THE EXTENT, NATURE AND ECONOMIC IMPACT OF THE JUNIOR AND EMERGING MINING SECTOR IN SOUTH AFRICA IN 2025

AN UPDATE FROM THE 2019 REPORT

FOR

THE JUNIOR AND EMERGING MINERS' DESK
MINERALS COUNCIL SOUTH AFRICA

BY

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EXECUTIVE SUMMARY

In July 2025, the Junior and Emerging Miners' Desk (JEMD) of the Minerals Council South Africa (Minerals Council) conducted research to update a report that was compiled in 2019. That report titled *The extent, nature and economic impact of the junior and emerging mining sector in South Africa* was published in July 2019 (Minerals Council, 2019).

This report shows that the Minerals Council definition for the various subsectors (i.e., majors, juniors, small-scale operations, etc.) remains the most up to date and relevant definition for application in the South African mining industry.

	Prospectors	Mine developers	Mining enterprises	Mining enterprises	Mining enterprises	Mining enterprises
	(Exploration)	(Construction and development)	Micro-scale mining	Small-scale mining	Medium-scale mining	Large-scale mining
Criterion 1 Licensing	Prospecting rights holder	Mining rights holder	Mining rights or permit holder	Mining rights or permit holder	Mining rights holder	Mining rights holder
Criterion 2 Revenue from specific mining right area		First year of a mining right until the mine first has a positive revenue	Revenue in the past tax year < R12.2 million	Revenue in the past tax year R12.2 – R61.1 million	Revenue in the past tax year R61.1 – R612 million	Revenue in the past tax year >R612 million
Criterion 3 Employees			< 150 employees	<250 employees	<500 employees	>500 employees
Criterion 4 Company or controlling shareholder aggregated revenue from other mining rights	Zero revenue generated from other mining rights	Exceeds R612 million	Exceeds R612 million	Exceeds R612 million	Exceeds R612 million	Exceeds R612 million

This research indicates that the Department of Mineral and Petroleum Resources (DMPR) of South Africa has **issued a total of 2,065 mining rights and permits** to mining companies for a wide variety of commodities. Based on the South African Revenue Services (SARS) statistics, it is estimated that there are around **5,100 prospecting licences (PLs)** issued in South Africa.

Around 77% of mining licences and permits are allocated to junior mining companies (juniors) and 23% to major mining companies (majors). Juniors, however, only generate 10% (up from 8% in 2019) of the total revenue (turnover) generated by the South African mining industry. Herein lies the strategic opportunity for the country, and government must focus its efforts on supporting and growing junior and emerging miners (JEMs) to become the majors of the future. Gone are the days where big mining houses, who historically had the balance sheets to fund exploration, did all the exploration in-house. That is the fundamental difference between South Africa attracting 8% of global exploration spend in 2001 (Shabangu, 2010) and, according to the DMPR's Investment Promotion Directorate, managing to attract less than 0.5% of global exploration spend in 2024.

JEMs have grown their nominal turnover and expenses between 2018 and 2024. They remain non-profitable as a subsector, with the bulk of their projects at exploration stages and not yet generating any revenue.

	2024	2018	Growth
Revenue per annum	R122.8 billion	R54.4 billion	+R68.4 billion 126%
Expenses per annum	R122.4 billion	R55.5 billion	+R66.9 billion 120%
Profit/(loss) before tax incl. inventories deducted	(R0.09 billion)	(R1.1 billion)	92%

Along with growth in turnover between 2018 and 2024, JEMs have also created jobs. Although there are no data sets available from the DMPR that segment mining jobs per subsector size, Stats SA data does provide employment costs per mining sector size. From this the following is deduced:

	2024	2018	Growth
Total mining industry jobs	475,009	456,706	18,303
JEM jobs	58,495	40,300	18,495
% JEM jobs of total	12.3	8.8	
Jobs multiplier 7 (potential other jobs created because of JEM jobs)	409,465	282,100	127,365

The mining industry only added 4% in jobs between 2018 and 2024. JEMs added 45% more jobs over the same period, which indicates that the bulk of new job opportunities came from the junior sector.

With majors spending less on exploration, the following questions arise:

- Have government policies alienated traditional big mining houses? Have shareholders and boards of these historic power houses voted with their feet? Has the uncertainty over security of tenure on mining rights weighed too heavily on shareholders who took their capital elsewhere?

- Has the opacity in the DMPR's administration of licensing processes, coupled with delays in the procurement and rollout of a cadastral system, contributed to sluggish growth of the industry? Are delays in the finalisation of legislation on artisanal mining holding the sector back? Is the apparently inconsistent application of Mining Charter III provisions in terms of prospecting rights a contributing factor? JEMs are sceptical and speculate that a fully implemented mining cadastre may be five years away. Will this delay investment into the sector? The South African Government's 2022 exploration strategy set an ambitious target of attracting US$900 million annually by 2025, which would represent 5% of the estimated global total, but what would make the country achieve this target?
- South African mining has fallen victim to criminality and corruption on a grand scale with no capacity from the State to stop the tsunami. It is easier to operate an illegal small-scale operation than to comply with all the legal requirements, and there are few or no consequences for illegal miners. It is estimated that illegal mining costs the South African economy between **R60 billion and R70 billion** annually in lost revenue, taxes and royalties. Will the current policing regime stem the illegal mining tide?
- The burden on mines to fulfil what is seen as government's obligations in communities to build and support hospitals, schools, water infrastructure, electricity infrastructure, job creation and roads have become untenable.

Although the **R400 million Mining Exploration Fund** (MEF) that is co-funded by the Industrial Development Corporation (IDC) and the DMPR is far from being adequate, it is a crucial and positive step towards securing the future of mining in South Africa. National Treasury also needs to be convinced of the strategic value that a strong JEM sector holds for the long-term sustainability of the South African economy.

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LIST OF ABBREVIATIONS AND ACRONYMS

Acronym	Description
AIM	Alternative Investment Market
AltX	Alternative Board of the Johannesburg Stock Exchange
ASX	Australian Stock Exchange
AUS$	Australian Dollar
BFS	bankable feasibility study
CEO	chief executive officer
CPR	Competent Persons' Report
DFFE	Department of Forestry, Fisheries and the Environment
DFS	definitive feasibility study
DMPR	Department of Mineral and Petroleum Resources
DMR	Department of Mineral Resources
DMRE	Department of Mineral Resources and Energy
DPWI	Department of Public Works and Infrastructure
dtic	Department of Trade, Industry and Competition
DWS	Department of Water and Sanitation
ECSA	Engineering Council of South Africa
FID	final investment decision
FTS	flow-through shares
FY	financial year
GDP	gross domestic product
Hang Seng	Hong Kong Stock Exchange
IDC	Industrial Development Corporation
IQSA	Institute of Quarrying of South Africa
IRR	Institute for Race relations
JEMD	Junior and Emerging Miner's Desk
JEMC	junior and emerging mining companies
JMC	junior mining company
JORC	Joint Ore Reserve Committee (Australasian reporting Code)
Juniors	junior mining companies
JSE	Johannesburg Stock Exchange
LSE	London Stock Exchange
Majors	major mining companies
MEF	Mining Exploration Fund
MPRDA	Mineral and Petroleum Resources Development Act
NI 43-101	Canadian National Instrument for reporting on Resources and Reserves
NSE Act	National Small Enterprise Act 102 of 1996
PFS	pre-feasibility study
PGM	platinum group metals
PhD	Doctor of Philosophy
PIC	Public Investment Corporation
PL	prospecting licence
Pr.Eng.	Professional Engineer
SADPO	South African Diamond Producers' Organisation
SAIMM	South African Institute for Mining and Metallurgy

Acronym	Description
SAMDA	South African Mining Development Association
SAMREC	South African Mineral Resource Committee
SAMREC Code	South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (2016 Edition)
SAPS	South African Police Service
SARS	South African Revenue Service
SMME	small, medium and micro enterprises
Stats SA	Statistics South Africa
TSX	Toronto Stock Exchange
R'000	thousand rand
UK	United Kingdom
USA	United States of America
US$	United States dollar
ZAR	South African rand

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1. INTRODUCTION

In October 2018, the JEMD of the Minerals Council (then the Chamber of Mines) commissioned Dr. Hermanus Jacobus Kriel to conduct research into the junior mining sector in South Africa. The research report titled *The extent, nature and economic impact of the junior and emerging mining sector in South Africa* was published in July 2019 (Minerals Council, 2019).

Dr. Kriel has 30 years' mining experience and has since published his PhD thesis titled *A proposed new integrated dispensation model to unlock the value-adding potential of the junior mining sector in South Africa – an international comparison* in 2023 (Kriel, 2023).

In July 2025, the JEMD of the Minerals Council commissioned research to update the 2019 findings and report.

1.1 Background and context

The JEMD of the Minerals Council conducted and contributed to various studies into the junior mining sector of South Africa during the past 20 years. This 2025 research has considered all previous work conducted by the Minerals Council and has a primary goal of documenting the current state of the junior mining sector based on information that is in the public domain. This research is a desktop exercise and is by no means comprehensive or exhaustive but must form a strong "state of the South African junior mining sector" foundation, which may be useful for further in-depth research.

This research demonstrates that a robust and well-supported junior mining sector is essential for creating an additional 50,000 direct mining jobs and 350,000 secondary jobs supporting the mining industry in South Africa over the next decade and beyond. Furthermore, it will significantly increase tax revenues for the Government, providing funds for the maintenance and expansion of national infrastructure. Junior mining can, and should, play a vital role in aiding government efforts to accelerate economic growth beyond population growth and inflation rates.

Over the past 158 years, South Africa's mining sector has been a key contributor to the nation's economic development, currently making it the 38th largest economy worldwide. However, in recent years, the sector has underperformed relative to its potential, missing opportunities to generate new employment for South Africans. The sector's contribution to the country's GDP has declined from approximately 12.5% in the 1980s to below 7% in 2023. Although South Africa attracted over 8% of global exploration expenditure in 2001, this share has diminished to less than 1% in 2025, underscoring the urgent need for growth in the South African mining industry, and the potential of the junior and emerging mining sector.

South African junior miners struggle to attract foreign investment due to, among other reasons, perceptions of an uncertain and unattractive regulatory environment. At present, South Africa offers limited compelling incentives to attract foreign investors to fund mining projects. This research reveals that the government could benefit significantly by implementing tax incentives like flow-through shares (FTS), which have been pivotal in establishing Canada's leading junior mining sector. According to the Minerals Council, using the PwC Social Accounting Matrix Model, an effective FTS tax incentive could generate R15.8 billion in tax revenue per successful mine - including royalties, income tax and withholding tax of R9.6 billion, and induced taxes of R6.2 billion (Minerals Council, 2020).

During the last six years which have elapsed since the original study was commissioned by the Minerals Council, there have been significant developments. The world has come through the COVID-19 pandemic. South Africa now has a Government of National Unity. Government published its strategy on exploration in 2022 (DMRE, 2022). In August 2024, the Department of Mineral Resources and Energy (DMRE) was split into two new entities: the DMPR and the Department of Electricity and Energy. In 2025, the DMPR published a strategy document on critical minerals and metals (DMPR, 2025).

In his 2023 PhD thesis, Dr. Kriel proposed a novel Integrated Dispensation Model to encourage government and junior miners to re-evaluate their strategies for developing a sustainable junior mining sector in South Africa (Kriel, 2023). This model aims to serve as a catalyst for economic growth and promote sustainable mining practices both locally and globally. Unlike international peers who focus more on exploration, South African junior miners tend to have a different approach. To unlock their full potential as economic catalysts, South African junior miners need to evolve into major miners. The model outlines critical steps for both regulators and junior miners to follow, providing practical guidelines to minimise delays and establish a resilient junior mining sector.

1.2 Scope and methodology of this research report

The objective of the research is to determine the current size of the junior and emerging mining sector in South Africa. This would entail updating the research findings from a 2019 study to:

- estimate the potential socio-economic impact on the sector;
- to identify impediments to the growth of the sector, which could be legislative, financial or environmental;
- to provide a short survey on sources of funding for players in the sector;
- to conduct case studies on some of the emerging issues (both positive and negative) using one of the junior companies currently a member of the Minerals Council; and
- to undertake a brief comparison of the South African sector to similar sectors in Australia and Canada.

As part of the research, all relevant data sources were utilised, including but not limited to data from the DMPR, relevant tax information from SARS, primary statistical data from Statistics South Africa (Stats SA), secondary data from reliable sources, and other research reports conducted by the JEMD.

Structured interviews (see Annexure A for the discussion framework used) were conducted with chief executive officers (CEOs) and executives from junior mining companies, as well as industry organisations such as the DMPR directorates for Small-Scale Mining, Economics and Investment Promotion, ASPASA, the South African Diamond Producers Organisation (SADPO), the Industrial Development Corporation (IDC), the Public Investment Corporation (PIC), the Junior Mining Council, and the Johannesburg Stock Exchange (JSE).

The purpose of this report is to document and quantify the findings of a desktop survey to establish:

- The number of junior, emerging, and exploration companies operating in South Africa.
- The economic impact of these junior companies on the overall mining sector.
- The number of people that this sector employs.
- The economic impact that this sector has on the broader economy in various areas, including procurement.
- The potential for growth.

The study commenced in August 2025 and had a three-month duration, with final delivery in October 2025.

1.3 The complex environment of the South African junior mining sector

This research includes examination of the reasons behind the decline of South Africa's once-dominant mining industry and investigates the potential role of the junior mining sector in revitalising it. Historically, the nation was a global leader in mining, attracting significant investment for over 150 years. However, this has changed dramatically, with major mining houses divesting from the country. Despite possessing vast mineral wealth, South Africa now struggles to attract exploration capital due to a high-risk investment environment, a lack of policy predictability and significant governance issues. This is evidenced by a sharp decline in exploration investment, from 8% in 2001 to consistently below 1% in 2022 to 2024, as capital shifts to more stable and attractive jurisdictions (Shabangu, 2010) (Kriel, 2023). The South African Government’s 2022 exploration strategy set an ambitious target of attracting US$900 million annually by 2025, which would represent 5% of the estimated global total. Achieving this target would entail significant improvements in both perceptions and the actual operating environment to attract such investment into South Africa.

