
WHY MINING STILL MATTERS

The socio-economic importance
of the mining industry





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WHY MINING STILL MATTERS

1 Introduction

South Africa's mineral resources are the lifeblood of the economy. Without urgent policy interventions to revitalise the mining industry, the country's entire economy will wither, like a gold rush town fallen into decay.

The mining industry is struggling, but it is far from dead. South Africa is the world's leading producer of platinum, vanadium, vermiculite, manganese and chromium.¹ It is the second largest producer of ilmenite, industrial garnet, palladium, rutile and zirconium. It is also the world's third largest coal exporter, and a large producer of iron ore. Other significant minerals produced by South Africa include gold, titanium, nickel, antimony, phosphates, rare earth elements, uranium, diamonds, tin and copper.

It is ranked second in Africa and 21st in the world for mineral potential in the Fraser Institute's most recent survey of mining companies,² assuming that its policy regime followed 'best practices'. This is, perhaps, not surprising when it sits on R35 trillion in mineral reserves, one of the richest non-oil resource bounties in the world.³

South Africa's policy regime does not follow best practices, however. Uncertainty created by years' worth of delays in proposed amendments to the Mineral and Petroleum Resources Development Act (MPRDA), which established the state as the custodian of all mineral rights, and by the predatory ambitions and dramatic legal wrangling about the terms of a new Mining Charter for the industry, has hit investment sentiment hard. This is compounded by widespread perceptions of cronyism, corruption, and inefficient administration of mining licences. Other factors in the socio-political environment also weigh heavily on investors' feelings towards South Africa's mining industry.

The mining industry is struggling, but it is far from dead. South Africa's policy regime does not follow best practices. Uncertainty created by years' worth of delays in proposed amendments to the Mineral and Petroleum Resources Development Act and by the predatory ambitions and dramatic legal wrangling about the terms of a new Mining Charter for the industry, has hit investment sentiment hard.

During the five years from 2013 to 2017, the global perception of the attractiveness of mining policies in South Africa has rapidly eroded. Out of 15 African countries with significant mining industries, it is now the third worst in which to own mining interests, after the Democratic Republic of Congo and Zimbabwe. Worldwide, it is ranked 81st out of 91 countries the Fraser Institute assessed.

Less than 20% of surveyed mining companies believe the level of regulatory uncertainty in South Africa is conducive to, or at least not a deterrent to, investment. Only 10 of the surveyed countries fared worse. Even fewer think socio-economic agreements and community development conditions are not a deterrent to investment.

Only 25% consider the taxation regime not to be a deterrent to investment, ranking South Africa fifth from the bottom, ahead of only Guatemala, Bolivia, Ecuador and Venezuela. A similar number feel the same about uncertainty over disputed land claims.

Around 10% consider labour relations and employment law not to be a deterrent to investment, again ranking South Africa fifth worst in the world.

Fewer than 10% of surveyed mining companies think South Africa's political instability is not a deterrent to investment, ranking it ahead of only Guatemala and Venezuela, and behind Zimbabwe and the Democratic Republic of the Congo.

The only criterion on which South Africa ends in the top half of surveyed countries is the availability of labour and skills.

Thanks to its stellar mineral potential, South Africa's combined investment attractiveness index remains relatively stable, despite the terrible policy regime. Still, it ranks only 48th in the world out of 91 surveyed countries, and fourth in Africa, behind Ghana, Mali and Botswana.

As a result of its unpredictable, uncompetitive and unstable policy environment, however, the South African mining industry shrank even as commodity prices boomed and the rest of the world grew its mining industry by 5% a year on average.⁴

The promulgation of the new Mining Charter by minerals resources minister Gwede Mantashe in September 2018, which included several key revisions, climb-downs and concessions to the industry, is a big step in the direction of restoring certainty and investor confidence.

Much more needs to be done. Turning the negative sentiment around is important not only for the sake of the mining industry and its hundreds of thousands of employees, but also for many towns, cities, and industries that support and depend on mining.

This paper is not intended to examine the policy or investment environment in any detail. Instead, it seeks to place the continuing importance of the mining industry in a broader perspective, outlining its crucial contributions to South Africa's economy and society, and making some suggestions on how the environment for a successful mining industry might be improved.

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2 The changing place of mining in South Africa

In 1980, mining was the second-largest contributor to South Africa's gross domestic product (GDP) at 21%, only one percentage point behind the contribution of manufacturing (22%).⁵ According to Statistics South Africa, it ranked way ahead of trade (12%), finance (11%) and government (10%).

By 2016, however, the composition of the country's GDP had been transformed. Now led by finance (20%) and – somewhat alarmingly – government (17%), manufacturing (13%) dropped to fourth place behind trade (15%), and mining declined even further, to sixth place (8%) behind transport (10%). The Minerals Council of South Africa (formerly known as the Chamber of Mines) estimates mining's contribution to GDP at 7%.⁶

On the face of it, this might suggest that mining, as a primary industry, is giving way to tertiary industries, like finance. But the relative performance of the mining sector obscures the reality somewhat. The declining relative contribution to GDP of the mining sector can largely be explained by the growth of other industries, especially finance and the public sector.

In 1980, mining contributed an unusually high share of GDP. In most other years, both before and after the peak around 1980, mining contributed less than 15%. The minimum came as long ago as 1996, with about 6% of GDP, after which the industry slowly became more important again.

In absolute terms, mining industry production has declined by only 2.2% since 1981, or 0.06% per year.⁷ Growth rates have swung wildly during that time, with an all-time high of 23.2% in October 2013, and an all-time low of -17.4% in March 2016.

In real terms, measured in constant 2010 rands, the contribution of mining to GDP has declined by 7.5%, or an average of 0.8% per year, between 2007 and 2016.

A similar pattern can be seen in employment. The peak came in 1987, with over 760 000 employees, declining to a low of 400 000 by 2001, rising again to nearly 530 000 in 2008 and 2012, but declining steadily since then to around 460 000,⁸ according to data from Stats SA and the Minerals Council.

The majority of employees can be found in the platinum group metals (PGM) sector, which employed more than 175 000 people in 2017, followed by gold with over 112 000, and coal with almost 82 000.⁹ It is notable that among these three sectors, which account for about 75% of total employees, employment in the PGM sector has doubled since the mid-1990s, coal grew by about 70% since the mid-2000s, and gold has been on a spectacular decline from about 380 000 employees in 1995.

This emphasises that much of the weakness in the sector centres on the gold industry, where reserves are declining and production is becoming ever-more expensive.

