved by the Minerals Council Board and the CEO Zero Harm Forum to address the challenges related to FoG. The programme has six pillars, which include the adoption of new leading practices aimed at minimising uncontrolled rock damages, increasing underground visibility and the risk of working under unsupported rock, skills development related to

rock engineering, including the updating of learning material for the Chamber of Mines Strata Control Certificate and Rock Mechanics Certificates. The need for more research and development (R&D) related to barring technology, seismic hazard rating, and support designs forms part of the pillar under R&D. It is also envisaged that Chapter 2 regulations will be reviewed as part of the FoG Action plan.

Fatalities by causes: 2000-2021



Source: Department of Mineral Resources and Energy

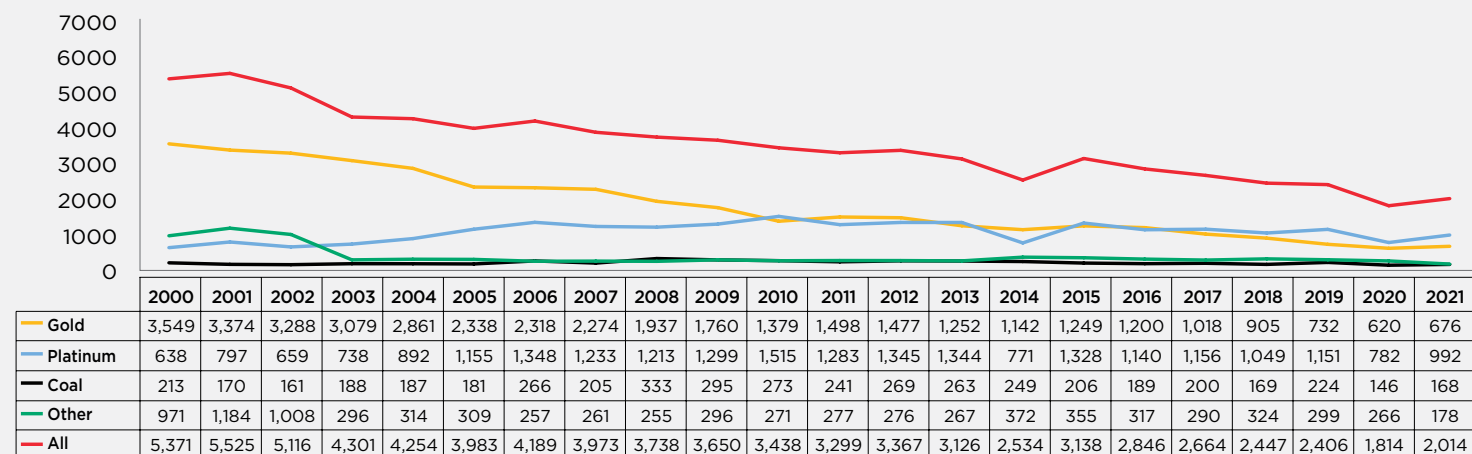
# OVERVIEW OF THE SOUTH AFRICAN MINING INDUSTRY continued

## Regression in injuries

The industry recorded a 26% regression in overall injuries, from 1,814 in 2020 to 2,014 in 2021. The platinum sector recorded the highest regression in injuries from 782 to 992 (27% regression). The other commodities recorded a reduction in injuries from 266 in 2020 to 178 in 2021. Injuries classified under general were the largest contributor to injuries with 1,048, followed FoG with 368 injuries and transport with 305 injuries.

Source: Department of Mineral Resources and Energy

### Injuries by commodity: 2000 – 2021



## Health performance

### Improvement recorded

According to the Department of Mineral Resources and Energy (DMRE), in the last decade health-related statistics have improved significantly as the industry has undertaken efforts to reduce occupational health risks. A general decrease of 35.69% was noted in the total of 2,013 occupational diseases reported by mines in 2020, when compared to 3,130 cases reported in 2019.

It should, however, be noted that, due to the COVID-19 pandemic, most mines within the South African mining

industry were not fully operational in 2020 due to the national lockdown restrictions. This may have had a direct impact on the number of employees at risk to occupational hazards and ultimately the number of reports submitted.

### Occupational diseases reported to the DMRE

The analysis of occupational disease rate trends per 10,000 employees shows an overall total of 38 employees diagnosed with occupational diseases in 2020 from 57 employees in 2019. The occupational disease rate trends were noted as follows: five silicosis cases in 2020, down from seven cases in 2019. 16 pulmonary TB cases in 2020,

down from 28 cases in 2019; 14 noise induced hearing loss cases in 2020, down from 16 cases in 2019; zero coal workers' pneumoconiosis cases in 2020, down from one case in 2019 and two 'other' occupational diseases cases in 2020, down from four cases in 2019. The rate trends on silico-tuberculosis (Sil+TB) remained unchanged at a rate of zero for both 2019 and 2020. The trends on TB and HIV reported are summarised overleaf.

## OVERVIEW OF THE SOUTH AFRICAN MINING INDUSTRY continued

### Trends of TB and HIV reporting: 2013 to 2020

Data elements	Total labour force							
	2013	2014	2015	2016	2017	2018	2019	2020
<b>Total</b>	<b>423,032</b>	<b>465,923</b>	<b>476,625</b>	<b>455,681</b>	<b>473,972</b>	<b>493,054</b>	<b>449,246</b>	<b>482,068</b>
Counselled for HIV	229,151 (54.2%)	259,297 (55.7%)	299,566 (63.9%)	299,444 (65.7%)	329,562 (69.5%)	360,994 (73.2%)	315,381 (70.2%)	354,466 (73.5%)
Tested for HIV	192,557 (84.0%)	183,202 (70.7%)	191,333 (63.9%)	192,517 (64.3%)	206,033 (62.5%)	205,596 (57.0%)	210,456 (66.7%)	209,315 (59.1%)
HIV positive	17,384 (9.0%)	19,084 (10.4%)	21,913 (11.5%)	16,243 (8.4%)	16,293 (7.9%)	15,630 (7.6%)	13,101 (6.2%)	10,684 (5.1%)
Co-infected with TB and HIV	2,905 (80.9%)	2,820 (36.2%)	3,036 (72.7%)	2,359 (62.1%)	1,719 (66.6%)	1,441 (69.7%)	895 (63.8%)	699 (40.4%)
Living with HIV and on ARV	28,887	24,740	27,272	38,804	39,308	42,002	12,858	85,418
Screened for TB	308,403 (72.9%)	376,718 (80.8%)	422,670 (88.7%)	437,436 (96.0%)	455,242 (96.0%)	474,429 (96.2%)	437,199 (97.3%)	449,815 (93.3%)
Diagnosed with TB	3,593 (1.2%)	4,461 (1.2%)	4,211 (1.0%)	3,799 (0.9%)	2,581 (0.6%)	2,066 (0.4%)	1,403 (0.3%)	1,726 (0.4%)
On TB treatment	3,483	3,999	4,367	3,687	2,414	1,899	1,729	1,676
Diagnosed with MDR-TB	149 (4.1%)	190 (4.3%)	112 (2.7%)	123 (3.2%)	114 (4.4%)	71 (3.4%)	86 (6.1%)	46 (2.7%)
Diagnosed with XDR-TB	11 (0.3%)	18 (0.4%)	14 (0.3%)	13 (0.3%)	12 (0.5%)	8 (0.4%)	8 (0.6%)	11 (0.6%)