The decline of the South African mining sector has severe socio-economic consequences, particularly employment and reduced contributions to the fiscus. Historically a major lever for job creation, the industry has seen opportunities dwindle due to policy choices that have prioritised other industrial sectors over the health of the mining sector. This is especially impactful for a workforce known for its hard-earned skills passed down through generations. The mining sector has traditionally also offered a path to a livelihood for many without formal qualifications, but these opportunities are now scarcer.

For junior miners the regulatory environment is particularly challenging. The regulatory landscape is complex and opaque, exacerbated by governance challenges, insufficient capacity and administrative failures within the regulatory environment. The absence of a functioning cadastre system and lack of transparency have, for instance, led to multiple parties being granted licences over the same property, causing protracted legal battles. A major barrier is the government's one-size-fits-all approach, applying the same regulations to both major and junior companies. This disproportionately affects juniors who lack the capacity and capital to navigate a system where licence approvals can take over three years and who struggle to make provisions for the large sums of money that must often be paid up-front as rehabilitation guarantees.

Another critical obstacle for junior miners is accessing capital. They often lack the resources to advance projects to a "bankable feasibility" stage, a key milestone for attracting investment. South Africa's venture capital market is underdeveloped for this purpose, forcing juniors to look for funding abroad in countries like Canada, Australia and the United Kingdom (UK), which have more mature investment ecosystems. This is compounded by a lack of government incentives for investing in the sector, a policy gap that hinders growth.

This research argues that empowering the junior mining sector would be a crucial strategic lever for South Africa's economic future. By fostering a supportive environment, junior miners can drive exploration, a function previously driven in-house by majors. This exploration is vital for discovering the next generation of large-scale mines. A flourishing junior sector could create thousands of jobs, contribute significantly to the tax base and help create a new generation of mining capitalists. By exploring how junior miners can overcome current challenges, this research seeks to outline a path for the sector to fulfil its potential, stimulate international investment interest and ultimately contribute to a more robust South African economy.

The complex environment that junior miners need to navigate in South Africa can be summarised as follows:

- To be a successful junior miner requires knowledge, capacity and experience to navigate the complexities of the industry.
- Various definitions of the junior miner exist, which causes confusion for various role players. It is proposed that the Minerals Council definition be adopted across all spheres of government and industry.

- Junior miners in South Africa today have only a small, albeit growing, economic impact and very few reach a point of profitability.
- The mining industry provides employment opportunities to those who are skilled in labour-intensive positions, but the availability of these opportunities has been decreasing over the past decade; the socio-economic impact is great. The junior mining sector could add value by creating thousands of jobs through from successful ventures.
- Government has not created an especially conducive environment for junior miners to succeed. Currently, the Government regulates junior miners in the same manner as it does major miners. Levels of compliance are extremely high and could be costly for junior players. The absence of a fully functional cadastre system continues to hamper the sector, and there is limited to no transparency for new entrants to mining as to how and to whom mining licences are awarded.
- Governance within the DMPR, where multiple parties had been issued with mining licences for the same property, with some issues leading to court cases and wasted time and money on the part of mining companies. Some mining companies are at the mercy of criminal elements and sophisticated cartels, with very little support from the South African Police Service (SAPS) and the DMPR.
- Local governments' non-delivery of basic services to communities surrounding exploration projects and mines has contributed to a significant rise in expectations from these communities that mining companies must fill the gap. This distracts mining companies from their focus on mining responsibly and profitably.
- Established mining houses can play a significant role in supporting junior miners. Junior miners can perform critical exploration processes, which can support majors in growing their project portfolios. Majors hold critical skills and capacity that can be shared with juniors, which will lead to fewer mistakes and avoidance of the loss of scarce capital.
- Junior miners find it difficult to fund their projects. They often do not have the knowledge or capacity to develop their projects to a bankable feasibility stage, which is a key milestone in attracting investment. South Africa does not have a mature venture capital market. Canada, Australia and the UK are potential markets where juniors should be able to raise capital because they have many venture capital investors, whereas South Africa does not. There are no incentives from the Government for investors into junior mining, something that requires attention to stimulate the sector for growth.
- Other countries are more attractive than South Africa from both a political risk and an investment risk perspective. At the 2010/11 Mineral Resources Budget Speech on 22 April 2010, the then Minister of Mineral Resources, Susan Shabangu, was quoted as saying, "South Africa's share of the global exploration budget has systematically declined, from 8% in 2001 to less than 4% last year.". That number has declined to below 1% on a consistent basis for the past three years running up until 2024 (Mitchell, 2024).

2. DEFINITION OF JUNIOR AND EMERGING MINERS

The Minerals Council first presented the market with a definition of emerging and junior miners in 2018. At the time, seven other definitions were referenced. After communicating the Minerals Council definition of JEM to the market through webinars, conferences and reports, as of August 2025, different government departments still apply different turnover ranges in their definitions. Table 1 shows the turnover definitions applied by the Department of Trade, Industry and Competition (dtic), National Small Enterprise Act 102 of 1996 (NSE Act), and Stats SA (Minerals Council, 2025) (Stats SA, 2025).

Table 1: Different turnover definitions for enterprises of South African government agencies 2025

Turnover	Micro enterprises	Small enterprises	Medium enterprises	Large enterprises
dtic Codes	< R68,900,000	< R172,250,000	< R671,775,000	> R671,775,000
NSE Act	< R18,348,114	< R61,160,382	< R256,873,603	N/A
Stats SA	< R3,500,000	< R162,500,000	< R633,800,000	>R633,800,000

Following the definition proposed, the Minerals Council has updated some of the turnover numbers under criterion 2 to account for inflation over the past six years. The Minerals Council definition remains the most comprehensive and relevant definition for the subsector and should be promoted as such. Dr. Kriel also endorsed this definition in his PhD thesis.

During engagements with various industry bodies and organisations, it was apparent that the Minerals Council definition for JEM is not commonly known, with relatively low levels of awareness. Three directors at the DMPR were wholly unaware of the work done by the Minerals Council in this regard, and this should be set right through proper engagement and communication.

Table 2 summarises definitions proposed for junior miners. The author of this research report supports these definitions of the sector because they are comprehensive.

Table 2: Minerals Council definition of JEM - July 2018, updated 2025

	Prospectors	Mine developers	Mining enterprises	Mining enterprises	Mining enterprises	Mining enterprises
	(Exploration)	(Construct and develop)	Micro mining	Small-scale mining	Medium-scale mining	Large-scale mining
Criterion 1 Licensing	Prospecting rights holder	Mining rights holder	Mining rights or permit holder	Mining rights or permit holder	Mining rights holder	Mining rights holder
Criterion 2 Revenue from specific mining right area		First year of a mining right until the mine first has a positive revenue	Revenue in the past tax year < R12.2 million	Revenue in the past tax year R12.2 – R61.1 million	Revenue in the past tax year R61.1 – R612 million	Revenue in the past tax year >R612 million
Criterion 3 Employees			< 150 employees	<250 employees	<500 employees	>500 employees

	Prospectors	Mine developers	Mining enterprises	Mining enterprises	Mining enterprises	Mining enterprises
	(Exploration)	(Construct and develop)	Micro mining	Small-scale mining	Medium-scale mining	Large-scale mining
Criterion 4 Company or controlling shareholder aggregated revenue from other mining rights	Zero revenue generated from other mining rights	Exceeds R612 million	Exceeds R612 million	Exceeds R612 million	Exceeds R612 million	Exceeds R612 million

Source: JEMD – Mining Charter submission (Minerals Council, 2025)

Stats SA uses and adjusts for inflation the dtic parameters (turnover or revenue) for reporting purposes for various-sized enterprises. The latest parameters are summarised in Table 3. These parameters are defined differently for each industry in South Africa by the dtic. This is based on guidelines in the National Small Business Amendment Act 26 of 2003 (Department Trade and Industry, 2003).

Table 3: Stats SA and dtic revenue-based parameters for reporting on enterprises (raised by a factor of 19.5 since 2003)

Industry/Sector	Large	Medium	Small	Micro
Mining and quarrying industry	R633,750,000	R162,500,000	R65,000,000	R3,500,000
Manufacturing industry	R828,750,000	R211,250,000	R81,250,000	R3,500,000
Electricity, gas and water supply Industry	R828,750,000	R211,250,000	R82,875,000	R3,500,000
Construction industry	R422,500,000	R97,500,000	R48,750,000	R3,500,000
Transport industry	R422,500,000	R211,250,000	R48,750,000	R3,500,000
Real estate and other business services industry	R422,500,000	R211,250,000	R48,750,000	R3,500,000
Community, social and personal services industry	R211,250,000	R97,500,000	R16,250,000	R3,500,000

Source: Stats SA – December 2024 details SML note. Figures were upwardly adjusted in quarter ending December 2024, i.e., large mines were defined as revenue above R526 million between 2018 and September 2024 and redefined at R633.75 million in December 2024.

For purposes of this research, the mining and quarrying industry is of importance with:

- Mines/quarries with revenue turnovers above R633,750,000 defined as large-scale enterprises – or majors
- Mines/quarries with revenue turnovers above R162,500,000 defined as medium-scale enterprises – or juniors
- Mines/quarries with revenue turnovers above R65,000,000 defined as small-scale enterprises – or small-scale miners

- Mines/quarries with revenue turnovers below R3,500,000 defined as micro-scale enterprises.

2.1 Project development cycle

South Africa's JEM sector is strategically positioned differently from the junior mining sectors in Canada and Australia.

Iddon, Hettihewa and Wright assert that: "The majority of junior mining firms are pre-production firms with no earnings and negative cash-flow". (Iddon, et al., 2015, p. 27) The junior mining sector in Canada shows a profile similar to that of the Australian juniors. Their focus is on early discovery, exploration and, to a much lesser extent, going into production. They make their money through selling their exploration projects to potential buyers who are focused on production.

The Minerals Council definition of South African junior miners refers to the generation of revenue ranging between R5 million and R612 million – something that their peers in Australia and Canada do not achieve or aspire to achieve. South African juniors are positioned to make annual returns from operating mines, whereas a large proportion of Canadian and Australian juniors never earn revenue. Figure 1 shows a simplified schematic of the mining project development cycle and provides a view of the difference in strategic positioning.

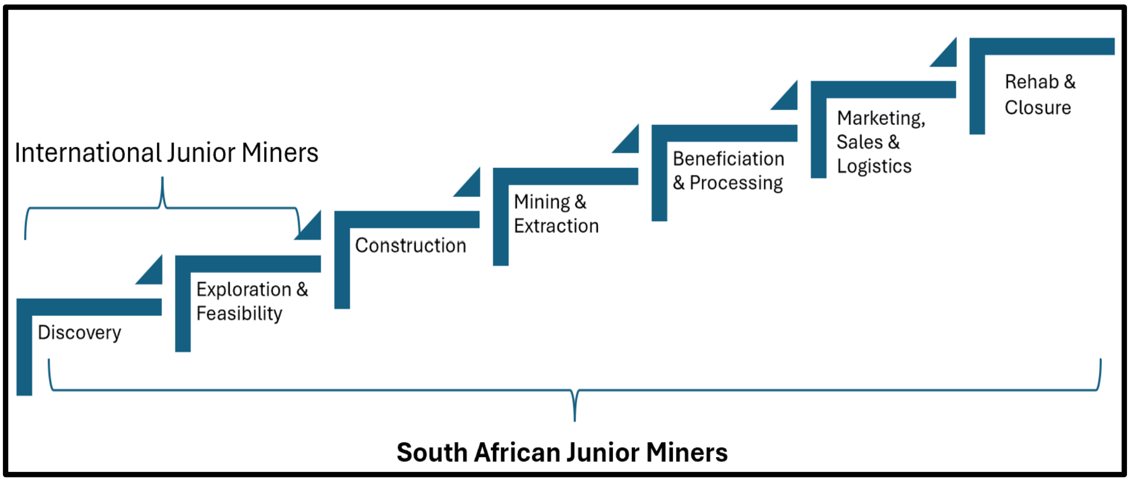

Figure 1: Mining project development cycle – South African junior focus vs international junior miners' focus.

This does not by any means imply that Canadian and Australian junior miners do not eventually go into production; it merely shows a fundamental difference in strategy compared to South African Juniors.

The difference lies in the ability junior mining companies (JMCs) to attract funding for exploration. With well-developed venture capital markets in Canada, Australia, the UK, the United States of America (USA) and China, many JMCs find it more viable to focus on exploration through capital raising in those markets. South African junior miners find it very difficult to find investment and funding for exploration and feasibility studies.

2.2 The road from emerging miner to major mining producer

The project development cycle, also referred to as the mining business life cycle, can be described as all activities or steps necessary in developing mining projects from the initial discovery of a mineral deposit to the point of legal mine closure. The life cycle of every mine is finite. This cycle remains consistent irrespective of the size of the mine. International investors have developed numerous models for evaluating investment opportunities on a risk-reward basis. Figure 2 presents a very simplified but accepted summary of the mining business life cycle.

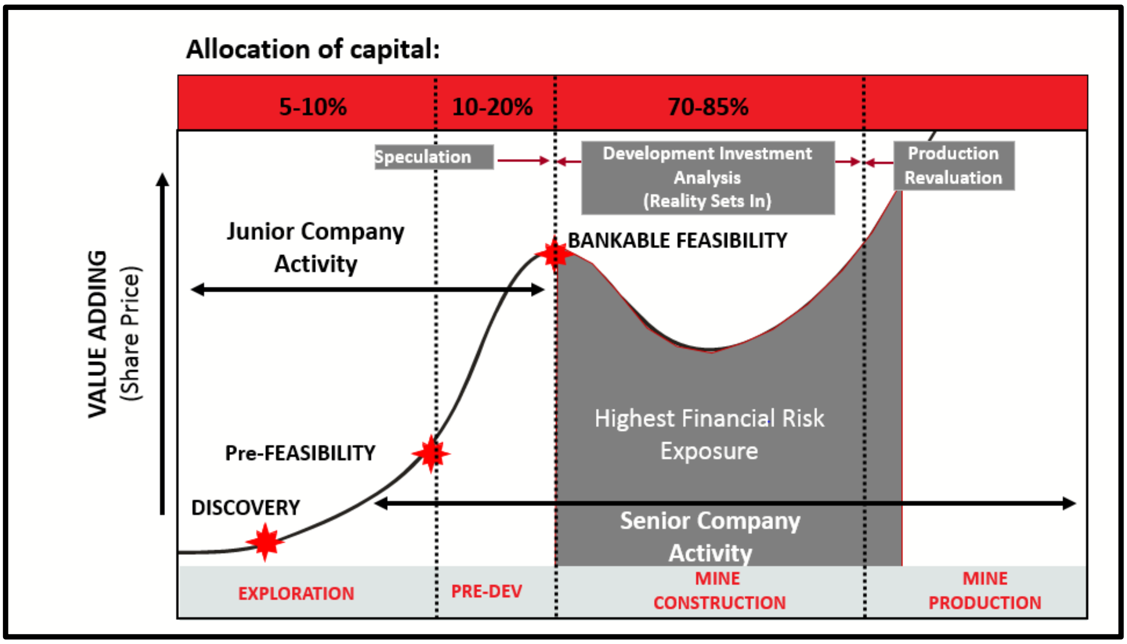

Figure 2: The global investor model for the mining sector.