Gold production has been on the decline since the 1980s. In 1980, gold accounted for two thirds of all mineral sales, but this has plummeted to only 11% by November 2018.¹⁰ South Africa was the top gold producer in the world until 2007, but since then production has fallen by almost half, leaving the country seventh in the rankings in 2017, behind China, Australia, Russia, the United States, Canada and Peru.¹¹

In 1993, South Africa produced 619 tons of gold.¹² By 2017, production was only 145 tons, a decline of 76.5%. By contrast, South Africa produced 218 tons of PGM in 2017, up 19% from the 176 tons produced in 1993. However, this hides a sharp decline from peak PGM production of 309 tons in 2006. With coal, the rise in production has been consistent and steady, from 107 tons of oil equivalent (TOE) in 1993 to 143 TOE in 2017, only slightly down from an all-time high of 148 TOE in 2014.¹⁴

While existing gold reserves will last only decades, according to Statistics SA, reserves of PGMs and coal could last for hundreds of years.

In 1993, South Africa produced 619 tons of gold. By 2017, production was only 145 tons, a decline of 76.5%. By contrast, South Africa produced 218 tons of PGM in 2017, up 19% from the 176 tons produced in 1993.

Production of gold, diamonds and PGMs have all declined between 2004 and 2018, while coal production has risen slightly. Contrary to these mainstays of the industry, production levels of manganese, chromium and iron ore have been on a strong rising trend. Despite a sharp downturn in 2015, iron ore production is up 100% since 2004, chromium is up 140%, and manganese production is 280% higher than in 2004.¹⁵

Despite the precipitous decline in gold volume, the value of sales has risen in nominal terms, especially since 2005, when it was still below R30 billion. By 2014, the value of gold sold amounted to a substantial R75 billion. The value of PGM sales rose from less than R8 billion in 1995 to R116 billion in 2014, with growth powering right through the global financial crisis of 2007/8. The value of coal sales rose similarly, from R13 billion in 1995 to R114 billion in 2014.

Total mineral sales have been on a rising trend in the last few years. In 2016, total sales amounted to R437.6 billion, up 12.9% on the year before. In 2017, sales grew 8.4% to R474.5 billion, and after a bad start to 2018, results for the first 11 months of last year suggest it will close up another 3.4% to just north of R490 billion.

The 'big three' of coal, PGMs and gold account for 24.4%, 23.5% and 16.0% of all mineral sales, making up 63.9% of the total. Other significant contributors to mineral sales were iron ore at 12.4%, diamonds at 4.4%, manganese ore at 3.3%, chromium ore at 3.3%, building materials at 2.1%, nickel at 1.7% and copper at 1.1%. The remainder is made up of other non-metallic minerals (5.8%) and other metallic minerals (2.2%).¹⁶

Despite rising sales, profitability in the mining sector remains a struggle. In 2017, the industry saw a substantial increase in revenue after five relatively stagnant years, largely led by rising commodities prices.¹⁷ The industry grew by 4.6%, making it the second-largest contributor to the country's 1.3% GDP growth after agriculture.¹⁸ Revenue increased by 13% to R371 billion, and net profit of R17 billion was a relief compared to the substantial losses the industry incurred in 2016, amounting to R46 billion in 2016.

Results in 2018 were more mixed, with coal and manganese contributing to an overall increase in revenue to R398 billion, while PGMs, gold, iron and chrome remained fairly stagnant. The industry's brief profitability also evaporated, as higher input cost negated the rise in revenue, resulting in an R11 billion overall loss.¹⁹

This means the industry's profitability from 2013 to 2018 was negative overall. This is reflected in employment numbers, which peaked in 2012, but declined by nearly 15% since.

SARS documents reveal that the number of company taxpayers in the mining and quarrying sector declined dramatically in the 2017/18 assessment year, from 2 970 companies to 1 543. Of these, only 599 companies made a profit, compared to 949 the previous year.²⁰

Since the middle of 2016, the industry's market capitalisation has steadily recovered some of the losses from its deep slump in 2015 and early 2016, when the JSE Mining Index lost more than half of its value. It has yet to recover the levels seen between 2010 and 2014, however.

Mining is a foundational industry that supports a very large number of people, companies and industries, including entire towns and cities. Its influence is far broader than mere industry data can reflect.

The mining industry is down, but not out. It has struggled in recent years with rising costs, damaging policies and labour unrest, but it still employs nearly 5% of South Africa's employed workforce,²¹ makes a significant direct contribution to GDP, sits on extensive reserves, remains a world leader in the production of many minerals, and recently has been producing growing sales revenues.

3 Who benefits from the mining industry?

Mining companies do not exist in a vacuum, merely to enrich shareholders. Like any business, mines can only profit if they meet customer demand for price and quality. They can only attract employees if they remunerate those employees well enough.

Mining is a foundational industry that supports a very large number of people, companies and industries, including entire towns and cities. Its influence is far broader than mere industry data can reflect.

3.1 Employees

A common perception of mining companies is that they benefit their shareholders, first and foremost. This belief, that workers are exploited to produce profits for corporate fat cats lies at the heart of the anti-capitalist rhetoric of left-wing political spin doctors. This perception is not true.

By far the largest share of value created, 47%, went to employees in 2018.²² This represents a sharp and steady rise from just 27% in 2012. This reflects increasing wage bills, despite pressure on profitability in the sector. Mining wages have been on a rampage in recent years, with median monthly incomes rising by 50% from R5 000 in 2010 to R7 500 in 2015, an above-inflation annual wage increase of 8.5%.²³

Mine wages were once among the lowest in the country, but mine workers are now the highest paid industrial workers in the country, alongside workers in the utilities industry. Minimum entry-level wages are about twice as high as in the petroleum sector, three to four times higher than in the hospitality sector, and five times higher than in the security industry.

Including benefits like provident funds, medical and housing benefits, paid leave, overtime and bonus allowances, the starting salary for an entry-level underground worker in the gold sector was about R150 000 per year in 2016.

In stark contrast to the value distribution to employees, the share of value that accrued to investors was 6% in 2018, up from a mere 2% in 2017. This is a dramatic decline from a peak of 20% in 2012. And some mining companies do not pay regular dividends, in recognition of tough economic times.

3.2 Transformation

The mining industry has made significant strides in transformation, too. Transformation is the political term used to describe racial and gender diversity, and in particular, demographic representation in ownership, management and staff.

Average direct ownership by historically disadvantaged individuals (HDIs) is 39%, which is well above the 2018 Mining Charter's requirement of 26%, and even the 30% required of all new mining ventures.²⁴

This hides an important fact, however. Most mining companies are majority-owned by large institutions. These include private and state-owned investment companies, insurance companies, and pension funds. These institutions represent a wide range of individuals of all races, genders, ages and nationalities.

None of the mining companies are still majority-owned by mining magnates. The narrative of 'white monopoly capital', dreamt up by a foreign public relations firm, simply does not exist.