Source: Department of Mineral Resources and Energy



Harmony - Tshepong

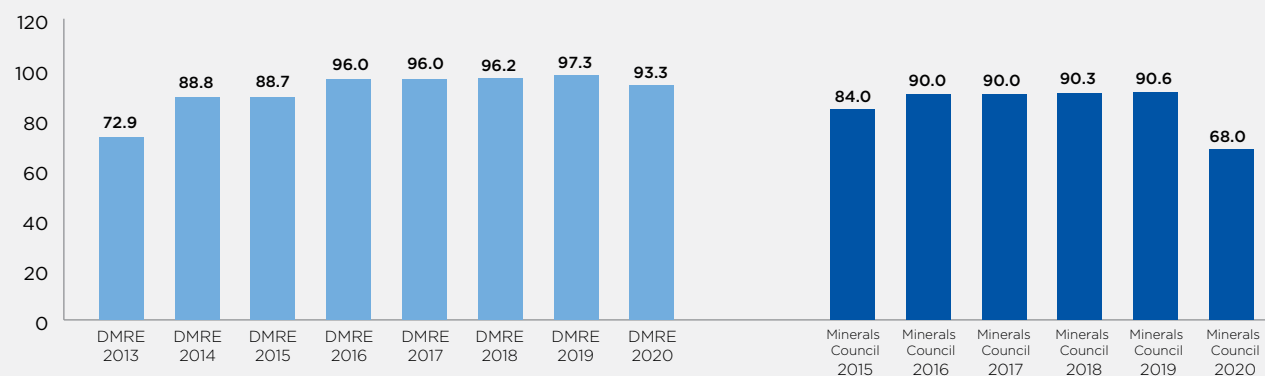
## OVERVIEW OF THE SOUTH AFRICAN MINING INDUSTRY continued

The COVID-19 pandemic affected the TB and HIV programmes at the mines, which resulted in a decrease in TB screening and an increase in employees diagnosed with TB. TB screening has remained above 90% in line with the UNAIDS 90:90:90 strategy for TB. New strategies to deal with TB and HIV management during COVID-19 need to be investigated.

### *TB screening*

The trend in TB screening is presented in the graph alongside and shows that, using Minerals Council data, there has been a sharp decline in TB screening in 2020 compared to the stabilisation around 90% that was evidenced from 2016. DMRE data, however, generally shows higher levels of screening up until 2019.

Percentage of employees screened for TB: 2013 - 2020



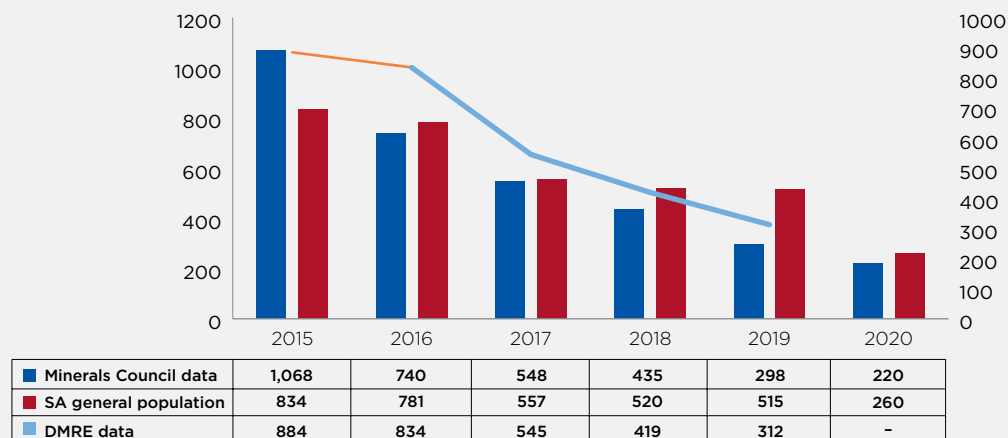
Source: Masoyise Health Programme 2020 Annual Report

### *TB incidence*

The Minerals Council data reflects a steady reduction in TB incidence over a period, in line with industry milestones.



TB Incidence aspirational curves



Source: Masoyise Health Programme 2020 Annual Report

# OVERVIEW OF THE SOUTH AFRICAN MINING INDUSTRY continued

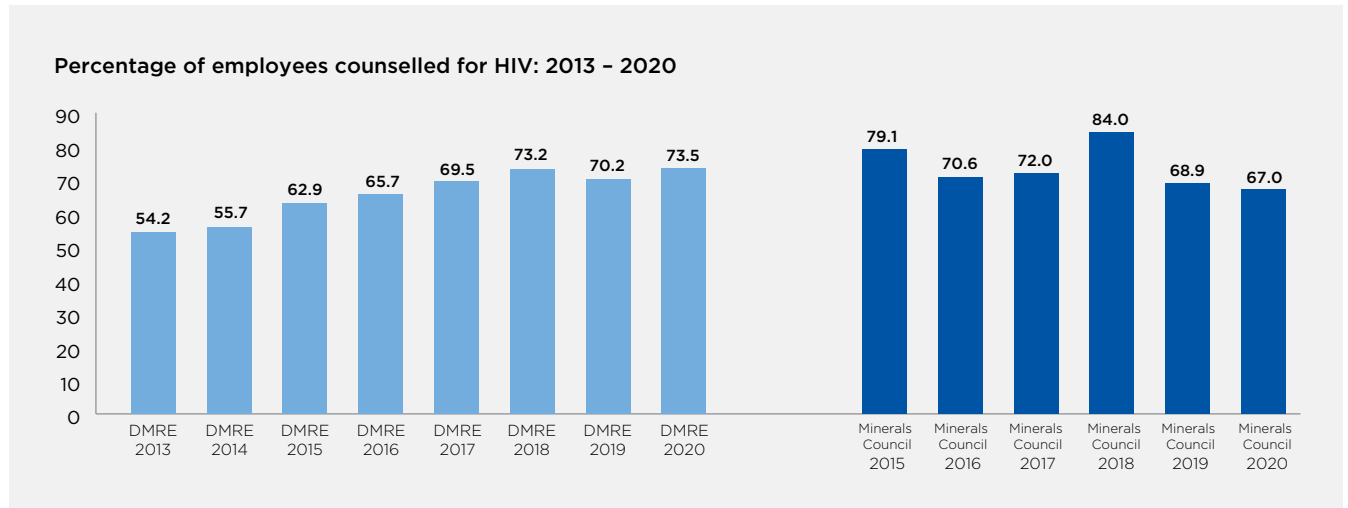
## Workers counselled for HIV (%)

The graph alongside shows the trend in percentage of workers counselled for HIV between 2015 and 2020 from the Minerals Council data and 2013-2019 from the DMRE data.