Source: Modified from U.S. Global Investors

The model illustrates that junior mining activity is positioned in the early stages of the cycle (i.e., exploration and pre-development) of project development, whereas the model associates mine construction and mine production with senior or major mining activities. Bearing this model in mind and remembering that this is an international perspective from an investor standpoint, one can see that there may be confusion, as this model isolates junior mining to pre-production activities. Pre-production activities are not associated with revenue and profits.

This model is entrenched internationally, and this leads to oversight by investors as the South African definition of junior miners includes generating revenues of between R50 million and R612 million. This model clearly highlights the higher risk, based on slow share price value, associated with early-stage mine discovery, exploration and feasibility studies. Only once a project reaches the bankable feasibility stage is the risk sufficiently mitigated and, according to this model, this forms the end of junior mining activity.

This, of course, is not correct, and we know that a small number of JMCs do move beyond the bankable feasibility stage with success. What needs to be highlighted and recognised is the possibility that international investors may have put a label on JMCs as high-risk investments, and therefore, these companies do not attract the right amount of investment in South Africa.

Some South African junior miners do operate across the entire mining value chain, and therefore, meet the South African definition of junior miners. This includes operational mines generating up to R500 million in revenue per annum. Opportunities may exist for JMCs that shift their focus towards the rehabilitation and closure side of the mining value chain, considering the environmental liabilities of unrehabilitated mines after 150 years of mining. As stated earlier, South Africa has more than 5,000 derelict mines which have not been rehabilitated (Auditor-General, 2009).

Many international JMCs have clear strategies to avoid going into construction and actual mining. Their goal is to develop a mineral deposit to a bankable feasibility level, and then to sell it off to a major mining company. This model is often associated with juniors listed on stock exchanges in Canada and Australia. In South Africa, however, the research shows a significantly different focus for JMCs (Baxter, 2021, pers. comm., July 6).

Mining in South Africa has been controlled through large conglomerates or mining houses for 150 years (Davenport, 2013). Over this period, these large organisations have acquired licences to mine virtually all the best mineral deposits, also referred to as Tier 1 deposits. This makes it very difficult for new entrants into mining because those deposits that remain available are not of the same high quality. In South Africa, the Government has developed a legal framework to support historically disadvantaged individuals. Enterprise development is legislated in the Broad-Based Black Economic Empowerment Amendment Act No. 46 of 2013 (Government of South Africa, 2016). This provides the Government and major mining companies with the opportunity to support junior miners to become sustainable and to allow access to high-quality mineral deposits.

3. ECONOMIC CONTRIBUTION BY JUNIOR AND EMERGING MINERS

3.1 Financial extent of JEM in South Africa

The contribution made by junior miners has been tracked since 2018 and is presented in Table 4 for every second year (calendar years) for the purpose of identifying a growth trend. The figures were compiled using Stats SA quarterly reports as published on the Stats SA website (Stats SA, 2025). Figures were adjusted upwards in the quarter ending December 2024, that is, large mines were defined as revenue above R526 million between 2018 and September 2024 and redefined at R633.75 million in December 2024.

Figure 3 illustrates that a positive trend is evident when looking at the turnover / revenue growth between 2018 and 2024. Unfortunately, expenses have also increased over the measured period.

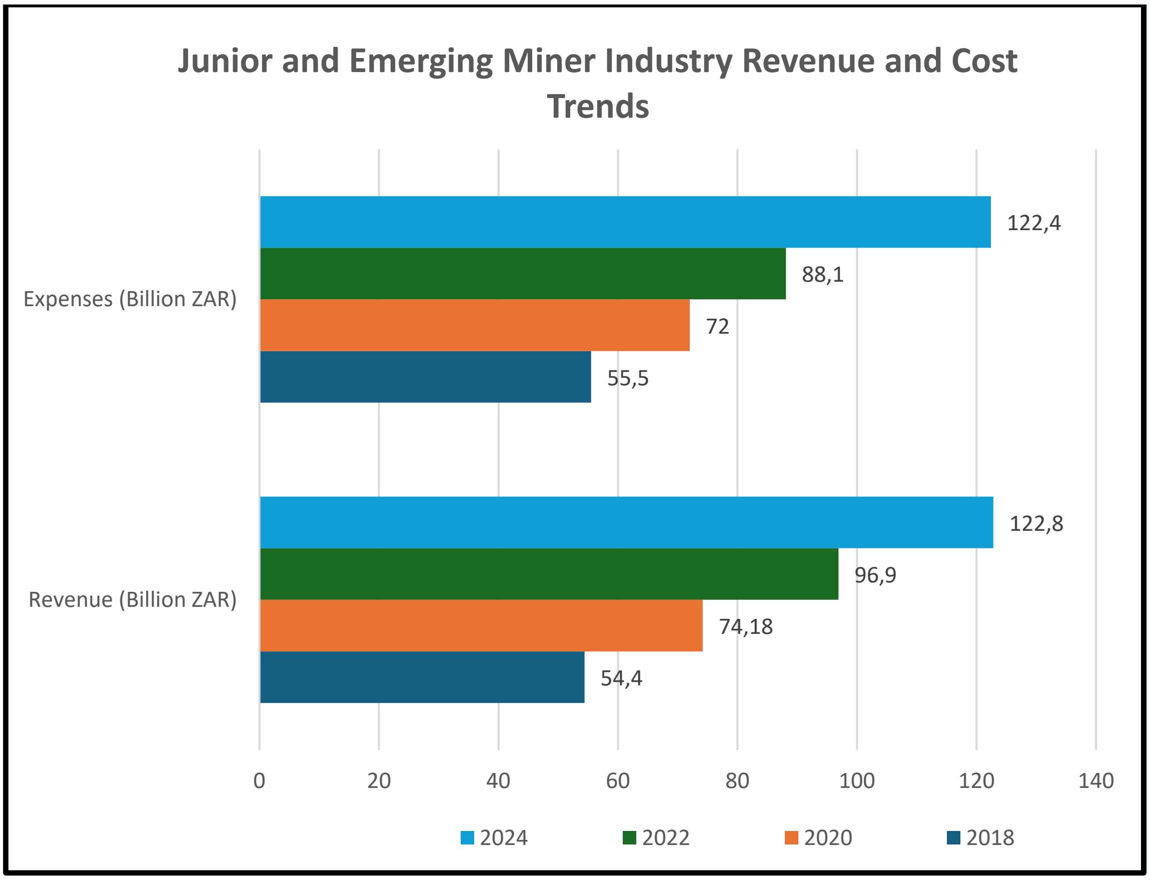

Figure 3: JEM revenue and expense trends 2018–2024 (Source: Stats SA website)

The profitability of the sector came under pressure between 2022 and 2024, as illustrated in Figure 4.

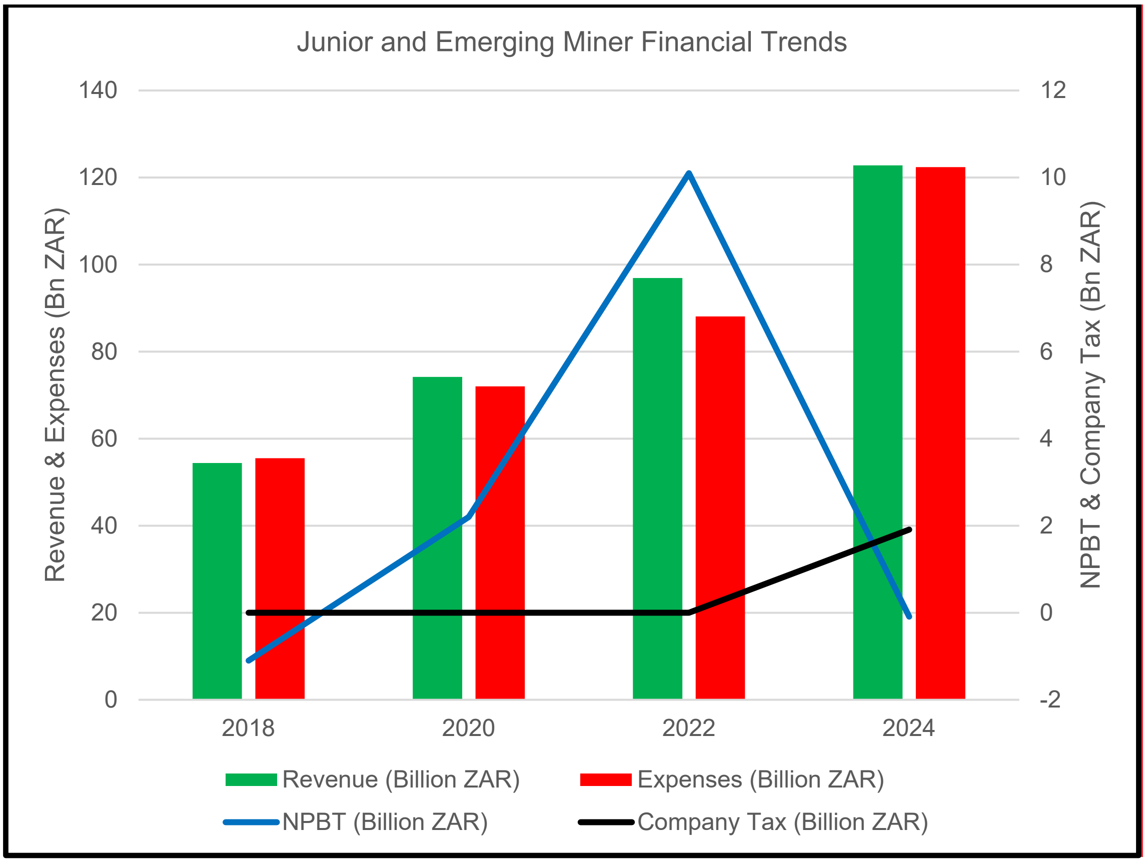

Figure 4: Financial performance of the JEM sector between 2018 and 2024

Source: Stats SA website

The rate of revenue growth between 2022 and 2024 was 27% while the rate at which expenses grew over the same period was 39%. This resulted in a margin squeeze over the past two years for the JEM sector in South Africa. The main contributors to margins coming under pressure between 2022 and 2024 were significant jumps in expenditure growth rates that exceeded the 27% growth rate in revenue.

Expenditure growth rate increases for 2022 to 2024 in relation to a 27% revenue rate increase, as per Table 4 are:

- Employee cost increased by 40%
- Interest paid increased by 55%
- Royalties increased by 71%
- Rental expenditure increased by 106%
- Loss on assets increased by 114%
- Other expenses increased by 64%.

Table 4: Financial contribution by JEM to the South African economy

Financial parameter	Desktop survey 2018	Stats SA 2020	Stats SA 2022	Stats SA 2024
Revenue per annum:	**R54.4 billion (7.8% of industry**	**R74.18 billion (7.7% of industry)**	**R96.9 billion (7.3% of industry)**	**R122.8 billion (11.3% of industry)**
• **Turnover**	• R48.7 billion	• R 70.04 billion	• R89.63 billion	• R111.96 billion
• **Interest earned**	• R0.5 billion	• R0.56 billion	• R0.48 billion	• R2.86 billion
• **Dividends**	• R1.6 billion	• R0.01 billion	• R3.21 billion	• R0.15 billion
• **Royalties**	• R0	• R0.01 billion	• R0.01 billion	• R0.08 billion
• **Rental/lease**	• R0.1 billion	• R0.04 billion	• R0.07 billion	• R1.36 billion
• **Plant/lease**	• R1.2 billion	• R0.58 billion	• R0.42 billion	• R0.95 billion
• **Profit on assets**	• R0.8 billion	• R1.7 billion	• R1.50 billion	• R0.83 billion
• **Other income**	• R1.5 billion	• R1.2 billion	• R1.64 billion	• R4.64 billion
Expenses per annum:	**R55.5 billion (8.4% of industry)**	**R72.0 billion (8.9% of industry)**	**R88.1 billion (8.5% of industry)**	**R122.4 billion (11.7% of industry)**
• **Procurement**	• R21.2 billion	• R26.26 billion	• R36.16 billion	• R44.8 billion
• **Employees**	• R10.6 billion	• R15.98 billion	• R17.0 billion	• R23.8 billion
• **Interest paid**	• R1.1 billion	• R2.68 billion	• R2.0 billion	• R3.1 billion
• **Royalties**	• R1.0 billion	• R0.89 billion	• R0.7 billion	• R1.2 billion
• **Rental**	• R0.9 billion	• R1.45 billion	• R1.58 billion	• R3.25 billion
• **Hiring equipment**	• R1.1 billion	• R1.59 billion	• R3.34 billion	• R3.73 billion
• **Depreciation**	• R2.9 billion	• R2.54 billion	• R4.68 billion	• R4.93 billion
• **Loss on assets**	• R5.5 billion	• R1.16 billion	• R0.66 billion	• R1.41 billion
• **Other expenses**	• R11.3 billion	• R19.50 billion	• R22.00 billion	• R36.1 billion
Net profit/(loss) before taxation	**(R1.1 billion loss)**	**R2.2 billion (1.3% of industry)**	**R10.1 billion (3.2% of industry)**	**(R0.09 billion loss) Industry profit R143 billion**
Company tax		**R0.93 billion (2.5% of industry)**	**R4.99 billion (5.8% of industry)**	**R1.91 billion (6.0% of industry)**

3.2 Tax contribution to the South African fiscus

SARS publishes statistics annually, and although SARS figures cannot be directly correlated with the DMPR statistics, this provides insight into the contribution made by the junior mining sector.