In 2016, 75% of the industry's expenditure on services went to companies owned by HDIs, exceeding the 2010 Mining Charter requirement of 70%. In that year, 68% of capital goods and 69% of consumables were procured from HDI firms, exceeding the 2010 Mining Charter's targets of 40% and 50%, respectively.²⁵

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The 2018 Mining Charter overhauls these targets significantly, requiring 80% of services to be sourced from South African companies, and 70% of mining goods to be sourced from South African companies that are either owned by HDIs or are BEE Level 4-compliant firms. Given that the industry significantly exceeded previous targets, it would likely achieve these new targets long before the expiry of the five-year deadline.

The 2010 Mining Charter required a 40% demographic representation at all levels of management. In 2016, between 48% and 50% of top, senior and middle management were HDIs, and 58% of junior management were HDIs. The new Mining Charter sets five-year targets of 50% for top management, 60% for executive and middle management, and 70% for junior management.

3.3 Communities

Mining companies also spend generously on community development. Although the previous Mining Charter set no targets, a generally accepted level of community reinvestment is to contribute 1% of net profit after tax, according to the Minerals Council.²⁶ In 2017, the latest year for which data is available (and indeed the latest year in which the industry was profitable), the 28 companies surveyed by the Minerals Council alone spent more than 3% of the entire industry's net profit after tax.

The 2018 Mining Charter requires new mining ventures to establish a minimum of 5% non-transferable carried interest or a minimum of 5% equity equivalent benefit to host communities.

The MPRDA of 2002 was a major setback for local communities, since it removed the ownership of mineral rights from those that had freehold title to their land, and hence used to own the mineral rights. This substantially undermines communities in negotiations with mining companies seeking to exploit underground resources.

The only power communities now have lies in consultation with government and mining companies, which has led to protests and legal action. The most prominent example occurred at Xolobeni on the Wild Coast of the Eastern Cape, where the community is divided over whether or not an Australian mining firm ought to be granted titanium mining rights. The matter remains held up in court, and is now the subject of a two-year moratorium.

Another difficulty involves communities that have weak tenure based on tribal land systems, in which tribal leaders negotiate with mining companies for personal shares in return for the community's alleged consent to mine.

The requirement for social and labour plans in the 2018 Mining Charter, as well as carried interest in new mining ventures, are designed to overcome resistance from local communities who say they see little benefit from mining operations in their areas.

Besides the 465,000 people directly employed by the mining sector, the Minerals Council reports that the industry can claim credit for creating some 1.4 million jobs in other industries.

Community investments, such as building houses, schools and clinics, upgrading local infrastructure, and providing child and adult education facilities, accounted for 2% of the mining industry's expenditure in 2018. This accounts for R3.5 billion in value, and is a substantial increase from 1% of expenditure in each of the years from 2012 to 2017, and 0% in 2011 and earlier.²⁷

3.4 Indirect jobs and dependants

Besides the 465,000 people directly employed by the mining sector, the Minerals Council reports that the industry can claim credit for creating some 1.4 million jobs in other industries.²⁸

The industry's employees do not live in isolation. Although they often live far from their homes, they support about 4.5 million dependants from the R126 billion they earn per year, according to the Minerals Council. The loss of a single job in the sector is felt ten times over by spouses, children and extended family.

If one were to apply a similar breadwinner/dependants ratio to all the indirect jobs created by the mining industry, an estimated 13.5 million people depend on this income. That means up to 19.9 million people rely, directly or indirectly, on the mining industry, for their rent, clothing, food, education and healthcare.

3.5 Exports

The contribution of mining to South Africa's exports is variable, but large. In the last 20 years, it peaked at 44% in both 1996 and 2010, and hit a low of 31% in 2003. In 2018, the mining sector accounted for 38% of South Africa's total exports, significantly exceeding the country's second-largest export, vehicles, which accounted for 11% of exports.²⁹

According to the National Development Plan adopted in 2012, the share of exports accounted for by primary minerals and secondary beneficiated products is as much as 60%.

South Africa's balance of trade (the difference in value between imports and exports) recorded a R75 billion surplus in 2017, compared to a deficit of R2.5 billion in 2016. The largest contribution to the surplus was made by the mining sector, as higher commodity prices translated into a 23.5% increase (or R81.2 billion) in export proceeds.³⁰

A country's current account consists of its trade balance, which is usually the dominant component, plus earnings from foreign investments by South Africans, minus the earnings of foreign investors in South Africa, plus net transfer payments such as aid and remittances.

Countries with current account surpluses, the largest of which are Germany, China, Japan, South Korea, the Netherlands, Switzerland, Singapore, Italy, Thailand and Russia, finance the current account deficits in other countries, the largest of which is the United States. Running a current account deficit tends to place downward pressure on the value of a country's currency.

South Africa has not had a current account surplus since 2003, after reaching an all-time high of a mere R15.6 billion in the fourth quarter of 2002. After a lengthy decline to 2008, it nearly reached parity again in 2011, before slumping dramatically to 2013, when it reached an all-time low of R246.5 billion in the red.³¹ In the third quarter of 2018, the deficit had narrowed to a still-massive R176.6 billion.³²

Any industry that contributes substantially to exports, as mining does, is critical to supporting the country's current account, and to earning foreign exchange to pay for the country's massive appetite for imports.

3.6 Government

The 2002 MPRDA effectively expropriated mineral rights, and vested them in the state. This not only enables the government to dictate exactly where mining companies can explore, and what they may mine, but it also entitles the government to claim royalties from mining companies that lease those mineral rights.

Any industry that contributes substantially to exports, as mining does, is critical to supporting the country's current account, and to earning foreign exchange to pay for the country's massive appetite for imports.

In 2018, the government received 24% of value created by the mining sector, in the form of direct taxes (12%), employee payroll taxes (9%), and royalties on mineral rights (3%). In addition to these, mining companies also pay VAT, and contribute other taxes.

The mining industry contributes 4.6% of the country's total pay-as-you-earn (PAYE) tax take, which alone was worth R20.5 billion for the 2017/18 financial year.³³ An additional R518 million was paid by assessed individual income tax payers. The industry paid provisional company tax amounting to R21.9 billion, or almost exactly 10% of the total provisional company tax paid in 2017/18.

Actual company tax paid varies significantly with profitability from one year to the next. In 2017/18, the industry was assessed for R2.3 billion, or 2.6% of the total company tax take. In 2016/17, however, the take was R14.5 billion, or 7.2%, in 2015/16 it was R12.6 billion, or 6.8%, and in 2014/15, it was R13.8 billion, or 7.5%.³⁴

It should be noted that the number of taxpayers declined dramatically in the last assessment year, from 2970 companies to 1543, and only 599 of these companies made a profit, compared to 949 the previous year.