With 68.3% of employees in the 2020 period counselled for HIV, this is a slight regression from 2019 performance and the target of counselling 100% of employees has still not been met.

## Non-communicable diseases

The data reflects a slight annual improvement on non-communicable diseases (NCDs), although the target of 100% of employees to be screened for hypertension and diabetes has not been met. Reporting on this milestone commenced in 2019.



Source: Masoyise Health Programme 2020 Annual Report

## Non-communicable disease screening

Activity	Milestone	Industry performance	Industry performance
		2019	2020
NCDs	Screen all employees for hypertension	-	-
	Screen all employees for diabetes	-	-

Source: Masoyise Health Programme 2020 Annual Report



Sibanye-Stillwater - SA gold operation

## OUR COMMODITIES: METALS AND MINERALS

# Platinum group metals (PGMs)



“Employment in the PGM industry increased by

# 4.2%

in 2021.”

## 2021

KEY FEATURES



**R346.5 billion**  
Total sales



**171,568**  
Direct employees



**R67.3 billion**  
Employee earnings

# OUR COMMODITIES: METALS AND MINERALS continued

## PLATINUM GROUP METALS (PGMs)

In 2021 production of PGMs was 285.3 tonnes from 226.5 tonnes in 2020, representing a 26% increase. Export volumes for the entire basket registered 264.6 tonnes in 2021 from 177.5 tonnes the year before.

This represented a 49% increase. Local sales volumes were 12.6 tonnes in 2021, a drop from 15.3 tonnes in 2020. Export earnings jumped by 85% to R321.3 billion in 2021 compared to the previous year, with local sales registering R25.3 billion and representing a 47% increase.

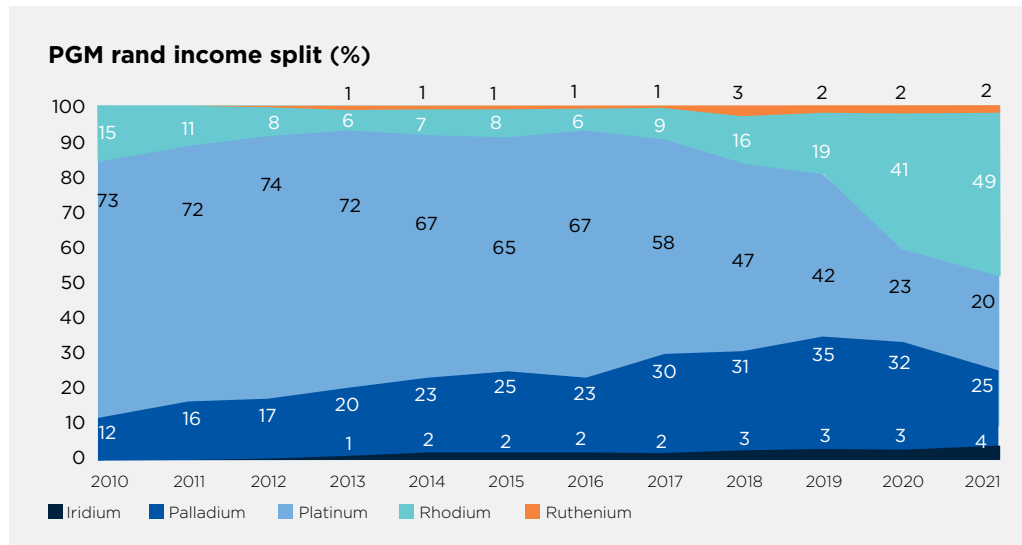
The PGM industry is one of the few in the sector that increased employment, both when comparing 2021 with 2020 and 2021 to 2019. In 2021 total industry employment stood at 171,568. Labour earnings in the industry increased in 2021 to R67.3 billion from R61.1 billion the year before.

### Dollar and Rand PGM price increases

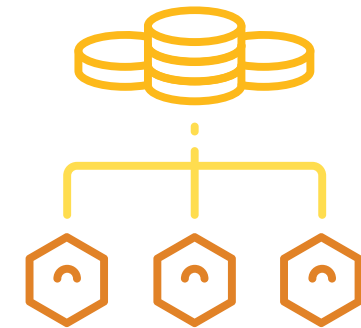
	US Dollar increase (%)	Rand increase (%)
Platinum	24	11
Palladium	9	(2)
Rhodium	79	61

Source: World Bank, Johnson Matthey, South African Reserve Bank

The PGM commodity basket includes five elements, and ranked in order of production volumes are: platinum (49.6%), palladium (29.4%), ruthenium (11%), rhodium (7.4%), and iridium (2.6%).



Source: Johnson Matthey, Department of Minerals Resources and Energy, Minerals Council South Africa



### Hydrogen economy

The advent of the hydrogen economy is an opportunity for the use of PGMs in various applications, e.g., fuel cells for mobility and electricity generation. South Africa, through the Department of Science and Innovation (DSI), has started developing some prototypes in the two applications noted above. To derive optimal benefits from this initiative, continuous research and development is key to remain competitive. The hydrogen economy is expected to be a significant driver of PGM demand for the foreseeable future, particularly given the global drive to reduce carbon emissions.



# OUR COMMODITIES: METALS AND MINERALS continued

## PLATINUM GROUP METALS (PGMs)

### South African PGM production and sales

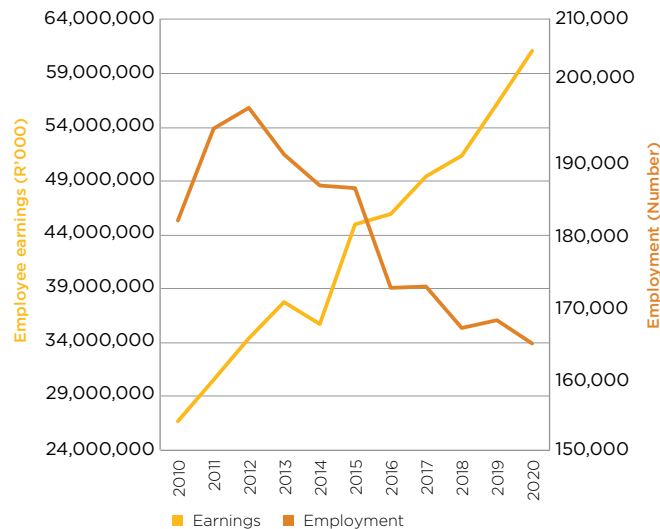
	Production	Local sales		Export sales		Total sales	
	Tonnes	Tonnes	R'000	Tonnes	R'000	Tonnes	R'000
2010	287	-	7,892,570	244	65,894,341	-	73,786,910
2011	289	-	10,619,219	244	73,234,047	-	83,853,266
2012	254	-	8,285,235	211	60,918,939	-	69,204,174
2013	264	28	8,886,103	239	75,348,535	266	84,234,637
2014	188	28	10,644,402	202	66,860,760	230	77,505,163
2015	276	32	11,149,886	254	82,988,098	286	94,137,984
2016	264	31	11,093,840	250	85,318,461	282	96,412,301
2017	262	32	11,966,660	251	85,069,237	283	97,035,896
2018	271	24	10,668,195	244	94,228,661	268	104,896,855
2019	268	16	11,441,132	227	124,585,015	243	136,026,147
2020	226	15	17,189,499	178	173,241,908	193	190,431,408
<b>2021</b>	<b>285</b>	<b>13</b>	<b>25,253,878</b>	<b>265</b>	<b>321,271,671</b>	<b>277</b>	<b>346,525,549</b>