SARS published in its 2024 report that in 2024, company income tax contributed 18.2% of the R1.74 trillion South African tax base. Company income tax contribution has increased from 15.9% in 2020 to 18.2% in 2024, indicating a higher reliance on companies. The mining and quarrying industry, in 2022, contributed R80 billion, 24.4% of company taxes in South Africa. Table 5 shows that the mining and quarrying industry in South Africa is the second largest contributor to company income tax in South Africa (South African Revenue Service, 2024).

Table 5: SARS tax reporting of South African business sectors 2022

Industry/Sector	FY2022 tax assessed	% of tax assessed
Financial intermediation, insurance, real estate and business services	R107.7 billion	32.8%
Mining and quarrying	**R80 billion**	**24.4%**
Manufacturing	R54.2 billion	16.5%
Wholesale and retail, catering and accommodation	R42.2 billion	12.9%
Transportation, storage and communication	R17.5 billion	5.3%
Community, social and personal services	R10.7 billion	3.3%
All other sectors	R15.7 billion	4.8%
Total	**R327.7 billion**	100%

Source: SARS 2024 Statistics

The compound annual growth rate for revenue collection between 2020 and 2024 is reported as 6.4%. This is much higher than the GDP growth rate, which is reported as 0.6% for 2024. This means that the economy is growing at a pace 10 times slower than the rate at which companies contribute to the tax base. Table 6 shows that the number of mining companies contributing to the tax base has not increased since 2020; there has been a decline. It can, therefore, be inferred that a declining number of mining companies are contributing increasingly more to taxes.

Table 6: SARS statistics on the mining company tax base 2018–2022

	Number of mining taxpayers	Taxable income (R'million)	Tax assessed (R'million)
FY2018	5,325 (35% more than previous year)	-30,296	22,478
FY2019	7,138 (35% more than previous year)	-23,813	26,863
FY2020	8,687 21% more than previous year)	-10,432	35,924
FY2021	8,180 (6% less than previous year)	192,461	88,381
FY2022	7,186 (13% less than previous year)	161,506	80,049

Source: SARS 2024 Statistics

The DMPR updates and publishes the number of mining permits and mining licences on its website on the D1 spreadsheet. The 2024 edition shows that a total of 2,065 mining permits and licences have been granted – but there is no breakdown as to how many mining permits have been issued in relation to mining licences. The DMPR does not have similar statistics for PLs. Considering that, according to the SARS statistics shown in Table 6, there were 7,186 mining taxpayers for the 2022 financial year, it can be deduced that around 5,121 PLs are issued (7,186 mining taxpayers minus 2,065 mining permits/licences). It is assumed that almost none of the prospecting permit holders are generating income and, therefore, make zero tax contribution.

SARS reports that 2,369 mining taxpayers were loss-making in 2022 and another 3,041 mining taxpayers had a zero return, leaving only 1,776 of the 7,186 mining taxpayers as tax contributors in 2022. From these statistics, it is deduced that only 236 or 3% of the 7,186 mining taxpayers contributed more than R10 million in 2022. For the period 2014 to 2017, 5% of mining taxpayers contributed above R10 million (Kriel, 2023, p. 71).

Figure 5 illustrates the conversion rate of current prospecting and mining licence holders to successful enterprises that positively contribute to the South African tax revenue. It is in the national interest of South Africa to support the 79% (5,676) of prospecting and mining licence holders to become successful by generating profits and paying taxes.

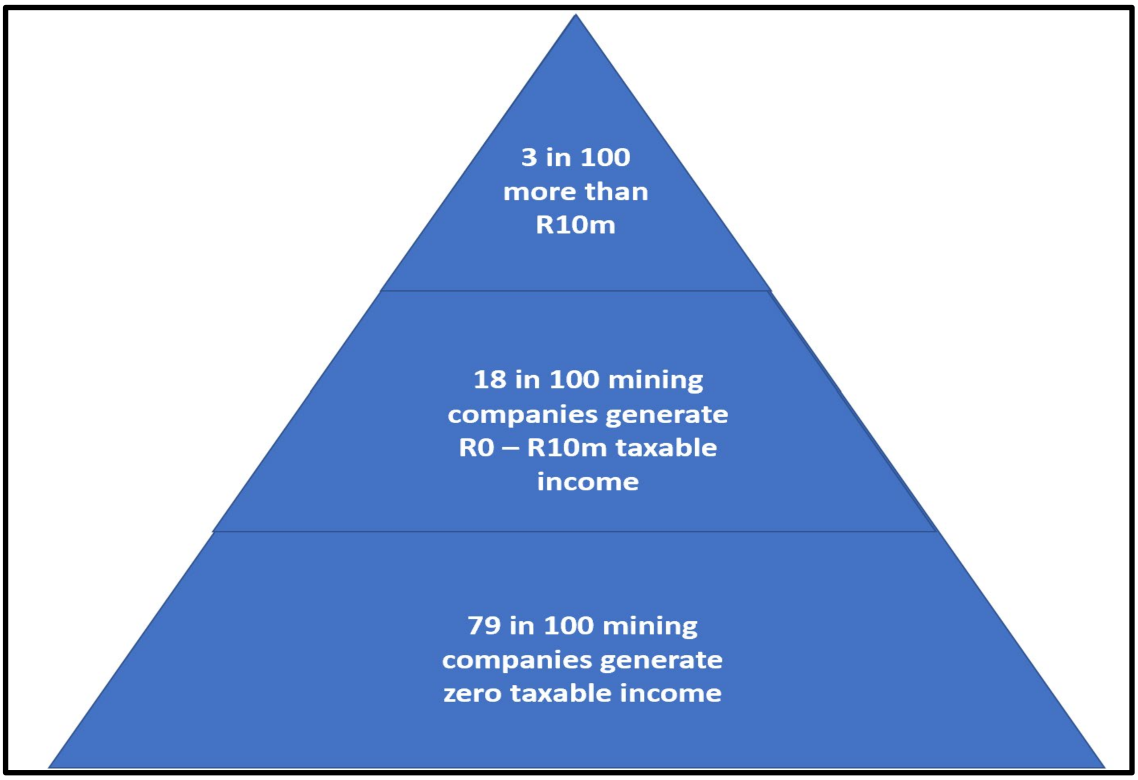

Figure 5: Conversion of prospecting and mining permits/licences to tax contributors in South Africa

JEM are predominantly positioned at the bottom of the triangle in Figure 5. The South African economy requires that more of our explorers and junior miners become profitable. This will create jobs and grow the tax base for South Africa, both of which are critical for the country. By creating a conducive environment for these emerging miners, South Africa will reap the long-term benefits. Government has started taking steps to support the sector through the following key initiatives:

- Publishing the *Exploration Strategy for South Africa* in April 2022 (DMRE, 2022).
- The initiative to create South Africa's new mining cadastre was launched in January 2024. At that time, the DMRE, now the DMPR, officially appointed the PMG Consortium to design and implement the new system.
- Initiating a MEF with an initial value of R400 million in May 2024, to be implemented in two windows in 2025 and 2026.
- Re-establishing a small-scale mining fund managed by the DMPR and administered by the IDC, to the value of R67.5 million in 2024.
- Publishing the *Critical Minerals and Metals Strategy for South Africa* in 2025 (DMPR, 2025).
- The draft Mineral Resources Development Bill, 2025, which proposes amendments to the Mineral and Petroleum Resources Development Act (MPRDA), was published in the Government Gazette for public comment on 20 May 2025. The public comment period concluded on 13 August 2025.

4. SOCIAL IMPACT AND JOB CREATION

South Africa has had the highest unemployment rate internationally for many years. Around eight million people of working age are unemployed in South Africa. Socio-economic pressures are high, and the government is under pressure to create a conducive environment for businesses to grow and prosper. In so doing, jobs will be created. The junior mining sector can create thousands more jobs. The South African population aged 15 and above is reported to have a literacy rate above 90%. It is estimated that around 40% of learners who start grade 1 will drop out of school before matriculating. If government strategically prioritises support for junior miners, the sector can have a big impact on job creation, generating revenue from increased company and personal income taxes (Kriel, 2023, pp. 259, 271).

4.1 Historic job creation of mining in South Africa

Mining in South Africa provided as many as 763,319 jobs in 1987 during the peak years of gold mining (Stats SA, 2017). After South Africa became a democracy in 1994, the mining industry created on average 481,851 jobs per annum. In 2024, the DMPR reported that 475,009 people were employed for the year, 272,162 being employed permanently by the mines and 202,847 being employed as contractors. 16% of people employed by mines in 2024 were female. Figure 6 shows the total people employed by mines for the period 1994 to 2024.

Table 7 provides a summary of the total number of jobs created within specific commodity classes in South Africa for the period 2013 to 2024. It highlights that platinum group metals (PGM) mines generate the highest number of jobs, followed by gold mines as the second greatest job creator, and coal mines ranking third. In 2024, coal, chrome, iron ore, manganese and non-ferrous metals mines employed at a higher level than their historic 11-year average. Gold mines have been in steady decline since 2013, while PGM mines' employment was average.

Table 7: SA mining jobs per major commodity class 2013–2024

Year	Coal	Chrome ore	Gold	Iron ore	Manganese ore	Diamonds	Non-ferrous metals	PGMs
2013	88,039	18,358	131,738	21,127	9,842	13,579	15,539	191,260
2014	86,106	18,658	119,007	21,794	9,971	15,356	15,816	186,864
2015	77,747	18,450	115,029	20,554	8,639	18,313	16,414	186,465
2016	77,259	15,449	116,572	16,651	7,242	18,789	14,754	172,556
2017	82,372	16,968	112,901	17,510	7,780	18,038	16,325	172,760
2018	89,789	18,922	100,793	18,613	9,352	16,391	16,862	167,037
2019	95,416	20,847	94,731	19,777	11,219	15,090	19,321	164,674
2020	90,086	18,739	94,262	20,489	12,207	13,433	14,853	154,600
2021	90,895	18,316	93,983	21,441	13,307	12,926	14,646	165,619
2022	91,977	19,475	94,998	23,445	12,470	13,971	16,252	175,080
2023	96,096	21,868	94,024	23,750	11,518	15,354	16,525	182,944
2024	98,269	25,824	91,728	22,461	11,949	14,247	18,355	173,424
Ave	**88,671**	**19,323**	**104,980**	**20,634**	**10,458**	**15,457**	**16,305**	**174,440**

Source: Minerals Council Economist

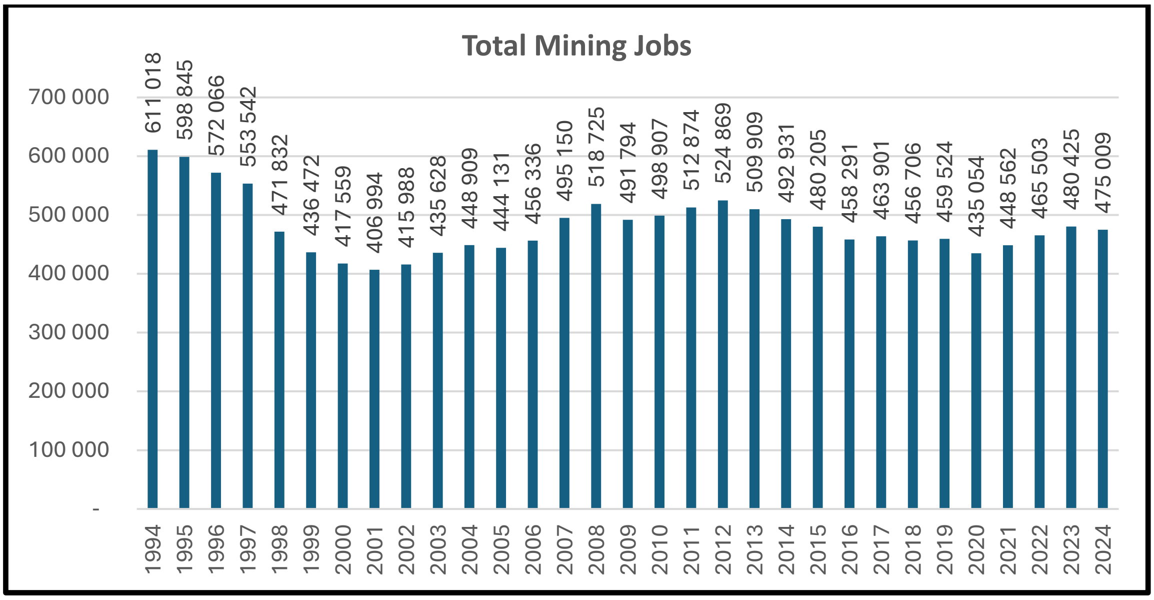

Figure 6: Total mining jobs 1994–2024

4.2 Job creation of JEMs

There are no statistics available that clearly categorise the number of jobs created per mining subsector i.e., Majors, Juniors, small-scale miners. Stats SA, however, provides sub-categorisation of employee costs in their quarterly reports, which for the purposes of this research, will form the basis for the calculation of the number of jobs created specifically by JEMs.

Table 8 shows that junior miners provided 7% and small-scale miners 5% of all mining jobs in South Africa in 2024. During the past two years, there was a decline in the percentage of jobs that majors provided, dropping from 90% in 2022 to 88% in 2023 and 2024.

In 2019, the research showed the junior miners contributed between 33,500 and 40,300 jobs for the mining industry. In 2024, the number has increased to around 58,500 jobs.

Table 8: Job estimation per mining subsector by analysing Stats SA employee cost data

		Total	Major	Junior	Small-scale
2021	**Employee cost**	R166,093	R149,681	R9,329	R7,083
	% of cost	100%	90%	6%	4%
	# jobs	**448,562**	**404,239**	**25,195**	**19,129**
2022	**Employee cost**	R164,491	R147,493	R11,353	R5,645
	% of cost	100%	90%	7%	3%
	# jobs	**465,503**	**417,399**	**32,129**	**15,975**
2023	**Employee cost**	R181,854	R160,814	R1,3539	R7,501
	% of cost	100%	88%	7%	4%
	# jobs	**480,425**	**424,841**	**35,768**	**19,816**
2024	**Employee cost**	R193,559	R169,723	R14,098	R9,738
	% of cost	100%	88%	7%	5%
	# jobs	**475,009**	**416,514**	**34,598**	**23,898**

4.3 Job multiplier effect of mining

It is often mentioned that the mining industry has a job multiplier effect of between seven and ten, which means that for every job created on a mine, seven to ten other jobs are created outside the mine that can be directly linked to the activities of the mine. Very little research, however, supports this, and it is an area for future research. A 2014 Australian study on job multipliers states that: "Mining holds economic linkages in local economies that can be categorised into four types: backward, forward, revenue and demand linkages". The two former categories relate to all the demand for inputs and outputs that the mining industry generates and that might promote economic activity in a region. The magnitude of the backward and forward linkages depends on the capacity of the local economy to supply the inputs required by the mining industry and/or to use the outputs of the industry. The revenue linkage refers to the potential enlargement of public revenues sourced from property and other types of taxes that mining companies must pay directly to the government (Fleming & Measham, 2014, p. 9).