In taxes alone, the industry contributes tens of billions of rand to the fiscus. In a 2016 article, Kerwin Lebone, then a researcher at the Centre for Risk Analysis, estimated that 60% of all tax revenue col-

lected in South Africa goes into social protection services ranging from free and subsidised housing to clean water, electricity and education. ‘Miners therefore contribute a great deal to support the education, income, healthcare and social development needs of many South Africans,’ he wrote.³⁵

3.7 Goods and services

The mining industry spends almost as much on goods and services as it contributes to GDP itself. In 2016, for example, the industry contributed R291 million to GDP, and spent R245 billion on purchases of goods and services from other economic sectors.³⁶ Of the total, R89 billion (36.3%) was reserved for capital expenditure, and R156 billion (63.7%) for current spending on goods and services.

To put that in perspective, the entire government spent only R188 billion on comparable goods and services in the 2015/16 financial year, compared with the mining industry’s R156 billion. All the country’s municipalities combined spent R169 billion similarly. Infrastructure spending at all three levels of government came in at R290 billion, compared with the mining industry’s expenditure of R89 billion.

The largest single component of the industry’s spending on goods and services was for transport, storage and communication, accounting for 52% of the total spend. For a sense of scale, this made up almost a third of all national expenditure in those sectors. The second largest component of mining industry purchases was petroleum chemicals, rubber and plastic; the third largest was metals, machinery and equipment; and the fourth largest share of spending went to electricity, gas and water.

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All other sectors buy goods and services necessary for their own generation of output. But, given the nature of the industry, mining arguably purchases a far wider range than other sectors. The very process of digging minerals out of the ground requires enormous expenditure on goods and services of a kind not required in other sectors. An idea of the vast array of goods and services required by mining emerges from the fact that Anglo American alone has 30 000 suppliers around the world.

3.8 The manufacturing sector

If mining is threatened, so is the manufacturing industry. A major report on structural transformation published in April 2018 by the Industrial Development Think Tank (IDTT) at the University of Johannesburg concludes that South Africa has deindustrialised prematurely.³⁷ Manufacturing output in most major sectors has stagnated or shrunk in the last decade.

‘South Africa has not made significant progress in transforming the structure of its economy and, by some measures, has in fact regressed,’ write the report’s authors. ‘It has prematurely deindustrialised, with the contribution of manufacturing to GDP declining from 21% in 1994 to 13.3% in 2016.’³⁸

In other middle-income countries, manufacturing’s share of the economy remains above 20%, on average. In the developing economies of East Asia and the Pacific, it averaged about 28% in 2015.³⁹

The IDTT report authors add: ‘The result has been much poorer economic performance in South Africa compared with other upper-middle income countries. South African industry value-added grew at an average rate of just 1.6% over the period 1994 to 2016 while GDP grew at 2.9%. This contrasts with the average for all the upper-middle income countries which recorded an average industry value-added growth of 5.5%, leading GDP growth of 5.0%.’⁴⁰

The report bemoans the bias towards mineral and resource-based sectors, accounting for 60% of the

country's exports. Although this underscores the importance of mining to the economy, the truth is that a stronger manufacturing sector can only be built upon a healthy mining sector.

As a case in point, consider that the metals and engineering industries are very closely tied to the fortunes of the mining industry. Not only do they consume the products of the industry, but they also supply machinery, equipment and construction materials to mining companies and related industries.

A previous report by John Kane-Berman of the IRR quoted a paper written by Henk Langenhoven in 2015, as chief economist of the Steel and Engineering Industries Federation of South Africa (Seifsa): 'Without the mining sector set on a course for future growth, a large proportion of the metal and engineering sector's market will remain in the doldrums.'⁴¹

The same is true of any other manufacturing industry for which the mining industry is not only a supplier, but also a customer.⁴²

If reindustrialisation and a revitalisation of the manufacturing sector is the aim, this cannot be achieved by diverting resources from, and discouraging investment in, the mining industry.

3.9 The transport sector

The railway industry – or rather, the solitary state-owned rail freight monopoly, Transnet – is perhaps the most dependent on mining of all. Coal alone accounts for 60% of the organisation's revenue, with transport from coal mines to many Eskom power stations, as well as for export via coal terminals at Richards Bay, Durban and Maputo.⁴³

Without the mining sector set on a course for future growth, a large proportion of the metal and engineering sector's market will remain in the doldrums.

Besides railways, the truck transport industry also relies heavily on the mining industry as customers. The industry provides specialised trucks for underground use, on-site transport, bulk carriers and stockpiling management services. Moving both ore and mining equipment, trucks service mining companies of all sizes. Especially small and medium-sized miners tend to outsource their logistics needs to specialist companies.

According to the estimates of national expenditure in the 2018 national budget, Transnet plans to invest R229.2 billion in capital expenditure across its operating divisions to sustain and expand capacity, particularly in rail, port and pipeline infrastructure.⁴⁴ Much of this expansion is necessitated by the transport needs of the mining industry. Examples are improving the rail network to new coalfields in the Waterberg, to facilitate transport to Richards Bay, and extending the railway line between Ngqura, the port in Coega, near Port Elizabeth, and manganese mines in the Kalahari region north-west of Kuruman, more than 1 000km away.

3.10 The energy sector

Eskom is the largest spender in the public sector. New construction by Eskom amounted to R74.7 billion, which is 27.5% of all public sector expenditure, and 39.6% of public sector expenditure on new construction.⁴⁵

In the financial year ending 31 March 2018, Eskom produced 221 936 GWh of electricity. Of that, 91% came from coal-fired power stations, burning 115.5 million tons of coal.⁴⁶ Koeberg nuclear power station accounted for 6.4%. Combined, that accounts for 97.4% of all South Africa's electricity, and most of the rest came from pumped-storage schemes. Renewable energy will have little impact on Eskom's need for coal in the short to medium term.

By 2030, coal is still expected to account for 44.6% of installed electricity generation capacity, according to the draft Integrated Resource Plan (IRP) published in August 2018.⁴⁷

And that's only a plan. The IRP warns: 'The timing of new additional capacity as indicated ... can change (move back or forward) depending on what happens with the projected electricity demand and or Eskom's existing plant performance.'⁴⁸

Eskom earned 85c in revenue from each kWh of electricity it delivered in 2017/18, which makes electricity from new independent power producers (IPPs), at a reported 222c/kWh, a dead loss for the state-owned enterprise.⁴⁹ In stark contrast, Eskom's cost for electricity generated from coal is a mere 30.9c/kWh, and for nuclear energy, it's only 9.4c/kWh.