Source: Department of Mineral Resources and Energy

### PGM sector employment and earnings

	Employment	Earnings (R'000)
2011	194,745	30,482
2012	197,752	34,393
2013	191,260	37,710
2014	186,864	35,652
2015	186,465	44,955
2016	172,556	45,926
2017	172,760	49,484
2018	167,041	51,412
2019	168,102	55,976
2020	164,703	61,083
<b>2021</b>	<b>171,568</b>	<b>67,312</b>

Source: Department of Mineral Resources and Energy



Anglo American Platinum - Tumela

## OUR COMMODITIES: METALS AND MINERALS continued

# Coal



“Employment in the coal industry increased by

# 1.1%

in 2021.”

## 2021 KEY FEATURES



**R150.1 billion**  
Total sales



**92,670**  
Direct employees



**R31.4 billion**  
Employee earnings

## OUR COMMODITIES: METALS AND MINERALS continued

### COAL

In 2021 coal production declined by 7.8% to 228.6Mt from 248.1Mt in 2020. The international price of South African coal averaged US\$119.84/Mt in 2021 compared to US\$65.66/Mt the previous year – naturally this could have boosted production and exports, but that was not the case.

Export volumes were 21.5% lower in 2021, registering 46.8Mt compared to the 59.7Mt exported the year before. Most of the 12.8Mt (59.7Mt less 46.8Mt) of coal that was not exported can be explained by constraints relating to rail and port infrastructure and operations. At 2021 average coal prices this translates to R22.7 billion in lost export revenue for the country.

Export earnings increased from R45.5 billion in 2020 to R63.7 billion in 2021, representing a 39.9% increase. Local sales earnings, which are dominated by Eskom pricing contracts, also increased, albeit marginally, by 1.6% to R86.4 billion in 2021. Generally local coal price per tonne is significantly lower than international prices – up to a third of the international Rand-converted prices.

Total employment in the industry increased slightly between 2020 and 2021 to 93,998 from 91,649, a 1.1% increase. Employment earnings in the sector increased by 2.9% to R31.4 billion from R30.5 billion.

#### South African coal production and sales

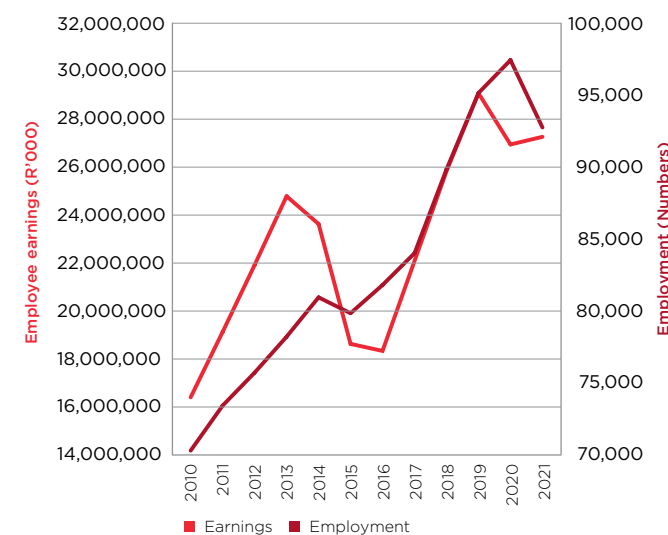
	Production	Local sales		Export sales		Total sales	
	Tonnes '000	Tonnes '000	R'000	Tonnes '000	R'000	Tonnes '000	R'000
2010	257,206	186,366	33,702,229	66,770	37,477,184	253,136	71,179,413
2011	250,706	177,889	37,253,525	68,807	50,548,678	246,697	87,802,202
2012	259,012	185,548	44,091,664	76,009	52,226,904	261,556	96,318,568
2013	256,563	183,950	49,603,015	74,566	51,813,484	258,516	101,416,499
2014	261,949	184,416	55,255,702	75,823	51,452,471	260,239	106,708,172
2015	252,176	179,135	56,574,200	75,376	47,543,139	254,511	104,117,339
2016	250,653	183,213	61,962,133	69,140	50,579,004	252,353	112,541,137
2017	252,232	172,383	63,219,040	78,970	67,045,866	251,353	130,264,906
2018	253,546	171,779	68,727,949	79,569	77,043,285	251,348	145,771,235
2019	258,490	194,818	86,039,681	70,293	55,368,496	265,111	141,408,178
2020	248,082	188,128	85,020,498	59,661	45,546,301	247,790	130,566,800
<b>2021</b>	<b>228,645</b>	<b>177,286</b>	<b>86,381,343</b>	<b>46,844</b>	<b>63,717,030</b>	<b>224,131</b>	<b>150,098,372</b>

Source: Department of Mineral Resources and Energy

#### Coal sector employment and earnings

	Employment	Earnings (R'000)
2011	78,580	16,069
2012	83,244	17,446
2013	88,039	18,949
2014	86,106	20,595
2015	77,747	19,932
2016	77,259	21,112
2017	82,372	22,442
2018	89,647	25,924
2019	94,297	28,991
2020	91,649	30,516
<b>2021</b>	<b>92,670</b>	<b>31,401</b>

Source: Department of Mineral Resources and Energy



## OUR COMMODITIES: METALS AND MINERALS continued

# Iron ore



“Employment in the iron ore industry increased by

# 4.7%

in 2021.”

## 2021 KEY FEATURES



**R120.8 billion**  
Total sales



**21,427**  
Direct employees



**R8.6 billion**  
Employee earnings

## OUR COMMODITIES: METALS AND MINERALS continued

### IRON ORE

In 2021 total production increased by 31% to 73.1Mt, while export volumes marginally increase by 1% to 60.8Mt. Local sales improved by 18% to 6.8Mt. On the other hand, export earnings soared by 39% in 2021 to R115.7 billion and local sales earnings increased by a staggering 57% to R5.1 billion, albeit from a low base.

Industry employment in the iron ore industry increased to 21,427 from 20,469, while total labour remuneration increased by 13.5% to R8.6 billion in 2021 from R7.5 billion in 2020.