Should a job multiplier of between seven and ten be applied to the mining sector in South Africa, Table 9 provides a summary of the impact that it may have on total job creation for the nation.

Table 9: Effect of mining job multipliers on South African job creation

	Official permanent jobs 2024	Job multiplier 7 (potential additional jobs created in economy)	Job multiplier 10 (potential additional jobs created in economy)
Small-scale mining	23,898	167,286	238,980
Junior miners	34,598	242,186	345,980
Majors	416,514	2,915,598	4,165,140
Total South African mining	475,009	3,325,063	4,750,090

According to Stats SA, there were 16.8 million people employed in the second quarter of 2025. Considering the figures in Table 9, mines in South Africa employ about 2.8% of people in the country as permanent employees or contractors on mining sites. Considering the job multipliers, however, the mining industry is a strategic job creator in surrounding industries that support these mines, resulting in a possible 22.6% and 31.1% of total job creation for the country. This is significant and, therefore, a justification for strategic support by the Government at a much higher level than to date junior miners currently employ a total of **58,496** people on mining sites, potentially between 409,472 and 584,960 elsewhere in the economy. In the 2019 research report, junior miners employed between 33,500 and 40,300 people, so the 2024 numbers reflect a 45 to 75% increase. Considering that turnover has increased from R54.4 billion in 2018 to R122.8 billion in 2024, a 126% increase, the increased rate of employment for JEM does not directly correlate but lags somewhat.

5. LICENSING AND REGULATORY COMPLIANCE

5.1 RSA mining legislation and compliance landscape

The landscape in which junior miners operate is both complex and highly competitive, characterised by a mature industry dominated by large-scale, well-established mining corporations and multinational entities. These dominant players possess significant financial, technological and political leverage, which they strategically use to sustain their operations. For smaller JEM, navigating this environment requires a keen understanding of the industry's major levers - those factors that can positively or negatively influence project outcomes. The ability to effectively manage and respond to these levers can spell the difference between success and failure in a highly competitive sector.

One of the most critical factors influencing the prospects of junior miners is the regulatory and institutional environment within which all industry players operate. The Government's role is paramount in creating an enabling environment that promotes growth, innovation and fair competition while safeguarding national interests such as environmental sustainability and social equity. Policy clarity, efficient administration, transparent licensing processes and supportive financial mechanisms are all instrumental in attracting investment and facilitating the development of junior projects.

South Africa, despite its rich mineral endowment, faces notable challenges in its regulatory framework that hinder junior exploration and development. A significant deficiency is the absence of a comprehensive mineral rights cadastre system - a centralised digital platform that consolidates licensing information. Most neighbouring countries, such as Botswana, Namibia and Zimbabwe, have implemented such systems, which serve to enhance transparency and reduce corruption risks. The importance of a transparent and accessible cadastre was underscored as early as 2009 in the World Bank's report on mineral rights cadastre, where it was emphasised that transparent sector reforms support sustainable management of resources, foster economic development and reduce poverty (The World Bank, 2009). The absence of such transparency can lead to protracted and therefore costly legal disputes. These disputes can negatively impact the reputation of not only the regulator, in this case the DMPR as the custodian of licensing but can also raise concerns among foreign investors about the integrity of the licensing process. In due diligence exercises, investors are likely to scrutinise licensing transparency, and any perceived flaws can deter future investment. In January 2024, the South African Government initiated a project to develop a mining cadastre that will replace the South African Mineral Resource Administration System (SAMRAD), which is outdated and largely dysfunctional. The industry is, however, concerned about numerous delays:

- **February 2024:** Following appointment of a service provider to develop the cadastre, the DMPR initially projected a full rollout of the new system by February 2025.
- **July 2024**: The DMPR indicated that there had been delays and set a new target date of June 2025 for the system's completion.
- **July 2025**: Another three-month delay was announced, postponing the start of the phased rollout in the Western Cape to October 2025.

Considering the track record of this project to date and that of the DMPR, some industry experts and mining CEOs who were interviewed for this research assignment, estimated another five years until South Africa would have a fully functional mining cadastre. Should this be the case, the South African mining industry can expect further delays in attracting investment at the required scale.

Another critical aspect requiring urgent improvement is the licensing process itself. Currently, the process is fragmented and inefficient, often leading to delays that impose significant costs on junior miners - delays that can stifle their operational timelines and increase project costs. The DMPR is cognisant of these issues and has been working with counterparts at the Department of Water and Sanitation (DWS) to streamline the licensing process. This effort aims to reduce bureaucratic hurdles and enhance efficiency. These challenges have been publicly acknowledged by the DMPR which also emphasised the need for reforms (Seccombe, 2021). A more centralised approach to licensing - one that consolidates application, review and approval processes - would not only save time but also reduce costs, providing junior miners with a more predictable and supportive regulatory environment.

Financial mechanisms play a crucial role in nurturing junior mining projects, often serving as early-stage catalysts for exploration and development. Internationally, countries like Canada and Australia have demonstrated the effectiveness of targeted financial support tools such as FTS and tax incentives, which incentivise investment in JMCs. These mechanisms help mitigate the high risks associated with exploration, providing much-needed capital and encouraging innovation. The South African Government could consider adopting similar support measures to stimulate its fledgling sector, thereby enabling juniors to overcome initial resource constraints and develop projects to a stage where they become attractive to larger investors or can be brought into production.

Regulatory certainty is another fundamental factor that influences investment decisions. Currently, South Africa's mining regulatory framework suffers from ambiguity and frequent policy shifts, deterring foreign investors seeking stability and predictability.

The latest version of the Mineral Resources Development Bill was published for public comment on 20 May 2025. This followed the withdrawal of a previous, controversial 2013 amendment bill in 2018. The comment period for the 2025 draft Bill closed on 13 August 2025.

5.1.1 The way forward

At the time of writing, the DMPR was considering public comments received. The next steps for the Bill will likely entail the following:

- Revisions based on public comment: The department will likely produce a revised draft incorporating some of the public and industry feedback. Stakeholders like the Minerals Council and mining-affected communities submitted extensive comments on areas of concern.

- Introduction to Parliament: The revised Bill will need to be formally tabled in Parliament, where it will follow the standard legislative process. It will be discussed and potentially amended by the relevant portfolio committee.
- Enactment and proclamation: If it successfully navigates the parliamentary process, the Bill will be signed into law by the President. Certain sections, like those related to the new Upstream Petroleum Resources Development Act of 2024, require separate proclamation dates.

Potential legal challenges could still arise, particularly as they pertain to certain clauses in the Bill. Several clauses in the 2025 Bill have raised concerns that could lead to legal challenges, even if the Bill is passed by Parliament. Concerns include:

- Reinstatement of ministerial consent requirements for changes in company shareholding.
- The Bill's redefinition of "interested and affected persons", which could restrict who has a say in mining projects.
- The omission of legally binding empowerment thresholds, effectively reverting to the post-2018 court ruling status, where the Mining Charter was deemed policy, not law.
- The legal status of future regulations on transformation.

The Bill aims to modernise the regulatory framework by separating petroleum from mineral regulation and formally incorporating small-scale and artisanal mining. However, key issues related to investment certainty and community rights remain contentious.

Investment in the mining sector hinges on clear legal tenets, protection of property rights and transparency. For example, South Africa’s trade relationship with Germany - its second-largest trading partner after China - illustrates the importance placed on regulatory stability. As of July 2021, German companies, numbering over 600, have expressed concern over the changing policy landscape. The outgoing German ambassador, Martin Schafer, highlighted the difficulty faced by foreign investors due to debates around expropriation without compensation and requirements related to broad-based black economic empowerment. He explained that unclear or unpredictable policies could lead investors to look elsewhere for more stable environments, thereby reducing foreign direct investment. This situation underscores the importance for South Africa’s government to provide a stable, transparent and predictable regulatory framework that can attract sustained foreign investment crucial for sector growth.

President Cyril Ramaphosa signed the Expropriation Act into law on 23 January 2025 after it was passed by Parliament in 2024. The new law replaces the apartheid-era Expropriation Act of 1975 and formalises the process for the Government to expropriate private property for a public purpose or in the public interest. It includes a controversial provision allowing for "nil compensation" under certain, specific circumstances. While signed, the Act is not yet in effect, as the President still needs to proclaim its commencement date.

5.1.2 Concerns raised by business and international governments

5.1.2.1 Concerns from the business sector

- **Property rights and investment uncertainty:** Business organisations, including AgriSA and the Institute of Race Relations (IRR), have voiced concerns that the law undermines property rights and creates investment uncertainty. AgriSA stated that the bill poses a risk to agricultural sustainability and food security.
- **Reduced compensation:** Critics argue that the provision for "nil compensation" in certain instances could devalue property and expose owners to lengthy legal battles. An ongoing case involving a metropolitan council in Gauteng attempting to expropriate property for zero compensation has been cited as a test case for these concerns.
- **Financial instability:** The IRR warned that the legislation could place banks and other financial institutions on "shaky ground", as the value of land used as collateral could be affected.
- **Reduced investment:** Concerns have been raised that the law, especially its focus on "nil compensation" in specific cases, could scare away both local and foreign investors.

5.1.2.2 Concerns from international governments

- **Executive order from the USA:** The most prominent international reaction came in February 2025, when President Donald Trump signed an executive order to cut aid to South Africa. President Trump cited the new law and alleged mistreatment of a minority group as reasons for the move, although claims of persecution have been widely disputed.
- **Impact on trade relations:** The USA's executive order led to significant friction and threatened trade relations, particularly in the context of discussions around a new trade agreement and tariffs.
- **International legal norms:** Some international observers and bodies, including members of the European Parliament, have raised questions about how the law aligns with international legal principles on compensation for property expropriation. They suggest that actions that erode legally enforceable property rights could raise concerns for investors globally.

- **Misinformation and reputational damage:** A prominent South African bank has noted that misinformation about the Act has escalated internationally and could cause political and economic damage to South Africa's relationships with key trading partners.

In response to concerns, the South African Government has emphasised that expropriation without compensation would only be applied in exceptional circumstances, subject to legal due process, and in line with the Constitution. However, the controversy continues to fuel political and legal debates both domestically and abroad, which adds to uncertainty and hesitation of foreign investors funding mining projects in South Africa.

5.2 The number of JMCs licensed in South Africa

5.2.1 Mining permits and licences

The DMPR is the custodian of prospecting and mining rights in South Africa and, therefore, a key stakeholder in determining the number of JEM companies in South Africa. Within the DMPR, the directorate for Minerals Regulation is responsible for all permitting and licensing. During an interview with DMPR officials, it was conceded that “The DMPR is running on fumes, in terms of capacity and manpower.” The department is stretched and not getting to all the requests for data, nor updating compliance data as reported to the department monthly by permit and licence holders. On top of this, it is estimated that only around 50% of permit and licence holders meet their compliance requirements of submitting monthly reports. Should there be 100% compliance, the task of managing this volume of information would be beyond the department’s capacity. It is the author’s impression that the team seems overwhelmed by the sheer volume of data and reports that come their way and do not cope at all. To assist, they suggested that the author liaise with the Council for Geoscience in an attempt to find relevant data on junior miners.

The DMPR is central to key statistical data that are gathered in the mining sector. In the latest update of the database in 2025, the department lists in the “D1 spreadsheet”, there are 2,065 unique mine codes, an increase of 209 mining permits/licences from the 1,856 in 2018 D1 spreadsheet. These unique codes are 5-digit numbered codes allocated to each mining licence holder. The database provides high-level information:

- Mine code
- Mine name
- Mine owner
- Postal address
- Telephone number
- Magisterial district and province
- Operational status and type of mine
- Commodity
- Farm name

In September 2025, the author interviewed three directors at the DMPR responsible for:
- managing this database,
- small-scale mining, and
- investment promotion.

Apart from the information divulged in the publicly shared database, they are by law not allowed to share any more detailed data with the public. They indicated a willingness to assist in developing more granular data that differentiates between major-, junior-, small-scale miners and prospectors, but indicated that they do not have the resources currently to do so. The author had to make do with the information presented in the D1 2024 spreadsheet. Table 10 summarises the total mining permits/licences issued by the DMRE (2018) and DMPR (2024), per operational status as assigned by the department.

Table 10: DMPR operational status allocation and mining permits/licences issued – D1 database

Operational status assigned by DMPR	D1 2018	D1 2024
Agent	10	6
Mine at sea	36	37
Mine at sea, opencast and surface to the State Diamond Mining Co.	1	1
Mine at sea, opencast, surface, underground	0	5
Opencast mining	1,504	1,688
Opencast and surface operations	28	28
Opencast, surface and underground operations	2	20
Opencast and underground operations	33	33
Mine surface	0	34
Mine operating	4	1
Surface operations	30	0
Underground mining with surface operations	7	7
Underground mining	135	143
Prospecting opencast	6	5
Works opencast, surface, underground	0	1
Works surface	34	35
Works OMS opencast	1	1
Works OMS surface	24	19
Works OMS underground	1	1
Total	**1,856**	**2,065**

Source: DMPR D1-2018 and D1-2024 Spreadsheet

The D1 spreadsheet, as published by the DMPR, does not distinguish between different-sized operations as per our definitions for major-, junior-, small-scale miner or prospector. The author therefore applied some subjective criteria to the data to estimate the quantum of each grouping. The following subjective criteria were applied to classify each entity on the DMPR database as 1. major-, 2. junior-, 3. small-scale- or 4. micro miner:

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- Companies listed on the JSE were generally considered as *majors* except for a small number of listed companies with turnovers below R612 million, in which case they were classified as *juniors*.
- Companies not listed on the JSE but known to have large operations with employees exceeding 500 were also classified as *majors*.
- All companies not classified as majors holding more than one mining licence were classified as *juniors*.
- Companies known to the author, which fall into the definition of medium-scale miner, were classified as *juniors*.
- All remaining companies were subjectively classified as either small-scale miner or micro miner. In cases where DMPR used the words "quarry, colliery, exploration" in the mine name or if the owner showed some more formality in ownership, such as company, close corporation, trust, the author categorised these entities as small-scale miners.
- All remaining entities were classified as *micro* miners. These entities typically make use of persons' names as owner of the mining licence.