This underscores the key importance of mining to the energy sector. Former Eskom CEO Matshela Koko refused to sign further power purchase agreements in 2016 because of their detrimental impact on Eskom.⁵⁰

The Nelson Mandela Bay Business Chamber has called on the National Energy Regulator of South Africa (NERSA) to halt the roll-out of new IPPs, because of their 'catastrophic impact' on Eskom.⁵¹

The Coal Transporters Forum has approached the Pretoria High Court to set aside dozens of power purchase agreements with IPPs, on the grounds that NERSA authorised them without proper public consultation. Its court papers also paints a picture of Eskom's renewable energy drive as a financial disaster for consumers and an economic disaster for the country.⁵²

Mining is the single largest contributor to economic output in four out of the nine provinces: the North West Province, in which mining accounts for 30% of GDP; Limpopo, where mining accounts for 25% of GDP; Mpumalanga, where mining, predominantly of coal and copper, contributes almost a fifth to GDP; and the Northern Cape, where mining also accounts for nearly a fifth of GDP.

The coal sector, via coal-to-liquids specialist Sasol, also accounts for a third of South Africa's liquid fuel consumption. This coal also indirectly produces numerous petro-chemical by-products, such as plastics, which is a major part of Sasol's business.

The country's primary energy supply, which includes transport fuels, consists predominantly of coal or coal derivatives. In 2016, coal accounted for 70% of total primary energy consumption in South Africa, followed by oil, nuclear and natural gas, with renewables limping in last at less than 2%.⁵³

The mining industry, and coal in particular, will remain critical to the energy sector for a long time to come.

3.11 Provinces, cities and towns

Despite its comparatively low contribution to the national GDP, mining is an extremely important industry in the regions in which it operates.

It is the single largest contributor to economic output in four out of the nine provinces: the North West Province, in which mining, particularly of platinum, accounts for 30% of GDP; Limpopo, where mining of diamonds, iron ore and other minerals account for 25% of GDP; Mpumalanga, where mining, predominantly of coal and copper, contributes almost a fifth to GDP; and the Northern Cape, where iron ore dominates and mining also accounts for nearly a fifth of GDP.⁵⁴

Johannesburg was founded on mining in 1886, and became South Africa's largest and most vibrant economic hub as a consequence. It can no longer be considered a mining town, however, having long since diversified its economic profile.

However, six of South Africa's 16 largest towns, measured by contribution to GDP, are still substantially dependent on mining.⁵⁵ This includes not only platinum but also the mining of coal for the produc-

tion of liquid fuel and electricity and the manufacture of various types of steel from iron ore mined in South Africa. These towns are: Rustenburg, Middelburg in Mpumalanga, Witbank, Secunda, Sasolburg, and Thabazimbi.

A great many smaller towns also depend crucially on the mining industry. An example is Kathu, which lies 40 kilometres from Kuruman in the Northern Cape.⁵⁶ Just outside Kathu is the Sishen mine operated by Kumba Iron Ore, nearly 70% of which belongs to Anglo American. Without mining, Kathu would probably not exist. Today it has free-standing houses, new shopping centres, churches, shops, a police station, a private hospital, and even a private school. The nearby Sishen airport offers flights to Johannesburg.

Kimberley, Klerksdorp, Newcastle and Benoni all have their roots in mining, and Westonaria, Carltonville and Welkom still depend largely on the mining industry.

Mineral exports support the industry of several towns. The most obvious are harbour towns like Richards Bay, which exports coal and phosphate products, and hosts Richards Bay Minerals, a titanium producer that accounts for half of KwaZulu-Natal's mining output. Saldanha Bay is the destination and export port for iron ore mined 861km away at Sishen in the Northern Cape. A dedicated rail line serves to link the mine and the port. The port of Ngqura is also being expanded to cater for manganese mined in the Kalahari region north-west of Kuruman.⁵⁷

The town of Ermelo hosts Transnet's largest marshalling yard, where trains from nearly 50 coal sidings from mines in the region are assembled into 200-car behemoths destined for Richards Bay.⁵⁸

Mining undergirds local economies all over the country, and its decline would be catastrophic for many towns, cities and provinces.

Mining in South Africa has been a pioneer of technology, and requires highly sophisticated skills in fields ranging from geology to metallurgy, and chemistry to engineering. South African mining companies were world leaders in mining gold, developing many of the techniques that are used worldwide.

3.12 Skills and technology

The mining industry is often perceived as a low-tech, labour-intensive industry. This image is far from the truth, however. Mining in South Africa has always been a pioneer of technology, and requires highly sophisticated skills in fields ranging from geology to metallurgy, and chemistry to engineering. The Minerals Council, the former Chamber of Mines, once employed 600 research staff itself.

South African mining companies were world leaders in mining gold, developing many of the mining and processing techniques that are now used worldwide. The world's deepest mines are in South Africa, presenting uniquely challenging working conditions requiring sophisticated cooling and ventilation techniques. The top-ten list of deepest mines is almost entirely South African, save for one American, one Canadian and one Indian mine, in fifth, seventh and eighth places respectively.

The list of South Africa's deepest mines are all gold mines. It includes Mponeng, formerly known as Western Deep Levels, south-west of Johannesburg, which is the only mine in the world that is more than four kilometres deep. That is almost twice the depth of the world's deepest cave systems in the region of Abkhazia, Georgia, and five times as deep as the world's tallest building, Dubai's Burj Khalifa, is tall.

Also on the list are the TauTona Gold Mine, Savuka Gold Mine, Driefontein Mine, Kusasalethu Gold Mine, all of which lie on the West Rand of Johannesburg, near Carltonville. The Moab Khotsoeng Gold Mine near Klerksdorp and the South Deep Gold Mine south-west of Johannesburg round out the top ten.⁵⁹

The mining industry directly led to the establishment of the Universities of the Witwatersrand and Pretoria, and continue to fund many higher education buildings, libraries, professorships and lecture-ships, as well as funding the university education of thousands of students.

The mining industry spends about R1.2 billion per year on research and development to make mining more efficient, safer and less costly. This ranks it third, ahead of all other sectors, except manufacturing in second place, and finance, real estate and business services in first.⁶⁰

3.13 Consumers

Mining has brought tremendous benefits to society. The development of civilisations in ancient history has been characterised by each era's mining prowess: the Stone Age, the Bronze Age, and the Iron Age. To this day, however, the high-tech economy of modern society rests upon the products of the mining industry.