#### South African iron ore production and sales

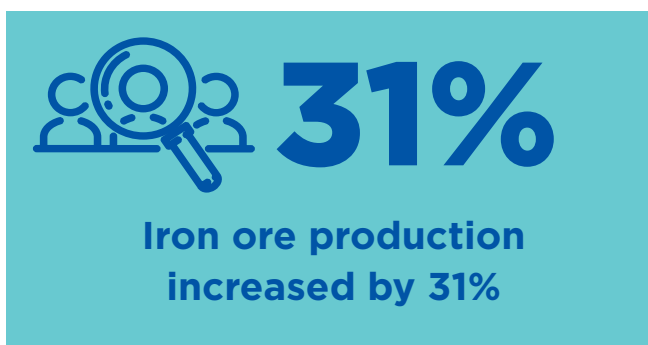
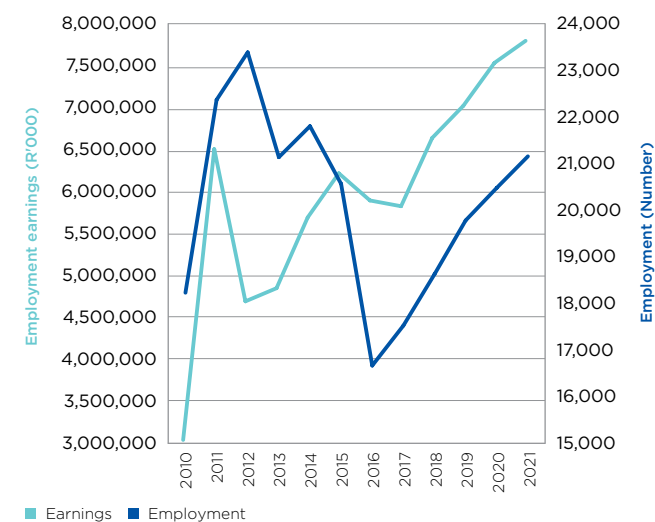
	Production	Local sales		Export sales		Total sales	
	Tonnes	Tonnes	R'000	Tonnes	R'000	Tonnes	R'000
<b>2010</b>	58,709,330	10,560,910	3,270,326	47,492,581	40,148,279	58,053,491	43,418,606
<b>2011</b>	58,056,897	9,844,323	4,207,746	51,890,937	58,444,148	61,735,260	62,651,894
<b>2012</b>	67,100,474	8,392,835	4,448,978	57,109,694	48,193,830	65,502,529	52,642,808
<b>2013</b>	71,644,761	9,295,336	5,776,442	58,180,390	57,360,500	67,475,726	63,136,942
<b>2014</b>	80,741,034	9,571,453	5,741,815	61,944,607	52,944,638	71,516,060	58,686,453
<b>2015</b>	72,805,534	7,512,691	5,071,073	64,175,896	34,394,014	71,688,587	39,465,086
<b>2016</b>	66,450,089	6,160,597	3,855,830	58,392,326	39,240,118	64,552,923	43,095,948
<b>2017</b>	74,789,394	7,177,079	5,187,033	60,678,253	44,188,638	67,855,332	49,375,671
<b>2018</b>	74,272,974	8,024,968	5,732,580	61,715,193	45,529,223	69,740,161	51,261,803
<b>2019</b>	72,406,782	7,548,006	5,630,784	60,582,727	65,040,115	68,130,733	70,670,899
<b>2020</b>	55,635,308	5,885,791	3,260,059	60,177,593	83,304,860	66,063,384	86,564,919
<b>2021</b>	<b>73,090,918</b>	<b>6,811,992</b>	<b>5,101,679</b>	<b>60,814,531</b>	<b>115,680,173</b>	<b>67,626,523</b>	<b>120,781,852</b>

Source: Department of Mineral Resources and Energy

#### Iron ore sector employment and earnings

	Employment	Earnings (R'000)
<b>2011</b>	22,360	6,507
<b>2012</b>	23,380	4,691
<b>2013</b>	21,127	4,848
<b>2014</b>	21,794	5,692
<b>2015</b>	20,554	6,219
<b>2016</b>	16,651	5,895
<b>2017</b>	17,510	5,826
<b>2018</b>	18,613	6,641
<b>2019</b>	19,769	7,025
<b>2020</b>	20,469	7,537
<b>2021</b>	<b>21,427</b>	<b>8,557</b>

Source: Department of Mineral Resources and Energy



## OUR COMMODITIES: METALS AND MINERALS continued

# Gold



“Employment in the gold industry increased by

# 2.7%

in 2021.”

## 2021 KEY FEATURES



### R102.2 billion

Total sales



### 93,998

Direct employees



### R30.8 billion

Employee earnings

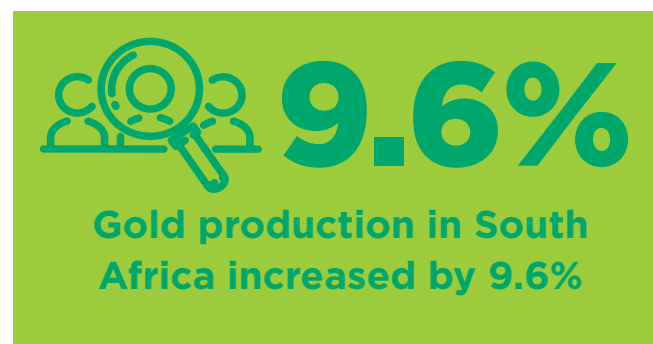
## OUR COMMODITIES: METALS AND MINERALS continued

### GOLD

In 2021 gold production in South Africa increased by 9.6% to 105 tonnes (2020: 96 tonnes). This is 0.2% lower than the 2019 figure (105.2 tonnes). In 2021 total sales were R102.2 billion, representing an increase of 18.2% when compared to 2020.

This figure is 33.4% higher than total sales in 2019. Total export volumes soared by 51.6% in 2021 to 107 tonnes when compared to 2020, while export earnings were up by 35.1% to R93.1 billion. In the same period local sales volumes declined by more than half to 11 tonnes while local sales earnings were 47.9% lower (to R9.2 billion).

The number of people employed in the industry increased marginally to 93,998 in 2021 from 91,649 in 2020. Total employee earnings registered an increase of 14.5% from R26.9 billion in 2020 to R30.8 billion in 2021.



#### South African gold production and sales

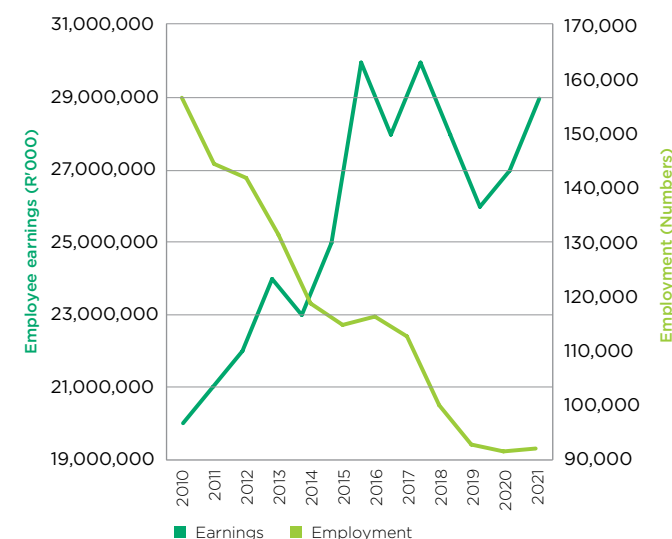
	Production	Local sales		Export sales		Total sales	
	kg '000	kg '000	R'000	kg '000	R'000	kg '000	R'000
2010	189	7	2,055,698	177	51,037,449	184	53,093,147
2011	180	10	3,633,111	176	65,258,302	186	68,891,413
2012	155	11	4,862,748	165	71,961,757	176	76,824,504
2013	160	10	4,192,863	151	65,793,912	162	69,986,775
2014	152	9	3,450,902	136	59,898,125	145	63,349,026
2015	145	16	7,385,852	118	55,314,075	134	62,699,927
2016	142	26	15,214,101	122	73,210,641	147	88,424,741
2017	137	33	17,292,406	119	64,894,988	152	82,187,393
2018	117	66	35,201,487	64	34,482,018	130	69,683,505
2019	105	76	48,295,654	42	28,336,141	119	76,631,795
2020	96	22	17,580,144	70	68,855,730	92	86,435,874
<b>2021</b>	<b>105</b>	<b>11</b>	<b>9,155,869</b>	<b>107</b>	<b>93,053,603</b>	<b>117</b>	<b>102,209,471</b>