Table 11 provides a breakdown of the mining permits/licences as per the D1-2024 dataset.

Table 11: Awarded mining permits and licences by the DMPR in 2024.

	Major	Junior	Small-scale	Micro	Total
Eastern Cape	25	28	135	18	**206**
Free State	16	12	46	7	**81**
Gauteng	63	45	80	5	**193**
KwaZulu-Natal	39	29	75	7	**150**
Limpopo	47	39	62	8	**156**
Mpumalanga	122	60	89	4	**275**
Northern Cape	48	70	165	72	**355**
North West	76	142	155	75	**448**
Western Cape	44	32	113	12	**201**
Total	**480**	**457**	**920**	**208**	**2,065**

From the information in Table 11, 77% of issued mining permits and licences sit with the junior miners and 23% with the majors. It remains of strategic importance that more of the junior miners become successful and grow to become the majors for the future.

5.2.2 Prospecting licences

There is no official report from the DMPR that lists PLs in South Africa as in the D1 dataset for mining permits and licences. During the author's meeting with the DMPR in September 2025, it was suggested that the department urgently consider getting this in place. Not only will it support the department to better manage the duplication of PLs on areas already under licences, but it should be a key reference point for the current mining cadastre. It is of concern that this data is not prepared and ready, even eight months after the planned delivery date of February 2025 of the mining cadastre. If a basic set of high-level information is not available, and the directors responsible say they do not have the capacity to develop these reports, one can only hope that the mining cadastre will provide this detail. From the available information given by Stats SA and SARS in their public reporting of statistics, the author deduces that there are 7,186 mining taxpayers on the SARS statistics and that around 5,121 (7,186 mining taxpayers minus 2,065 mining permits/licences) PLs are issued.

6. INVESTOR LANDSCAPE AND FUNDING

Various funding mechanisms exist. To name but a few:

- The friends, family and fools funding system that is synonymous with most entrepreneurial ventures.
- Equity funding from high-net-worth individuals, listing on the stock exchange, private equity funds, J12 funds and venture capitalists.
- Debt funding from banks and other institutions.
- Streaming, where future production is sold for an up-front cash payment.

Table 12 illustrates some differences in funding models as presented by Wheaton Precious Metals at the 2019 Mining Indaba in Cape Town, South Africa (Wheaton, 2019).

Table 12: Overview of funding options and key considerations for junior miners

	Streaming	Equity	Debt
Non-dilutive form of funding	✓		✓
Initial value creation for both parties	✓		
Crystalises future production of mining partner	✓		
Improves project internal rate of return	✓		
No restrictive financial or hedging covenants	✓	✓	
Endorses technical merits of mine/project	✓		
Share production and operating risk	✓	✓	
Mining partner retains full operational control	✓	✓	✓
Expedited due diligence and closing process	✓	✓	
No fixed payment	✓	✓	

Source: Wheaton Precious Metals presentation – Mining Indaba in Cape Town, February 2019

Figure 7 illustrates the limited funding options for emerging miners during the exploration and feasibility study phases of mining project development. This is also where approximately 5,100 prospecting right owners in South Africa find themselves. As mentioned earlier in this report, exploration was traditionally funded in-house by major mining houses through their strong balance sheets. At present, South Africa is in dire need of alternative funding options for exploration projects, like what countries such as Canada, Australia, the UK, India and China are currently doing.

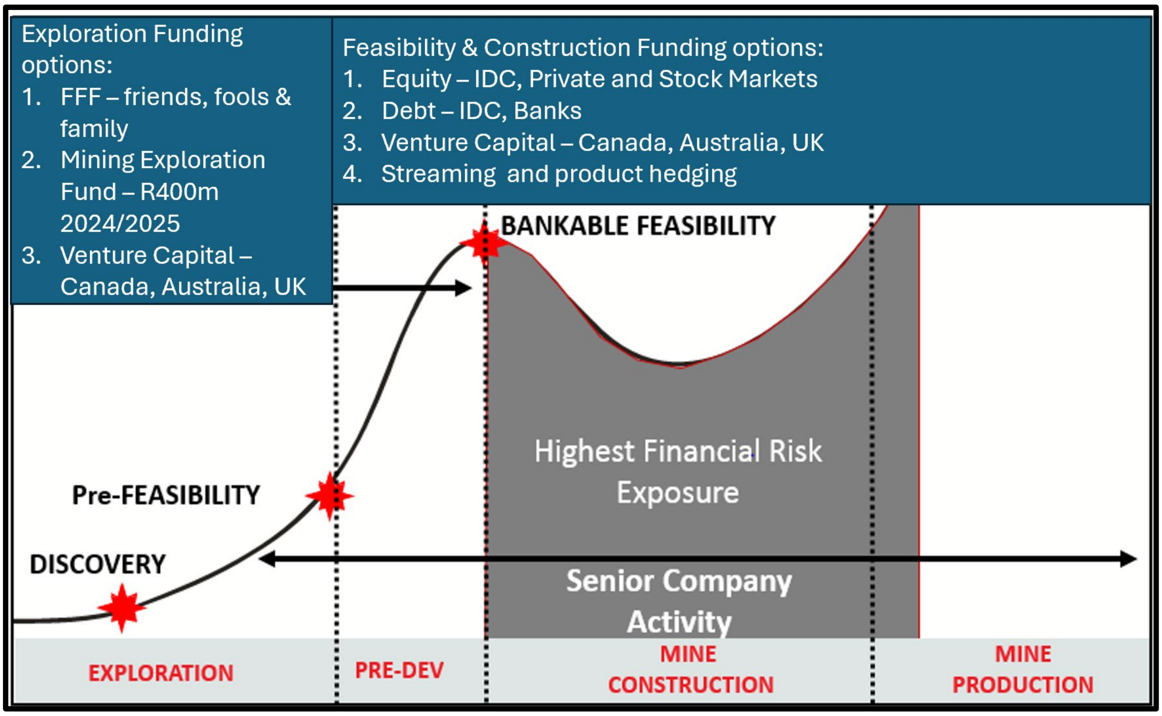

Figure 7: Funding options before and after Mineral Reserve Declaration through competent persons' reports (CPRs) and pre-feasibility studies

It is important for JMCs to understand the various options. Lack of knowledge may be contributing to their difficulties in raising sufficient funding, as highlighted by Patrycja Kula-Verster (Business Development Manager, JSE) during an interview on 3 September 2025. She stated that JMCs should not underestimate the value of having executive management capacity with knowledge, skills and experience in capital markets.

Paul Miller, the chief executive of the AmaranthCX mining consultancy, and former investment banker at one of South Africa's foremost commercial banks, highlighted the following as prerequisites for funding a mining project (Miller, et al., 2021):

- An ecosystem that will support junior miners, which includes two key components:
- A supportive regulatory environment that is transparent and free of suspicion of any corruption.
- An investment environment where individual investors return to the South African market. Currently, they are absent, and 90% of all assets are managed by 11 fund managers who are not mandated to invest in higher-risk assets such as junior mining ventures.

Mining involves large sums of start-up capital to successfully enter the establishment process. Small mines need a lot of working capital. This is considered in conjunction with interrelated factors such as the geological endowment, as well as recruiting or contracting specialist skills and successfully raising finances. The three key issues when considering investing in a mining project are (Miller, 2020) (Baxter, 2021):

- **Geological endowment**: There must be evidence of a proven reserve through credible pre-feasibility studies on which to grant project funding.

- **Regulatory certainty:** Regulatory certainty and the transparent administration of mineral rights are key in securing investment. Generally, there was nothing wrong with the MPRDA per se, but the administration of it was a serious concern for investors. One amendment was problematic: Section 2 requires ministerial approval for the transfer of shares within companies. This was certainly going to put future funders off, as they needed to be assured of the free trade in shares.
- **Capital:** Mining is capital-intensive, and start-up costs are particularly exorbitant. International capital is competitive, and South Africa is currently not viewed as a positive investment destination, as can be seen from the various downgrades by Moody's, Fitch, and S&P. Botswana is far outperforming South Africa in attracting investment, and this can be attributed partially to their more efficient administration of mineral rights and their more favourable approach to mining.

In recent years, several commercial banks in South Africa have gone public, saying that they would not be associated with any coal projects due to the environmental reputational risk that they associate with coal as a fossil fuel. Coal is a significant area of interest for junior miners, since it can often be accessed through open strip mining, and some coal can also be mined and sold without any beneficiation. Coal, therefore, holds a benefit for junior miners because the time from project start to product delivery to market is shorter than for most other commodities.

In his book titled *Junior Mining Investor*, Kevin Corcoran engaged 14 natural resource investment experts in the emerging miner space to share their experience (Corcoran, 2007). The book highlights the timing of investment as a key consideration. During times when commodity prices are low and mining economics are under pressure, this leads to market consolidation as the number of producers decreases and production falls. At some point, inventories tighten and demand drives prices higher, once again launching mining and exploration stocks into their next bull market cycle. The experts pointed out how the Toronto Stock Exchange (TSX) more than doubled the number of junior miner listings in 2003 from 1,500 to 3,300. It was noted that more than 60% of the world's exploration companies choose to list on the TSX-Venture Exchange. Dr Russel McDougal argued that investors will only speculate into the junior mining sector if market currents are in their favour (Corcoran, 2007). David Morgan noted that investors are sensitive towards the time and money required to develop a mine, indicating that it can take five years or longer from the time a prospective property is identified until full production is achieved. Morgan highlighted the following risks that investors will consider before deciding to invest in the junior mining sector (Corcoran, 2007):

Assay risk: Salting of grades has been known to happen, where grades are made to look better than they are.

Management risk: The focus is on management teams with long-term track records of success. Investors will not invest in projects with inexperienced technical teams.

Financial risk: The investment should be sound, viable, financially up-to-date and accurate.

Trading risk: The investment should yield returns within acceptable timeframes.

Scott Wright concurs that when investors research a junior miner, they place a heavy weighting on the company's history and, in particular, on the existing management team's history (Corcoran, 2007). It is argued that some management teams may have great track records in exploration but no proven success in project construction or in going operational (Corcoran, 2007). Investments need to be viewed objectively on a project-by-project basis. Wright warns investors to look past the smoke and mirrors that many junior miners exhibit (Corcoran, 2007).

Kenneth Gerbino lists 12 guidelines for buying junior mining gold stocks (Corcoran, 2007):

1. There must be an independent professional resource calculation. He highlights the importance of the competent or qualified person sign-off in terms of international reporting codes, such as Canada's National Instrument 43-101 (NI 43-101).
2. It is suggested that investing in producing mines should carry a 60% weight of a junior mining portfolio and that the remaining 40% should be made into near-term production projects.
3. Good management with no less than 20 years' experience.
4. Size of deposit is important. The larger the better.
5. Grade is crucial. Understanding the commodity and what entails a good grade is fundamental. Marginal and low-grade resources should be avoided.
6. Expansion possibilities of production and resources/reserves are important.
7. Cost of production and where the project lies on the production cost curve relative to peers.
8. Value per commodity unit. The lower the price, the better for the investor.
9. Investors will avoid undue risk in a favourable commodity environment.
10. Net present value of the project and its ability to generate cash.
11. Investors will compare the project against peers in terms of grades, tonnages, product unit cost, production unit cost, reserve or resource value per dollar invested, market cap per reserve/resource ounce, discounted cash flows, and net present values of the mining assets.
12. Be aware of gross metal values. Calculations should always consider modifying factors such as losses and dilution.

Junior miners should be aware that investors are sophisticated and will perform detailed due diligence work before any investment is considered. The junior miner should have a sound understanding of the differences among equity, debt and other funding models. It is in the junior miner's best interest to develop their project with a strong team of professionals, aligned with best reporting principles such as the South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (2016 Edition) (the SAMREC Code), the Australasian Code for Reporting of Exploration Results, Mineral Resources, and Ore Reserves (2012 Edition) (the JORC Code) or NI 43-101. Without a sound knowledge of the investment process, the junior miner will find it difficult to find investors and secure funding.

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6.1 Funding options considered by JEM

Having interviewed numerous CEOs and executives from JMCs who are members of the Minerals Council, a few common themes presented themselves:

- There is virtually no funding available for explorers until a pre-feasibility study (PFS) has been completed. These executives estimate the cost for exploration drilling and specialist studies to get to that point where mineral reserves are declared in terms of the SAMREC Code, at between R150–300 million.
- There is no single source of funding that must be pursued, and it requires tenacity in finding a combination of debt, equity and possible streaming funding to develop and construct a mine to a point of reaching steady-state production and positive cash flows. Junior miners find IDC funding both helpful and restrictive (restrictive in the sense that the IDC terms dictate that all other future sources of funding be vetted and approved by the IDC. This slows the process of project development down and can be frustrating).
- Only once a bankable feasibility has been completed, traditional commercial banks may consider funding a junior miner, but even then, banks prefer dealing with established producing and cash-positive mines. It is almost impossible to meet their requirements as junior miners.
- The value of having an executive on board with knowledge and experience in how capital markets work and how to engage funders is invaluable, and often not within the skillset of the technical team.
- Once a mining right is executed, the rehabilitation guarantees must be paid in full – which is often several millions of rands. This often exposes junior miners who do not have access to sufficient funding, and because their time limit of five years plus one extension of three years on their PL has been reached, Juniors are forced to execute their mining right or stand the risk of losing their project.

6.2 Institutional funding in South Africa

6.2.1 The PIC

The PIC manages between 82–85% of government employee pension funds and is averse to high risk. The PIC has not funded any emerging mining projects because of the high risk associated with exploration. The PIC has not made a single mining investment since 2010, according to their geologist.

Should the PIC fund a mining project, their requirements are:

- A full bankable feasibility study (BFS) which passes their due diligence
- A minimum funding requirement of between R500 million and R1 billion
- Signed off-take agreements for a minimum of 60% of production
- The project owner must have between 2–10% skin in the game.