Products that owe their existence to mining include glass, jewellery, electricity, liquid fuels, solar panels, wind turbines, bicycles, cars, ships, aircraft, spacecraft, roads and bridges, paraffin and coal stoves, water pipes, electrical wires, burglar bars and security gates, door handles, cutlery and crockery, plumbing fixtures, kitchen appliances, fuel cells, air conditioners, heaters, paint pigments, nuts and bolts, computers, telescopes, tin cans, alloy wheels, tyres, plastics, watches, railway tracks, dentistry, pacemakers, surgical implants, medical equipment, lawnmowers, internal combustion engines and electrical motors, mirrors, pharmaceuticals, roads, street lights, traffic signs and traffic lights, cellphones, catalytic converters, metal furniture, airbags and consumer electronics.⁶¹

There is a complex relationship between the cost of raw materials and the prices of consumer goods. It is undeniable, that improved and more efficient mining contributes to both the rising sophistication of manufactured goods, and keeping their prices within reach of growing numbers of consumers.

From low-cost housing to space tourism, almost all raw materials not derived from farming, forestry or fishing are produced by the mining industry.

In real terms, commodity prices have fallen dramatically over time.⁶² Adjusting for South African inflation, metals cost on average only 15% of what they did three decades ago.⁶³

There is, of course a complex relationship between the cost of raw materials and the prices of consumer goods. Many goods become increasingly sophisticated over time, which increases both their price and value, and makes it impossible to compare prices over time. It is undeniable, however, that improved and more efficient mining contributes to both the rising sophistication of manufactured goods, and keeping their prices within reach of growing numbers of consumers.⁶⁴

4 How the mining industry can be revitalised

Mining is performing below its potential. The above overview of the mining industry and its place in society and the economy highlights in broad strokes areas that would benefit from reform.

4.1 Simplify and ease regulations

The Minerals and Petroleum Resources Development Act of 2002 (MPRDA) has unnecessarily complicated the regulatory environment for mines. As a result, South Africa lags behind 12 out of 15 African countries in the Fraser Institute's policy perception index.⁶⁵ Leading the way in Africa are Botswana and Namibia.

In an address to the Mining Indaba in 2017, the IRR's CEO, Frans Cronjé, elaborated on the difference between Botswana and South Africa: 'Both countries embarked on major changes to their mining

laws in the late 1990s, but Botswana opted to reform its 1977 mining legislation so as to bring it into line with international best practice.’⁶⁶

Cronje continued:⁶⁷

The new mining law Botswana adopted in 1999 is reasonably predictable and clear. Mining rights depend, in the main, on applicants having ‘adequate financial resources, technical competence, and experience to carry on effective mining operations’. The mining minister and his officials have relatively little administrative discretion, making the licensing process transparent and predictable. Time frames for decision-making are also brief: 60 days for prospecting licences and 20 days for large-scale mining licences.

The obligations imposed on the holders of mining licences are also stable, having remained effectively the same since the statute was adopted. Nor has Botswana threatened the mining industry with nationalisation or expropriation, whether direct or indirect.

By contrast, South Africa’s MPRDA introduced complex and costly regulations, and a great deal of legislative vagueness and uncertainty. As a result, its policy perception index has fallen since the introduction of the MPRDA. In the five years since 2013 alone, its rating weakened from almost 57 to below 43 out of 100.

Despite having a far worse rating on minerals potential than South Africa (50 vs 75), Botswana’s high policy perception index has consistently made it a more attractive place to invest in mining than South Africa. The same is true for Namibia.

South Africa’s mining law needs to be simplified and streamlined, along the model of Botswana’s law, and investors need assurances that the goalposts will not keep shifting, as they do now. In an industry where investment cycles are long, prices are volatile and profitability is marginal, investors need regulatory efficiency and certainty.

South Africa’s MPRDA introduced complex and costly regulations, and a great deal of legislative vagueness and uncertainty.

We have also seen that South Africa’s environmental, health and safety regulations are onerous, complicated and expensive. It is unwise, on the part of a government, to impose regulations that its own bureaucrats cannot understand or enforce. This leads to extremely costly compliance processes and years of delays while dozens of experts and consultants wrangle over the thousands of pages of documentation the government requires.

Regulatory red tape kills businesses. It costs money. More importantly, it prohibits companies from acting quickly on perceived opportunities, with the result that many potentially profitable opportunities are left unexploited. This is an unnecessary drag on the economy.

Safety regulations that require that entire sites, potentially with multiple mines, be shut down when an accident happens, cost companies millions in lost income. This reduces the money available to fund employment and reinvest in mine development. For marginal mines, those millions can make the difference between success and failure.

Mining policy and regulations ought to be light-touch, predictable, competitive and stable. That’s the very opposite of the reality for the mining industry today.

4.2 Evolve empowerment principles

Transformation and empowerment are among the most important challenges facing South Africa. Al-

though much has been achieved in the almost 25 years since the advent of democracy, much more must happen to overcome the legacy of apartheid and stimulate rising economic prosperity for all.

After ten years of decline and stagnation following the advent of democracy, South Africa's Human Development Index, which measures living standards on a far wide range of measures than mere GDP per capita, has risen steadily since 2004.⁶⁸

In 1994, 5 million black South Africans were employed. In the third quarter of 2018, more than 12 million black South Africans had jobs, out of a total of 16.2 million employed people.⁶⁹ From a low of 53.6% in 2010, the labour force participation rate has risen steadily to 59.9% in 2018. Despite the persistently high unemployment rate, the idea that growth has been 'jobless' is an oversimplification that is not borne out by the statistics.

Average per capita incomes (at current prices) for black South Africans rose from R6 000 in 1996 to R34 500 in 2016, an increase over the twenty-year period of 470%, according to IRR researcher Marius Roodt.⁷⁰ This is still way below the average per capita income for white people, which stood at R226 000 in 2016, but it is progress.

There are many other areas in which either the government or the private sector has delivered progress, not only for the rich and well-connected, but also for the poor. All of this progress has been predicated on a growing private-sector economy, without which there would be nothing to tax and redistribute.

Ownership deals rarely benefit those who need it most: the poor, the unemployed, the unskilled. They do not benefit the presently disadvantaged.

Black economic empowerment, the policy of transferring part-ownership of companies to others on the basis of race, has contributed relatively little to this progress. The poor, the unemployed and the disadvantaged often climb the economic ladder without the aid of government's narrow empowerment policies.

In 2014, Statistics South Africa declared that the country was winning the war on poverty.⁷¹ Since then, however, South Africa's economic growth rate has stagnated. In the last three years, GDP growth has averaged only 0.9% per year,⁷² which is below the population growth rate of 1.25%.⁷³ This inevitably leads to increasing poverty and unemployment.

This is despite – or because of – extensive efforts at black economic empowerment. The mining industry has transferred more than R200 billion in value in black economic empowerment deals.⁷⁴ Its performance against other transformation targets, exceeding the requirements of the 2011 Mining Charter, and not far off the new requirements set out in the 2018 Charter, are recorded above. The Minerals Council rightly trumpets its achievements in empowering those it terms 'historically disadvantaged South Africans.'