Source: Department of Mineral Resources and Energy

#### Gold sector employment and earnings

	Employment	Earnings (R'000)
2011	144,799	20,841
2012	142,200	22,238
2013	131,738	23,930
2014	119,007	23,383
2015	115,029	24,578
2016	116,572	28,761
2017	112,901	30,168
2018	100,189	27,677
2019	92,916	25,859
2020	91,649	26,904
<b>2021</b>	<b>93,998</b>	<b>30,806</b>

Source: Department of Mineral Resources and Energy



OUR COMMODITIES: METALS AND MINERALS continued

# Manganese



“Employment in the manganese industry increased by

# 9%

in 2021.”

**2021**  
KEY FEATURES




**R37.1 billion**  
Total sales



**13,290**  
Direct employees



**R5.2 billion**  
Employee earnings

 Tshipi é Ntle Manganese Mining - Tshipi Borwa

## OUR COMMODITIES: METALS AND MINERALS continued

### MANGANESE

In 2021 manganese production, exports and local sales volumes respectively soared by 18.3% to 19.2Mt, 4.9% to 16Mt, and 14.4% to 2.5Mt when compared to 2020. However, all sales earnings indicators dropped with export earnings decreasing by 0.4% to R34.3 billion and local sales declining by 3.1% to R2.8 billion.

Total employment in the manganese industry increased by almost 9% to 13,290 in 2021 when compared to 2020, while total labour earnings were up by 17.3% at R5.2 billion.

#### South African manganese production and sales

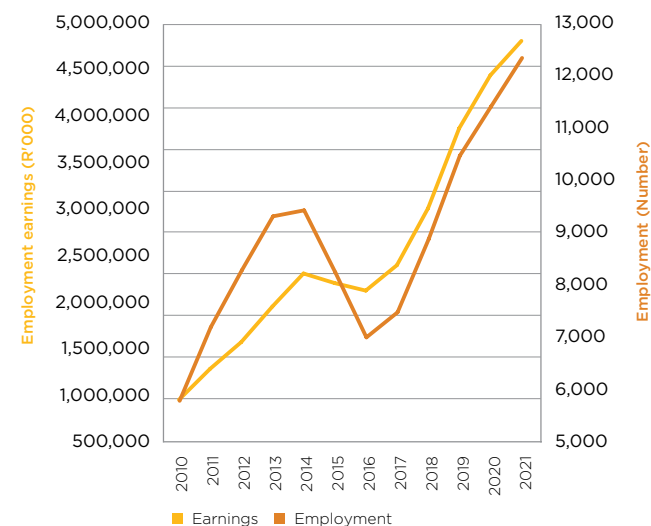
	Production	Local sales		Export sales		Total sales	
	Tonnes	Tonnes	R'000	Tonnes	R'000	Tonnes	R'000
2010	7,171,745	888,389	1,320,564	6,283,356	9,340,026	7,171,745	10,660,590
2011	8,651,842	1,158,712	1,325,213	7,493,130	8,569,854	8,651,842	9,895,067
2012	8,943,415	937,962	1,134,842	8,005,453	9,685,812	8,943,415	10,820,654
2013	10,957,133	1,140,248	1,506,434	9,816,885	12,969,545	10,957,133	14,475,979
2014	14,051,244	1,408,581	1,641,633	12,642,663	14,734,415	14,051,244	16,376,049
2015	15,952,416	1,015,415	860,474	14,937,001	12,657,775	15,952,416	13,518,249
2016	11,527,524	523,333	896,947	11,004,191	18,860,231	11,527,524	19,757,177
2017	14,349,888	766,150	1,726,702	13,583,738	30,614,192	14,349,888	32,340,893
2018	14,918,236	355,027	1,066,479	14,563,209	43,746,990	14,918,236	44,813,469
2019	17,002,978	661,442	1,751,826	16,341,536	43,280,475	17,002,978	45,032,300
2020	16,059,758	2,138,644	2,841,816	15,370,604	34,851,623	17,509,248	37,693,440
<b>2021</b>	<b>19,156,479</b>	<b>2,450,021</b>	<b>2,757,122</b>	<b>16,021,176</b>	<b>34,341,810</b>	<b>18,471,197</b>	<b>37,098,932</b>

Source: Department of Mineral Resources and Energy

#### Manganese sector employment and earnings

	Employment	Earnings (R'000)
2011	7,460	1,278
2012	8,685	1,565
2013	9,842	1,947
2014	9,971	2,302
2015	8,639	2,199
2016	7,242	2,118
2017	7,780	2,391
2018	9,352	3,002
2019	11,143	3,861
2020	12,198	4,430
<b>2021</b>	<b>13,290</b>	<b>5,197</b>

Source: Department of Mineral Resources and Energy



## OUR COMMODITIES: METALS AND MINERALS continued



# Chrome ore



“Employment in the chrome ore industry decreased by

# 3.5%

in 2021.”

## 2021 KEY FEATURES



### R22 billion

Total sales



### 18,599

Direct employees



### R6.1 billion

Employee earnings

## OUR COMMODITIES: METALS AND MINERALS continued

### CHROME ORE

In 2021 chrome ore production is estimated to have grown by 27% to 18.4Mt from 14.5Mt the year before. Exports and local sales volumes were also up by 14.2% to 10.2Mt and 12.7% to 5.2Mt respectively.

The high commodity prices in 2020 boosted earnings. Compared to 2020, export earnings in 2021 grew by 10.4% to R11.2 billion while local sales earnings were up by 23% to R10.7 billion. Comparing the industry's performance in 2021 against 2020, however distorts the analysis because of the 'structural break' caused by the global pandemic in 2020.

If 2021 industry performance is compared to 2019, production volumes and local sales earnings are the only indicators that showed a positive improvement. Production was up by 4.4%, while local sales earnings marginally increased by 2.8%. Volumes of exports and local sales decreased by 1% and 0.2% respectively. In terms of earnings, exports and total sales were down by 5.3% and 1.5% respectively.

The chrome ore industry recorded 18,599 employees in 2021 compared to 19,274 people in 2021, a 3.5% decline. Employee earnings also dipped by 3.1% to R6.1 billion in 2021 compared to the previous year.