6.2.2 The IDC

The IDC provides and manages funding and support on four levels:

- By administering the Small-Scale Mining Fund, which is managed by the DMPR.
- By administering and managing the MEF established in 2024 in combination with the DMPR which drives policy of the fund, and the Council for Geoscience which provides technical support.
- At a project development level through their Projects department.
- At a mining operations level, by their Mining Industry department for projects that have developed past project development, as overseen by their Projects Department.

6.2.2.1 DMPR Small-Scale Mining Fund

The Small-Scale Mining Directorate of the DMPR was re-established in 2024. The Fund is motivated to Treasury on an annual basis. In 2024, up until March 2025, the Fund allocated R67.5 million to 20 small-scale miners. The Fund is advertised annually, and in 2024, a total of 24 workshops were held around the country to explain and market the Fund. The next advertisement for small-scale funding until March 2026 was scheduled for end September 2025.

The fund works as follows:

- Only valid mining permit holders, or a letter from a regional DMPR manager motivating a need for funding, qualify for this funding
- Money is allocated as a zero-interest loan
- Funds must be utilised to either buy equipment or to pay the rehabilitation guarantees.

6.2.2.2 MEF

The MEF is an outflow of governments' exploration strategy as published in 2022 (DMRE, 2022). A memorandum of understanding to launch the MEF was signed on 6 February 2024 at the Mining Indaba in Cape Town. The MEF is overseen by three government institutions, each having two members on the MEF's steering committee:

- DMPR is responsible for implementing and steering the Exploration Policy of 2022.
- IDC is responsible for administering and managing the MEF.
- Council for Geoscience provides technical support, assesses applications from a technical viability perspective.

The Phase 1 rollout of the MEF is handled as a proof of concept, and the steering committee of six members representing the three government institutions set a path to ensure good governance structures were in place. During an interview with a DMPR director, he stated that Phase 1 was "too important for SA mining to fail", "exploration in South Africa is in the ICU attracting less than 0.5% of global investment", and that all efforts were made to ensure success. It was very hard for the DMPR to motivate to Treasury to approve the initial fund of R400 million, and if Treasury were to approve future requests for Phases 2 and 3, Phase 1 needed to prove the concept and demonstrate good governance. The Phase 1 funding (a total of R400 million) is a 100% public fund, but Phase 2 may be a combination of private and public funding.

All agree that the Phase 1 fund is very small and not even enough to fully support more than two emerging miners. It is, however, a start and was rolled out as follows:

Phase 1, Window 1: April 2024–March 2025

Funding Window 1 was opened for applicants on 12 June 2024, with R160 million allocated from the total of R400 million.

- The Council for Geoscience considered only applications for the following commodities:
    - Copper
    - Nickel
    - Lithium
    - Graphite
    - Rear earth elements
- A total of 119 applications were received, with a total need for R3.7 billion.
    - 46 applications were eligible, with a total need for R1.1 billion based on the following criteria:
    - Only PL holders were considered.
    - If PLs were within the last year of validity, applications were not considered.
    - Background checks were done on applicants, and if there were any signs of legal disputes regarding PL duplication, these applications were not considered.
    - There was a 51% black ownership requirement.
- Eight applicants were successful and granted funds between R20 million and R35 million each out of the available R160 million.
- The eight successful projects are all at the early discovery greenfield stage.
- The successful applicants hold projects in the following provinces:
    - One in Free State
    - One in Limpopo

- One in North West
  - One in Mpumalanga
  - Four in Northern Cape.
- Disbursements are milestone-based as assessed by the Council for Geoscience. If, for example, 50 exploration holes were planned, and after 30 holes, no positive discoveries were made, no further disbursements are made.
- Funding is based on a convertible grant. The grant can convert to a maximum 49% equity stake.
- If no economic viability results, the beneficiary carries no liability to repay the grant, or the part that has been disbursed.
- Lessons learnt during Phase 1, Window 1:
  - Two successful beneficiaries did not accept the funding, of which at least one cited the 49% equity stake as too aggressive.
  - The steering committee will reconsider the 49% equity stake for Window 2, considering: historical skin in the game, how far the project has been developed between a. having done very little at all, to b. how near the applicant is to publishing a CPR and BFS. However, this is not a decision by the steering committee, but is under advisory.
  - Only two of the eight successful beneficiaries have in-house geological capacity.
  - Success will be if two to three of the eight grants made yield a positive outcome as evaluated by the Council for Geoscience.
  - The Steering Committee identified that the DMPR lacks fund management expertise and must improve.
  - The DMPR is aware that the tenure of PLs (five years plus one extension of three years) is of concern but does not have the powers to change legislation.
  - Success during Phase 1, Window 1 and 2 will be key to motivating Phase 2 to Treasury.
  - The DMPR must find ways and appropriate skills (public relations) to better market and motivate to Treasury.

Phase 1, Window 2: 1 April 2025–31 March 2026

Funding Window 2 was planned to open in September 2025, with R260 million available of the R400 million approved fund.

- For Window 2, the Steering Committee will accept both PL holder and mining rights holder applications.
- There will be a change in the commodities/minerals that will be considered.
- There will be a greater focus on brownfields projects as opposed to early discovery, greenfield projects.

Phase 2, beyond March 2026: Key questions

- How to attract private funding to bolster public funding. The South African fiscus is under severe strain, with many requests and motivations to Treasury, but little capacity to fund these needs.
- Governance must be beyond reproach, and the strategic intent is to build credibility – both locally and for international investors. This requires structures that are transparent in their dealings, open to audits and scrutiny, and managed by competent, experienced people.
- Where should the Phase 2 fund be housed in terms of a legal entity?
- Will it be a separate entity from the current three-state institutions with an independent board and committees?
- What will the tax implications be?
- Will it still fall inside the auspices of the IDC with an independent fund manager? Is there such a fund manager out there?

6.2.3 Stock markets

International mining capital is predominantly raised on the TSX and TSX Venture Exchange, the Australian Stock Exchange (ASX), the London Stock Exchange (LSE) and the Alternative Investment Market (AIM) and, to a lesser extent, on the Hong Kong Stock Exchange (Hang Seng). The JSE does not have a history of raising venture capital, nor does it have the capacity to do so. Table 13 provides a summary of mining companies listed on the various international stock exchanges. The table was developed based on different market capitalisation parameters and currency exchange rates on 4 June 2023.

Table 13: Number of mining companies listed on international stock exchanges

Market capital of company	TSX	TSX Venture Exchange	ASX	LSE	AIM	Hang Seng
Less than US$5 million	2	372	321	14	38	0
US$5–10 million	8	157	138	10	31	0
US$10–25 million	13	203	171	8	44	6
US$25–50 million	22	104	90	8	30	8
US$50–100 million	21	52	86	9	31	14
More than US$100 million	124	65	146	91	55	79
Total companies listed	190	953	952	140	229	107

Source: Author's analysis of stock exchange data on websites (accessed 4 June 2023).

Considering a junior miner market capitalisation of less than US$50 million, Figure 8 shows that most international junior miners raise their capital in Canada, Australia or UK.

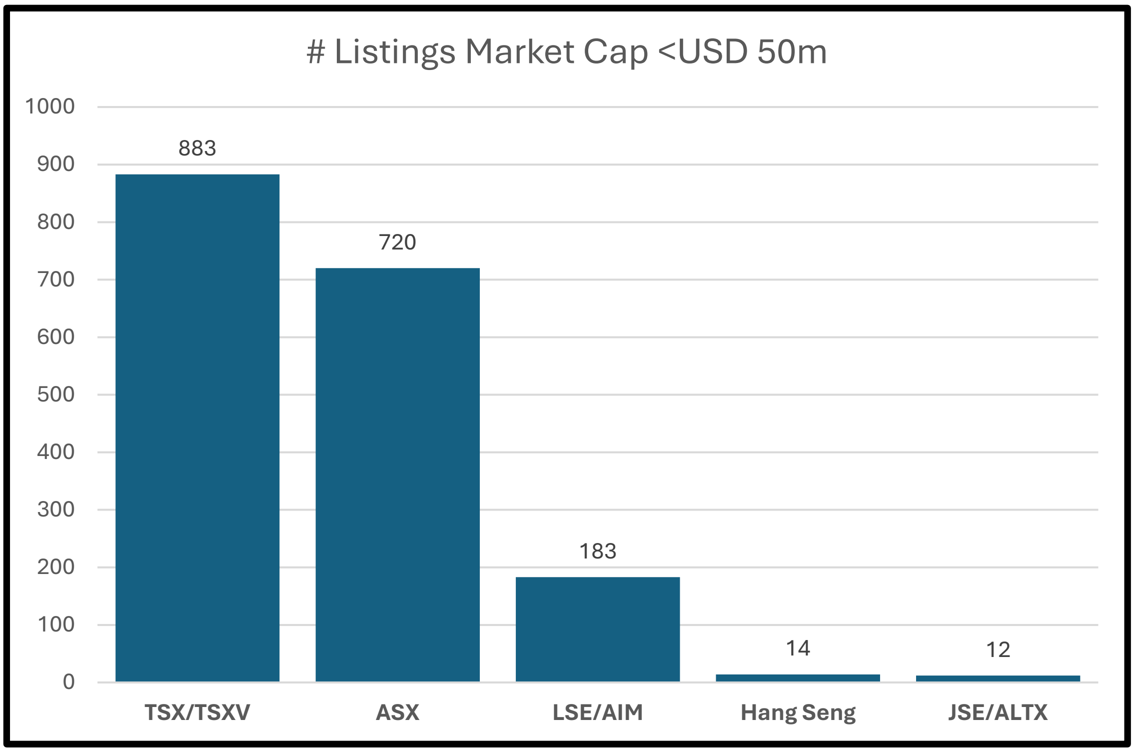

Figure 8: Number of junior miner listings with market capital below US$50 million (2023-2025)

6.2.3.1 The JSE

During an interview with Ms. Kula-Verster at the JSE in September 2025, she highlighted the JSE's efforts to train junior miners through various forums to bridge the gap in their lack of knowledge of capital markets. The JSE offers an Accelerator Programme that is an initiative to get junior miners investor ready. She highlighted that since our previous interview for the Minerals Council 2019 research report, the JSE has launched a new product called JSE Private Placements (JSEPP). This is an alternative to raise capital for private companies that do not want to raise equity funding through a JSE Main Board or Alternative Exchange (AltX) listing.

Kula-Verster highlights that South Africa does not have what she calls retail options, such as those found on the TSX in Canada, where mine developers and explorers attract funding from investors that receive a "share flow through" benefit on their taxes. She states that there are around 50 institutional investors or fund managers in South Africa, all of whom prefer a minimum of a PFS where mineral reserves are declared, before investing. They are risk averse. South Africa does not have a mature venture capital platform, and exploration companies find it easier to raise venture capital, which is very high risk, in Canada, UK and Australia, where they have critical mass in terms of venture capital funding.

Kula-Verster says that the JSE cannot discount the fact that it is tough to raise capital for exploration globally. The key question that she asks is: "How do we fund mining projects to the point of a CPR?". Although the DMPR Exploration Fund is a great start, albeit minute, South African explorers require Treasury to add a tax incentive for investors, as seen in Canada and Australia.

In fulfilling its duty to manage risk for both project owners and investors, the JSE requires the following documents for all fund raised on JSEPP, Main Board or AltX:

1. Financial Intelligence Centre Act 38 of 2001 documentation (Companies and Intellectual Property Commission documents, directors and key shareholders identification documents, and proof of residence)
2. Proposed funds raised:
    a. Size of funds raised
    b. Debt-, equity- and/or mezzanine funding
    c. Use of funds
3. Three years of audited financial statements (except for venture capital and greenfield projects)
4. Management team profiles
5. Current shareholding structure
6. Business plans and financial forecasts
7. Prospecting and mining rights
8. CPR required, indicated resource preferable
9. Resource must be of economically viable quality
10. Logistics, target market or buyers, power, water, environmental impact assessment, financial model and mine plan required.

6.3.2.2 JSEPP

This is an online platform that allows private companies (not listed on the JSE Main Board or AltX), to raise capital from qualified investors, and investors to find attractive investment opportunities. The JSE plays a key role in facilitating a process to minimise risk for both project owner and investor through proper vetting processes and providing a platform that supports:

- Digital deal workflow
- Digital invitation and onboarding of investors, with Know-Your-Client/Know-Your-Business suitability checks
- Data room for sharing diligence documentation
- Non-disclosure agreement management
- Order book management with term sheet markups

- Document execution
- Securities issuance
- Cash custody and escrow.

Table 14 provides a typical fee structure for JSEPP, as adapted from the table published on their website.

Table 14: JSEPP indicative fees

Raise amount	Setup fee This "fixed fee" is for assessing the deal, commencing investor engagements and compliance	Success fee This "fundraising fee" is for matching and successfully closing a deal with the approved investor(s)
R10 million–R20 million	R20,000	1%
R20 million–R200 million	R50,000	0.75%
R200 million–R1 billion	R100,000	0.50%
Above R1 billion	R150,000	0.25%

JSEPP is not dedicated to mining clients, but rather all industries with a strong environmental, social and governance focus, such as:

- Small to medium enterprises
- Renewable energy
- Healthcare
- Transformation

6.3.2.3 Listing on the JSE Main Board or AltX

The benefits of listing on the JSE:

- Access to deep pools of capital (debt and equity)
- Monetisation tool for existing shareholders
- Improved access to capital via secondary capital raising
- Diversify shareholder base; get access to large and complementary pools of capital
- Shares may be used as transaction currency for future acquisitions
- Increase visibility of company through research coverage and increased investor interest
- Access capital from international emerging market investors, focused on companies with African assets.

Table 15 provides a summary of admission requirements on the JSE Main Board and the AltX.

Table 15: JSE admission requirements

	Main Board	AltX
Share capital	R50 million	R2 million
Historical audited financials	3 years	None
Pre-tax profit (year prior to listing)	R15 million	N/A
Shareholders spread	10%	10%
Sponsor or designated advisor	Sponsor	Designated advisor
Number of transaction categories	2 (threshold 30%)	2 (threshold 50%)

Table 16 provides an overview of costs for going public on the JSE.