But most of the benefits of these policies have accrued to people who are already fairly well-advanced on the socio-economic ladder, enjoying good education and good business connections. These ownership deals rarely benefit those who need it most: the poor, the unemployed, the unskilled. They do not benefit the presently disadvantaged.

The IRR has devised a radical new alternative to black economic empowerment, which it calls 'economic empowerment for the disadvantaged.'⁷⁵

Roodt notes that the Gini coefficient, which measures income inequality, has declined for all races,

but has increased for black South Africans. This suggests that black economic empowerment has enriched only the few, while leaving the vast majority mired in poverty.

As long ago as 2009, Moeletsi Mbeki, the brother of former president Thabo Mbeki, declared that black economic empowerment had failed, saying that South Africa should scrap its drive to give black people a slice of the white-dominated economy because it stifles growth and spurs corruption.

‘If we keep going with these policies, the question is what will collapse first, BEE or the economy, or the country?’ he said, telling the *Mail & Guardian* that the policy entrenches the country’s shocking economic inequalities by creating a culture of cronyism and entitlement that discourages black entrepreneurship and education, keeping millions in poverty.⁷⁶

The various Mining Charters are examples of exactly the sort of prescriptive policy that has enriched a few, but failed to benefit either the mines or the majority of the population.

EED is designed to shift the focus away from numerical targets to the inputs which would improve the lives of poorer people. This policy would focus on four ‘Es’ – rapid economic growth, excellent education, more employment, and the promotion of vibrant and successful entrepreneurship.

Under an EED policy, the current BEE scorecard would be replaced by an EED scorecard. This revised scorecard would see businesses earn points for contributions of different kinds. Points would be awarded for the investments a company makes, the profits it generates, the jobs it sustains or creates, the goods and services it buys from other suppliers, the innovation it helps to foster, and the contributions it makes to tax revenues, export earnings, and foreign currency inflows.

At the same time, EED would create opportunities for all South Africans, rather than a politically connected few.

Under an EED policy, the current BEE scorecard would be replaced by an EED scorecard. Points would be awarded for the investments a company makes, the profits it generates, the jobs it sustains or creates, goods and services it buys from other suppliers, the innovation it helps to foster, and the contributions it makes to tax revenues, export earnings, and foreign currency inflows.

Roodt writes: ‘Using an EED scorecard for mining, companies in the sector would earn EED points for contributions in four areas – economic, labour, environment, and the community. The EED contribution for the economic component would be ranked most highly, as this is the pillar which would attract investment, increase the growth rate, generate jobs, and provide procurement opportunities for a host of businesses. An EED approach – rather than a BEE approach – would encourage investment, rather than discourage it, which would increase employment, as well as stimulate growth.’

4.3 Reduce taxation

South Africa has one of the highest tax burdens in the world. The total tax revenue to GDP ratio was 25.8% in the 2017/18 financial year.⁷⁷ Although down from its high of 28.9% in 2015, this remains much higher than the average in Africa (18.2% in 2016⁷⁸) and the world average of 14.9%.⁷⁹ In fact, South Africa is in the top 20 most-heavily taxed countries in the world, counting only the 179 countries for which tax burden data between 2013 and 2017 is available.⁸⁰

South Africa’s corporate tax rate has declined in recent decades. It is now 28% of taxable income, down from an all-time high of 50% in 1991.⁸¹ This also applies to mining companies, with the exception of gold mines, which have a unique tax formula that produces a different rate for different companies, depending on the ratio of income to revenue.

But even at 28%, however, South African corporate tax rates are relatively high. It ranks 49th out of 160 countries for which data are available.⁸² This does not take into account the 20% tax on dividends,

which was increased from 15% on 1 March 2017, nor the effective 14.5% tax rate on capital gains applied to companies.⁸³ It also ignores royalties of up to 7% paid for the right to mine,⁸⁴ which added up to total revenue of R7.5 billion in 2017/18.⁸⁵

‘Studies carried out by the OECD show that corporate income tax is the least growth friendly type of tax, followed by personal income tax and indirect taxes, respectively,’ reported PwC in 2015.⁸⁶ The consultancy proposed pro-growth tax reform that would shift taxes away from corporate income tax and personal income tax to indirect taxes and VAT in particular.

A number of benefits would arise from such a shift. South Africa’s reliance on corporate income taxes and the volatile nature of corporate earnings would be reduced. As such, tax revenues would be more stable and a little less vulnerable to economic shocks. Lower taxes on income would promote greater levels of savings, investment and entrepreneurship and would therefore be more conducive to investment-led growth. Increasing taxes on consumption would act as a deterrent to high levels of consumption, further incentivising savings and reducing reliance on unsustainable consumption-led growth. A reduction in consumption would, in addition, have positive implications for South Africa’s high current account deficit.

It proposes that the impact of consumption taxes on the poor be ameliorated by social security reform and personal income tax relief.

South Africa’s labour laws have long been criticised for their inflexibility and inefficiency, which undermines the country’s competitiveness.

This implies that it is necessary to change the fiscal climate. That reducing the size of government is politically unlikely does not make it impossible. There is a great deal of scope for easing the tax burden on the mining industry, its employees, and indeed all South Africa’s companies and people.

The best route to being able to do so is to re-establish the ability of the South African Revenue Service to collect tax effectively, and to slash government expenditure. Between ill-fated public works projects, a bloated public sector wage bill, unmanageable debt at state-owned enterprises, and unauthorised, irregular, fruitless and wasteful expenditure, billions could be saved to enable the government to reduce tax rates.

Doing so would boost the entire industry, from employees to shareholders, but it will serve especially to save marginal mines that are at risk of closure today.

4.4 Increase labour flexibility

South Africa’s labour laws have long been criticised⁸⁷ for their inflexibility and inefficiency, which undermines the country’s competitiveness. The term flexibility refers to the ease with which companies can hire and fire workers, and the speed with which wages adjust to labour demand and supply, as well as other market conditions, such as employer profitability.

In the last decade, South Africa has fallen 22 places to 67th in the World Economic Forum’s Global Competitiveness Rankings, out of 140 countries.⁸⁸ Labour market flexibility, in which it ranked 81st was a drag on competitiveness.

South Africa ranked particularly low on confrontation in labour-employer relations (136th), flexibility of wage determination (133rd out of 140), hiring and firing practices (111th out of 140 countries), and policies to draw the unemployed back into the workforce (106th).⁸⁹

The consequence of inflexible labour and powerful unions is that the mining sector pays the highest wages for industrial workers in the country.⁹⁰

In theory, the higher the unemployment rate in a region or sector, the more wages need to adjust downwards to compensate. Non-unionised workers are quick to respond to a more competitive labour market by lowering their wage demands. If wages do not, or cannot, adjust, the result is persistent unemployment.