#### South African chrome ore production and sales

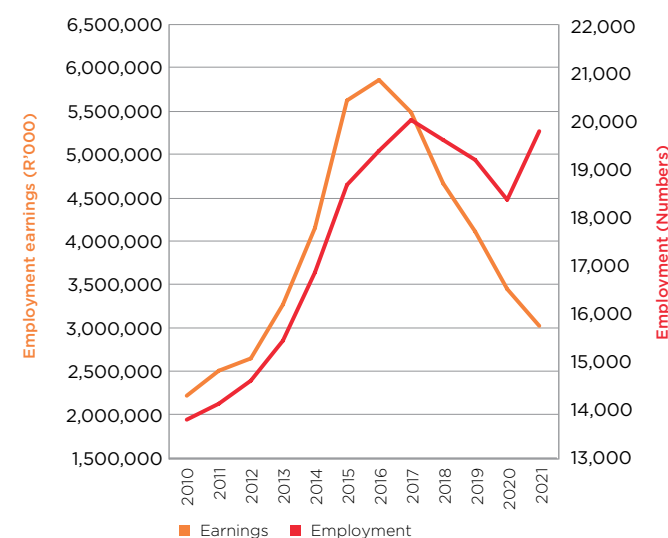
	Production	Local Sales		Export Sales		Total Sales	
	Kt	Kt	R'000	Kt	R'000	Kt	R'000
2010	10,871	7,267	4,159,308	1,929	2,459,473	9,196	6,618,781
2011	11,865	7,202	5,227,339	2,152	3,649,136	9,354	8,876,475
2012	11,317	6,683	4,681,855	2,470	3,594,282	9,152	8,276,137
2013	13,690	8,483	5,870,717	4,168	5,891,833	12,651	11,762,549
2014	14,038	10,048	7,771,424	3,695	5,834,876	13,743	13,606,301
2015	15,656	9,833	8,093,409	4,821	8,104,128	14,654	16,197,537
2016	14,708	8,726	8,164,638	4,684	9,541,381	13,410	17,706,019
2017	16,671	9,060	11,027,040	4,539	12,396,254	13,600	23,423,293
2018	17,850	9,955	11,755,253	4,065	10,045,204	14,020	21,800,457
2019	17,656	10,302	11,854,069	5,245	10,453,314	15,547	22,307,382
2020	14,513	8,928	10,172,822	4,647	8,731,865	13,575	18,904,688
<b>2021</b>	<b>18,435</b>	<b>10,197</b>	<b>11,230,705</b>	<b>5,235</b>	<b>10,743,835</b>	<b>15,432</b>	<b>21,974,540</b>

Source: Department of Mineral Resources and Energy

#### Chrome ore sector employment and earnings

	Employment	Earnings (R'000)
2011	16,911	2,755
2012	19,762	3,434
2013	18,358	3,841
2014	18,658	4,047
2015	18,450	4,417
2016	15,449	4,214
2017	16,968	4,734
2018	18,935	5,518
2019	20,901	6,383
2020	19,274	6,312
<b>2021</b>	<b>18,599</b>	<b>6,117</b>

Source: Department of Mineral Resources and Energy



## OUR COMMODITIES: METALS AND MINERALS continued

# Non-ferrous metals



“Employment in the non-ferrous metals industry decreased by

# 6.7%

in 2021.”

## 2021 KEY FEATURES



### R20 billion

Total sales



### 17,953

Direct employees



### R7.8 billion

Employee earnings

# OUR COMMODITIES: METALS AND MINERALS continued

## NON-FERROUS METALS

### Non-ferrous metals do not contain iron and are generally more expensive than ferrous metals (contain iron).

They are more malleable than ferrous metals, highly corrosion resistant, have low density, non-magnetic, and have good electrical conductivity, which makes their applications wide-ranging, from industrial usage to commercial and residential utilisation. South Africa is home to most of the non-ferrous metals including titanium, although South Africa currently produces no titanium. South Africa contains 0.5% of global ilmenite and 0.09% of the world's rutile reserves, and is ranked 6th and 3rd globally in ilmenite and rutile reserve abundance. Titanium occurs primarily in seven minerals namely: anatase, brookite, ilmenite, leucosene, perovskite, rutile, and sphene.

In 2021 employment in the non-ferrous industry was 17,953, a 6.7% decline from the year before. Incidentally, employee earnings soared by 15.3% to R7.8 billion when compared to 2020.

In 2021 non-ferrous mineral total sales reached R20 billion with zinc earnings recording the most growth when compared to 2020, increasing by 41.2% to almost R9.2 billion. Total sales earnings for cobalt dipped by 28.8% to R170.5 million.

#### South African non-ferrous metals sales

Commodity	R'000	% of sales
Cobalt	170,527	1
Copper	2,745,652	14
Lead	846,283	4
Nickel	9,162,970	46
Zinc	7,084,935	35
<b>Total non-ferrous sales</b>	<b>20,010,368</b>	<b>100</b>

Source: Department of Mineral Resources and Energy

#### South African non-ferrous metals production

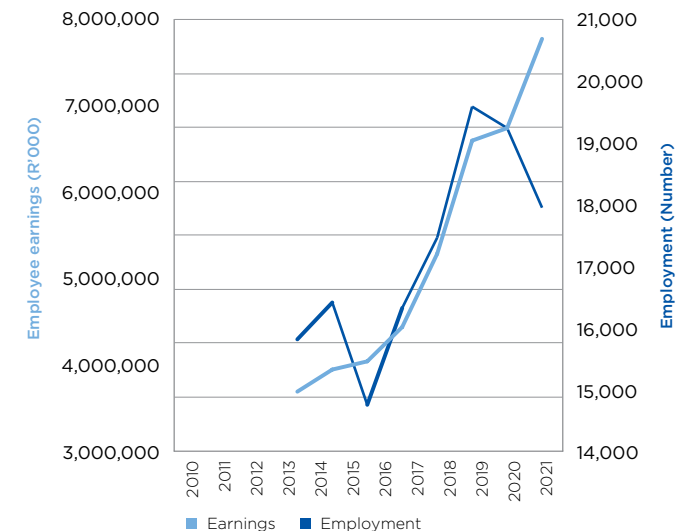
	Production				
	Cobalt	Copper	Lead	Nickel	Zinc
	Tonnes	Tonnes	Tonnes	Tonnes	Tonnes
2010	840	83,639	50,625	39,962	36,142
2011	862	89,297	54,460	43,320	36,629
2012	1,102	69,859	52,489	45,946	37,034
2013	1,294	80,821	41,848	51,208	30,145
2014	1,332	78,697	29,348	54,956	26,141
2015	1,362	77,360	34,573	56,689	29,040
2016	1,101	65,257	39,344	48,994	26,695
2017	1,064	65,523	48,150	48,437	30,778
2018	1,007	46,900	35,118	43,236	28,129
2019	1,027	52,516	42,936	43,466	125,157
2020	897	29,068	28,048	34,908	160,816
<b>2021</b>	<b>355</b>	<b>28,307</b>	<b>31,224</b>	<b>31,846</b>	<b>193,785</b>

Source: Department of Mineral Resources and Energy

#### Non-ferrous metals sector employment and earnings

	Employment	Earnings (R'000)
2011	-	-
2012	-	-
2013	15,539	3,590
2014	15,816	3,691
2015	16,414	3,947
2016	14,754	4,042
2017	16,325	4,440
2018	17,466	5,289
2019	19,593	6,601
2020	19,246	6,746
<b>2021</b>	<b>17,953</b>	<b>7,781</b>

Source: Department of Mineral Resources and Energy



# OUR COMMODITIES: METALS AND MINERALS continued

## NON-FERROUS METALS

### South African non-ferrous metals total sales

	Cobalt	Copper	Lead	Nickel	Zinc	Total
	R'000	R'000	R'000	R'000	R'000	R'000
2010	151,534	4,369,326	696,738	5,984,753	323,214	11,525,565
2011	125,245	5,432,849	762,929	6,402,191	402,566	13,125,781
2012	154,759	5,155,061	811,498	6,432,346	444,536	12,998,201
2013	205,093	5,817,573	683,220	6,947,820	335,687	13,989,394
2014	260,709	5,950,553	659,777	9,135,386	455,631	16,462,057
2015	275,855	5,200,951	511,477	8,311,641	447,493	14,747,416
2016	232,124	3,744,887	884,986	7,100,366	538,325	12,500,688
2017	395,989	4,327,545	1,419,829	6,267,622	990,268	13,401,254
2018	411,184	4,077,841	1,008,096	6,712,840	802,282	13,012,244
2019	285,223	3,229,786	1,129,441	7,226,487	3,545,867	15,416,804
2020	239,449	2,410,330	694,094	7,407,549	5,017,549	15,768,971
<b>2021</b>	<b>170,527</b>	<b>2,745,652</b>	<b>846,283</b>	<b>9,162,970</b>	<b>7,084,935</b>	<b>20,010,368</b>

Source: Department of Mineral Resources and Energy



Vedanta Zinc International – Black Mountain Mining

## OUR COMMODITIES: METALS AND MINERALS continued

# Diamonds



“Employment in the diamonds industry decreased by

# 7.5%

in 2021.”

## 2021 KEY FEATURES



### R21.1 billion

Total sales



### 12,900

Direct employees



### R4.9 billion

Employee earnings

# OUR COMMODITIES: METALS AND MINERALS continued

## DIAMONDS

### In 2021, South Africa produced 9.7 million carats of diamonds, an increase of 14.8% compared to 2020.

This is also higher than the 7.2 million carats recorded in 2019. Export volumes also increased by 40.4% in 2021 to 8.3 million carats on the back of strong commodity demand as economies and consumer disposable income recovered from the COVID-19 pandemic. There was also a healthy increase in domestic diamond sales volumes, increasing by 61.8% to 2.1 million carats when compared to 2020. Total sales earnings for the diamond industry soared by 59.3% to R21.4 billion compared to what was recorded in 2020. This is also much higher than the total earnings of R13.2 billion recorded in 2019. Local sales earnings were R7.9 billion in 2021, an increase of 54% when compared to the previous year.

In 2021 employment in the diamond industry declined from 13,939 people in 2020 to 12,900, representing a 7.5% reduction. Employment in the industry has consistently declined since 2017. Employment earnings grew by 8.3% to R4.9 billion.

The diamond industry has identified a number of initiatives that could unlock the industry's potential. These include addressing the following issues:

- Diamond Export Levy Act
- State Diamond Trader
- The Diamond Exchange and Export Centre
- S74 Exemption
- Creation of a conducive investment environment for beneficiating diamonds in South Africa
- Removal of the payment of VAT on imports - there is no other major diamond cutting country that imposes this tax on its beneficiation industry.

### South African diamond production and sales

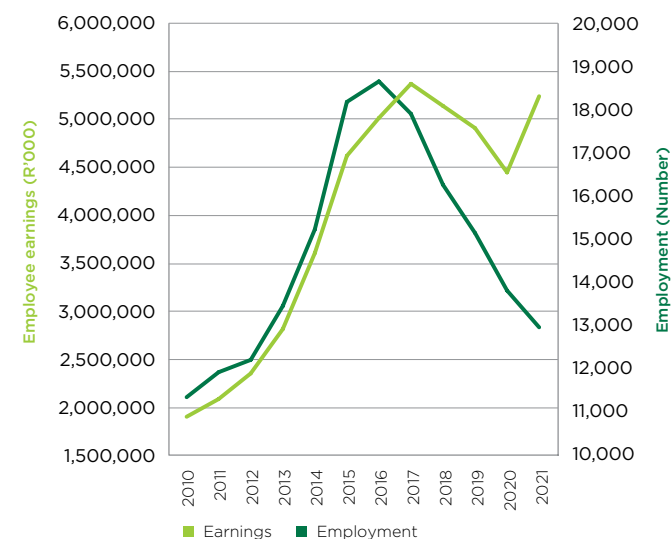
	Production	Local sales		Export sales		Total sales	
	Carats	Carats	R'000	Carats	R'000	Carats	R'000
2010	8,869,532	-	-	-	-	-	-
2011	7,046,277	-	-	-	-	-	-
2012	7,245,402	-	-	-	-	-	-
2013	8,159,531	3,425,339	7,552,445	3,768,082	4,792,191	7,193,421	12,344,635
2014	8,095,037	3,168,609	8,800,678	5,619,831	7,730,529	8,788,440	16,531,206
2015	8,229,657	3,138,546	8,613,267	4,650,483	5,811,860	7,789,029	14,425,128
2016	8,302,110	1,609,160	8,325,338	9,002,389	12,435,825	10,611,549	20,761,163
2017	9,678,752	1,015,882	7,912,460	9,118,652	10,230,438	10,134,534	18,142,898
2018	9,914,612	1,427,590	7,186,242	8,869,716	10,074,788	10,297,306	17,261,029
2019	7,176,996	945,737	5,499,937	6,273,530	7,664,806	7,219,267	13,164,743
2020	<b>8,471,642</b>	<b>1,284,873</b>	<b>5,151,826</b>	<b>5,901,679</b>	<b>8,119,626</b>	<b>7,186,552</b>	<b>13,271,453</b>
<b>2021</b>	<b>9,723,811</b>	<b>2,073,975</b>	<b>7,928,797</b>	<b>8,283,288</b>	<b>13,210,210</b>	<b>10,357,263</b>	<b>21,139,007</b>

Source: Department of Mineral Resources and Energy

### Diamond sector employee and earnings

	Employment	Earnings (R'000)
2011	12,047	2,141
2012	12,332	2,408
2013	13,579	2,871
2014	15,356	3,663
2015	18,313	4,678
2016	18,789	5,073
2017	18,038	5,430
2018	16,361	5,198
2019	15,252	4,945
2020	13,939	4,505
<b>2021</b>	<b>12,900</b>	<b>4,880</b>

Source: Department of Mineral Resources and Energy





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