In the mining industry, labour is largely unionised. This dramatically reduces labour market flexibility, especially in the short run. Over longer time scales, even unionised wages do tend to adjust to market conditions, according to a 2015 study,⁹¹ but the persistently high unemployment rate suggests they do not adjust far or fast enough.

Unionisation is great for workers. It is not, however, great for industry, for the economy, or for the unemployed. Although employees have every right to organise and join unions as they see fit, the legislated power balance between employers and unions ought to be placed on a more liberal footing, if the economy is to quickly adjust to the changing demands of the market.

While larger firms may be able to absorb this inflexibility, albeit at lower profit margins, smaller and more marginal mines cannot. A more liberal labour market is vital not only in volatile economic conditions, but especially so in the future, when automation will be the key to maintaining mining competitiveness.

The Department of Trade and Industry's Industrial Policy Action Plan (IPAP), is surprisingly clear about the problems facing mining, and what the solution should be:⁹²

The rising use of automation and other digital technologies inevitably places pressure on labour. It is essential, if mining is to remain competitive, that it is reasonably possible and inexpensive to adjust the size and expense of the workforce required in mines.

The competitiveness of the South African mining industry will be critical to its survival, especially when commodity prices are stagnant and operating costs are rising. The DTI is working with leading mining companies... who have come to realise that in order to remain competitive they must innovate and use new technologies – sometimes from lateral industries – to transform their operations. This includes seeking improvements in mine safety, real-time information management, artificial intelligence and environmental impact issues.

New mining methods will be central to enabling the sector to remain a global player in an industry that is moving closer towards the 'digital mine' of the future, integrating the entire value chain. Mining 4.0 is fast becoming a reality and technology is the key driver.

The rising use of automation and other digital technologies inevitably places pressure on labour. In fact, the high wages paid to miners make automation even more attractive to mining companies. It is essential, if mining is to remain competitive, that it is reasonably possible and inexpensive to adjust the size and expense of the workforce required in mines.

5 Epilogue: What happens when mining dies

The fate of towns where the mining sector declines is grim. Welkom is one of the two hardest-hit towns in the country, and demonstrates the realities of such a decline.

Welkom was founded in 1948, to serve the needs of Anglo American in the newly discovered Free State gold fields. At the time, these were the richest gold reserves in the world. The region also has reserves of coal, diamonds, and other minerals. It was declared a municipality in 1961, and achieved city

status in 1968. It was the gold rush town of South Africa in the 1960s, epitomised by hosting the largest Porsche Club in the country.⁹³

Beginning in the 1980s, the town's gold mines began to decline. This dragged the entire town down. Thousands of jobs were lost. In 1987, the mining sector in the gold fields region surrounding Welkom employed 184 600 people, representing 67% of the total workforce. By 2010, almost 150 000 jobs had been lost. Only 35 700 jobs were left, accommodating only 42% of the workforce.⁹⁴

The vast majority of the region's manufacturing sector was linked to mining. Seventy-one percent of that sector's jobs vanished between 1987 and 2010.

During the same time, agriculture jobs fell from 11 200 to 6 000, construction jobs crashed from 15 900 to 2 600, trade employment went from 17 600 to 7 800, and services jobs fell from 29 700 to 22 000. Transport jobs remained relatively stable. The only sector that increased employment, finance – which went from 2 500 to 4 100 – was woefully inadequate to make up for the losses.

In total, 275 200 people were employed in the Welkom gold fields region in 1987. By 2010, that had declined to a mere 84 700. Some 190 500 jobs had been lost across the economy.⁹⁵

The Lejweleputswa District Municipality, which has its seat in Welkom, hosted fully one third of the entire Free State's unemployed people in 2010, rising from just over a quarter in 1996. The unemployment rate itself rose from 35% in 1996 to 53% in 2008, and the poverty rate rose from 36% in 1996, which was lower than the provincial average, to 61.3% in 2006, significantly higher than the provincial average, even though the provincial poverty rate had also climbed from 39.4% to 51.7% during that period.

The history of Welkom shows in microcosm what might happen if the mining industry were to decline further.

Welkom's population shrank by more than 90 000 people, from 249 400 in 1996 to 158 600 in 2010. The surrounding gold fields region lost over 120 000 people, declining from a population of 497 400 to 377 000.⁹⁶

Numerous businesses closed their doors, commercial rents plummeted, and house prices were lower in 2010 than they were in 2001. Welkom's economy is in tatters, with the town's business and community leaders casting about for business opportunities in new industries that might help to arrest the decay, such as tourism and technology.

The town continues to shrink in size, as well as in business and consumer confidence. Despite some flickers of light in new industries and small enterprises, on most economic indicators it is the worst-performing urban area in South Africa.⁹⁷

The history of Welkom shows in microcosm what might happen if the mining industry were to decline further.

For example, if the coal industry in South Africa were to retrench significantly, as desired by many proponents of greener energy, tens of thousands of jobs would be lost in the coal fields and coal-fired power stations, primarily on the Highveld. The economies of towns like Middelburg and Witbank would be dealt a crippling blow, as they lost the spending power of laid-off employees. They would also lose the spending of mining companies themselves on a wide variety of local products and services, such as equipment hire and sales, mechanic services, transport and warehousing, furniture and office supplies, and catering and supermarkets.

Many smaller towns would be hit equally severely. Railroad towns like Ermelo would take a huge knock. The loss or radical downsizing of the Richards Bay coal terminal would cost a great many direct jobs, but also many jobs in supporting industries.

South Africa's coal-to-liquid industry – namely Sasol – would be crippled, with disastrous consequences for the towns of Secunda and Sasolburg. Downstream customers of Sasol's coal-derived products, including the petroleum, chemical and pharmaceutical industries, would be hard-hit.

Rail transport, trucking companies and airlines would see a sharp reduction in demand in all these towns. Businesses of all sizes that rely on the mining and transport sector would close their doors. Accommodation providers would face a collapse in occupancy rates, leading them to lay off numerous cleaners and catering staff.

South Africa urgently needs to improve the regulatory environment for the mining sector, lest the fate of Welkom befalls the rest of the country. Mining remains a critical industry with an outsized influence on the economy.

The mining industry provides massive support for the surrounding economy, and conversely, the collapse of any mining sector has staggering consequences for the provinces, cities, towns and secondary industries that depend upon it.

South Africa urgently needs to improve the regulatory environment for the mining sector, lest the fate of Welkom befalls the rest of the country. Mining remains a critical industry with an outsized influence on the economy. The legislative uncertainty and regulatory burden on mining companies must be substantially reduced if the sector is to recover from its stagnation and flourish as it once did. The alternative is too awful to contemplate, for all of us.

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