Table 16: JSE listing costs

Fee type	Description	Indicative cost
Documentation fee	One-time application submission fee	R125,667 (incl. VAT)
Initial listing fee	Based on market cap; capped at R50 billion	R486,000 (R1 billion cap) R900,000 (R5 billion cap) Max: R4,275,306
Annual listing fee – Main Board	Tiered by market cap with capped maximum	R67,000–R605,000
Annual listing fee - AltX	Flat fee for smaller, high-growth companies	R47,209

In addition to the costs described in Table 16, the following considerations are key for any company that wants to go public on the JSE:

Advisory and sponsor costs, essential for a successful JSE listing, as highlighted on the JSE website

- While JSE listing and annual fees are transparent and competitive, the major costs typically stem from hiring professional advisors and a JSE-accredited sponsor or designated advisor.
- These include legal, audit, corporate finance, and investor relations experts.
- Key roles of the advisory team:
    - Ensure regulatory compliance and navigate JSE rules
    - Structure and price of offer, and support capital raising
    - Draft and review disclosure documents

- Advise on timing, investor targeting, and market positioning.

- Though costs vary by listing size and complexity, they are crucial for reducing risk, enhancing credibility and improving listing outcomes.

Current JSE listing of mining and mining industry-related companies

The JSE provided the author with an updated spreadsheet on 2 September 2025, indicating a total of 53 companies related to mining, energy, oil and gas listed on the JSE. This includes 44 companies listed on the Main Board and nine on the AltX.

Table 17 provides a list of the mining and exploration companies, with a market capitalisation of below R1 billion, listed on the JSE as on 9 September 2025.

Table 17: JMCs listed on the JSE – 2 September 2025

Company name	Listing date	Board	Market capital
Orion Minerals Limited	2017/09/18	Main	R894,279,889
Wesizwe Platinum Limited	2005/12/21	Main	R732,522,176
Southern Palladium Limited	2022/06/08	Main	R696,244,500
MC Mining Limited	2006/11/30	Main	R670,701,625
Eastern Platinum Limited	2007/05/21	Main	R637,847,992
Copper 360 Limited	2023/04/21	AltX	R532,690,228
BEE - Sasol Limited	2011/02/07	Main	R392,543,514
Salungano Group Limited	2005/07/20	Main	R209,958,427
Sail Mining Group Limited	2005/08/12	AltX	R152,545,721
Randgold & Exploration Co Limited	1993/02/01	Main	R60,413,903
Shuka Minerals Plc	2025/05/21	AltX	R60,172,737
Sable Exploration & Mining	2005/06/27	Main	R3,393,885

6.2.4 South African Treasury and tax incentives

This research makes the case that exploration through junior miners in South Africa is strategically key for job creation and growing tax revenue for the country. Having engaged with various role players through structured interviews with senior decision makers at the DMPR, PIC, IDC and JSE, Treasury does not yet see the strategic value that can and should be unlocked. Perhaps, Treasury, which appears to be under pressure from various industries in South Africa making their cases for special protection from or through tariffs and the need for tax incentives, need further strategic engagement.

The DMPR team describes the process of motivating for the R400 million MEF to Treasury as hard and painful. Over the past four years, Treasury has also not been eager to entertain the idea of FTS, as was so successfully employed by Canada to stimulate their economy through prospecting and junior mining.

The DMPR and Minerals Council agree that ways and strategies need to be found to convince Treasury about the huge strategic value that mining holds for South Africa. Kriel made a strong case and pleaded to Government and Treasury for this in his PhD thesis titled A proposed new *integrated dispensation model to unlock the value-adding potential of the Junior Mining Sector in South Africa – an international comparison* (Kriel, 2023). This thesis received positive feedback from the DMPR directorate for Investment Promotion. Yet, there is very little coordination and alignment between key stakeholders as to how to decisively move forward.

7. KEY THEMES IDENTIFIED FROM INTERVIEWS WITH JUNIOR AND EMERGING MINER CEOS, EXECUTIVES AND INDUSTRY REPRESENTATIVE BODY CHAIRPERSONS

The author engaged CEOs, executive directors and Director of ASPASA and Vice Chairperson of SADPO, representing around 300 mines and quarries in South Africa. The engagement was structured as an interview around key discussion topics:

- Stages of their projects on the project development cycle – exploration, pre-development, mine construction, mine production or closure. Investment that was required to reach that point. Impediments that they experienced in reaching that point, and what held them back from grow or progressing.
- Their practical experiences around the regulatory environment in South Africa, as well as the cost of compliance.
- Their practical experiences with funding their projects.
- Their views on job creation and social responsibility.
- Their message to peers and to the Regulator.

The following key themes emerged from the captains of the JEM industry.

7.1 Cost of compliance

The cost of compliance has increased significantly, adding between 6% to 25% to total operating costs, which threatens the sustainability of junior miners. Illegal miners do not have to incur these costs and, therefore, there is an increase in incidences of artisanal mining. They cite the following as key areas of cost inflation in terms of regulatory compliance:

- The ever-escalating pressure of social responsibility on mines where government fails communities. Mines are now expected to do the job of government by maintaining community clinics, roads, schools, and water and electricity infrastructure. Mines are expected to fill these gaps left by bankrupt municipalities that hold mines hostage in terms of their social licence to operate. The DMPR does not support miners in these discussions by taking strong positions for the mining companies; instead, they facilitate endless meetings at huge cost to mining companies to discuss the same issues *ad nauseam*.
- DMPR inspectors' issuing of Section 54 and Section 55 notices, which stop production. These safety stoppages come at significant cost to mining companies, eroding the bottom line to a point where mining has become unsustainable. Junior miners feel that, although they subscribe to Zero Harm, inspections are measured against the wrong set of key performance indicators. They should not be measured only on how many Section 54s they issue, but also on how they assisted in the growth of the industry.

- Level 9 collision avoidance system technology is a significant challenge with all junior miners. They all support safe working environments, but state that the blanket approach of enforcing Level 9 was ill thought through. The average cost per installation per machine or vehicle is around R60,000. Depending on what brand is installed and the size of machine, the cost can be as high as R700,000 per machine. Small-scale and junior miners do not have the capital to comply and, when they do, this comes straight off their bottom line. Even mining contractors are failing under this pressure, with only two Tier 1 mining contractors surviving in 2025. In 2010, there were at least 10 Tier 1 mining contractors in South Africa. Tier 2 and 3 contractors do not have the balance sheets to fund this Level 9 technology. This is cited as a key destroyer of value and sustainability for the mining industry in South Africa.
- The cost of specialist consultants to perform environmental impact assessments is something that legislation now requires. In 2012, one could make use of master's students to perform these studies, which provided good project exposure to these students and made it affordable for junior miners. The requirement for Government-Certificated Engineers on mines also comes at huge cost, while there is a scarcity of these skills. Every mine is required to appoint nine certificated individuals, which is feasible for majors, but most juniors do not have nine people on their payroll.
- Many small-scale miners cannot meet compliance requirements of monthly submissions to the DMPR. The DMPR acknowledged that they see compliance levels of around 50%.
- The new requirements surrounding the 500 m fly-rock zones introduced significant additional cost for face profiling, ground vibration monitoring and specialist consultants. The additional cost is estimated to be between R500,000 and R1 million per annum per mine or quarry.
- The cost of rehabilitation guarantees places a large cashflow burden on JEMs when they execute their mining right. The payment is up-front and ranges between R200,000 for a small sand operation to millions of rands depending on the rehabilitation liability calculations. JEMs suggest that the DMPR consider spreading these payments over a five-year period.

7.2 Cost of electricity and access to rail and port

The cost of electricity has increased at rates significantly higher than revenue from mining production. Challenges that have been faced by Eskom over the last few years have resulted in significantly higher energy costs for the mining sector, threatening the sustainability of junior miners. The increase in electricity was three times higher than the annual consumer price index, eroding margins for mining companies that are electricity-intensive users. Chrome smelters, for example, are at risk of shutting down under electricity cost pressure, which has a negative impact on beneficiation. Some of these smelters are buyers of chrome ore from junior mining producers, who might soon face the challenge of finding new customers for their ore.

Rail freight has declined by almost 50% in certain regions, with a small recovery in 2025. Cost to transport bulk commodities via road is, in many instances, double that of rail. Roads surrounding mines have deteriorated substantially, resulting in higher maintenance costs on road trucks as well as road repairs, all eroding the bottom line of mining companies.

There are limited port allocation and access for new entrants into the market. Juniors can achieve better profit margins if they can export their products. Most of the port allocation sits with Majors. As the junior sector grows, these port allocations need to be reconsidered.

7.3 Criminality, cartels, mafia and corruption

Incidents of mines being hijacked by organised crime syndicates are on the increase. Calls to SAPS are sometimes unanswered, and mining companies have put measures in place to protect their operations by private security. Mines are supporting one another by pooling their security forces to assist one another when these ever-increasing attacks occur. Again, all at a huge additional cost to mines. Threats are no longer small and random; they are highly organised, and mines are hijacked by criminals bringing large earthmoving machines, costing hundreds of millions of rands to sites they attack. Managers are no longer safe, and many management teams have a personal security detail. Mines struggle to attract talented professionals, and the quality of management has deteriorated at some mines.

7.4 Artisanal mining is illegal and killing the industry

The DMPR acknowledges that artisanal mining is illegal and a big problem in South Africa. Government has failed law-abiding mining companies by allowing this situation to escalate to a point where these illegal operations are now endemic in mining societies. These criminals do not comply with Social and Labour Plans (SLPs), Level 9 collision avoidance, properly qualified management teams, safety standards, codes of practice, labour laws, rehabilitation of mined areas, and wages that are paid are likely to be exploitative.

7.5 South African mining is becoming uninvestable

In doing roadshows to investors in North America in 2025, junior miners report that Americans and Canadians respond positively to the technical viability of what is presented to them, but with an uncertain response: “We like the resource and the project, but we don’t know how to think about South Africa considering the political disconnect with the West.” Foreign investors find it impossible to fathom why mining companies must pick up the responsibility of government to build schools, hospitals and roads well outside the immediate reach of the mines. They do not see the investment value in an industry infested by crime, where the Regulator issues multiple licences for the same prospecting area, and then they must fight this in court for many months at huge cost. They feel that tenure of prospecting and mining rights is under threat under new legislation. They also cite the Minister of Mineral and Petroleum Resources as being out of touch and unwilling to force his department to deliver what the law requires. Too many matters are left to the minister’s discretion without clear transparency or accountability. There needs to be a ministerial guide handbook for discretionary matters, as well as a public record of his decisions.

7.6 DMPR or DPWI

Some small-scale miners in the aggregate and sand business make the case that their quarries should rather fall under the Department of Public Works and Infrastructure (DPWI), and not mining. Their reasons are that they operate at a completely different business model than traditional mines, in an industry that is wholly committed to the South African local market. The South African economy is growing a 1% per annum, which is not sustaining businesses in the local market. Inflation is at 3.5% while the annual population growth rate has been between 1.2% and 2% for the past decade.

Prices that sand and aggregate producers can realise for their products are around 2.5% -5.0% of what large miners achieve. Aggregate sells for R150 per tonne while one tonne of gold ore at 3g/t grade will have a revenue of R6,000. The economic fundamentals are very different, and it is not sustainable to continue to burden these small-operators with first-world standards such as Level 9 collision avoidance and the legal requirements of appointing certificated professionals as is required from the majors. Small-mine executives claim that the cost of compliance is destroying the sector. Some companies have closed as much as 50% of their quarries in the past 20 years, not because their resource has been depleted, but because it was no longer economically viable. The construction industry is crumbling. The so-called construction mafia is hijacking both quarries and construction projects.

There is precedent where borrow-pits for road construction are allowed and managed under DPWI. These borrow pits do not have to deal with community projects and social upliftment, nor are they visited weekly by inspectors who issue notices to stop operations as do the DMPR inspectors.

7.7 Derelict mines and operations on care-and-maintenance

The Junior Mining Council argues that derelict mines and more than 30 mines under care-and-maintenance could be a good opportunity for mining entrepreneurs entering the mining industry as emerging miners. Emerging miner cost structures are overhead-light and may see them restarting some of these operations. It will however require a willingness by Majors and government to entertain these discussions. It will also require due diligence, specialist technical and financial evaluations to ensure that it is viable before any changes in ownership or sub-contracting arrangements are considered.

Over and above this, old stockpiles and waste dumps also provide opportunities for emerging miners.

Most of these opportunities are, however, under the control of government and majors. The DMPR processes for transfer of ownership is cumbersome to a point where majors do not engage on these matters simply because of the bureaucracy and red tape involved.

7.8 Regulation of mining in South Africa needs to be streamlined

Junior mining executives and CEOs make the case that regulation of the sector has become cumbersome. They argue that there are simply too many stakeholders (cooks in the kitchen) that industry is expected to engage with, each exerting their own version of the truth and priorities on mining companies.

Coordinating and managing all these stakeholders without the DMPR demonstrating that the interests of mining companies are its priority has become untenable. Licensing is no longer only a case of engaging multiple governmental departments i.e., DMPR, DWS and Department of Forestry, Fisheries and the Environment (DFFE) – as complex and slow as it is – but these days, multiple communities and the municipalities are also hampering any productive progress. More often than not, these engagements require multiple meetings. Frustration sets in when meetings are scheduled and confirmed only to have these external stakeholders cancelling on short notice or simply not attending at all. Apart from this, a culture of corruption has set in with many stakeholders demanding compensation for their participation, or they simply hold the process back.

Junior miners are frustrated and do not see leadership from the DMPR regional managers. A culture of talking about talking has set in without the DMPR setting a clear structure at engagements they are chairing.

Several instances have been voiced where regional managers suggest meeting with certain undesirable individuals in municipal and community structures under the guise of open and inclusive communication.

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There is poor integration of different directorships within the DMPR, the left hand does not always know what the right hand has done. This leads to mixed messages for mining companies. The author can attest to this. When asking various directors at the DMPR for access to data and statistics on junior mining licensing, they responded by saying that the author may want to speak to the Council for Geoscience about this.

Junior mining leaders would like to see the DMPR setting the correct tone to ensure that the department provides better leadership and guidance to these other stakeholders and side with industry, rather than alienating and portraying mining companies as the enemy during these discussions with stakeholders. Juniors request the DMPR to assist in halting the habit of stakeholders re-scheduling meetings two and three times as this costs JMCs time and money, both resources they can ill afford to waste.

7.9 A DMPR that is in constant flux does not inspire confidence

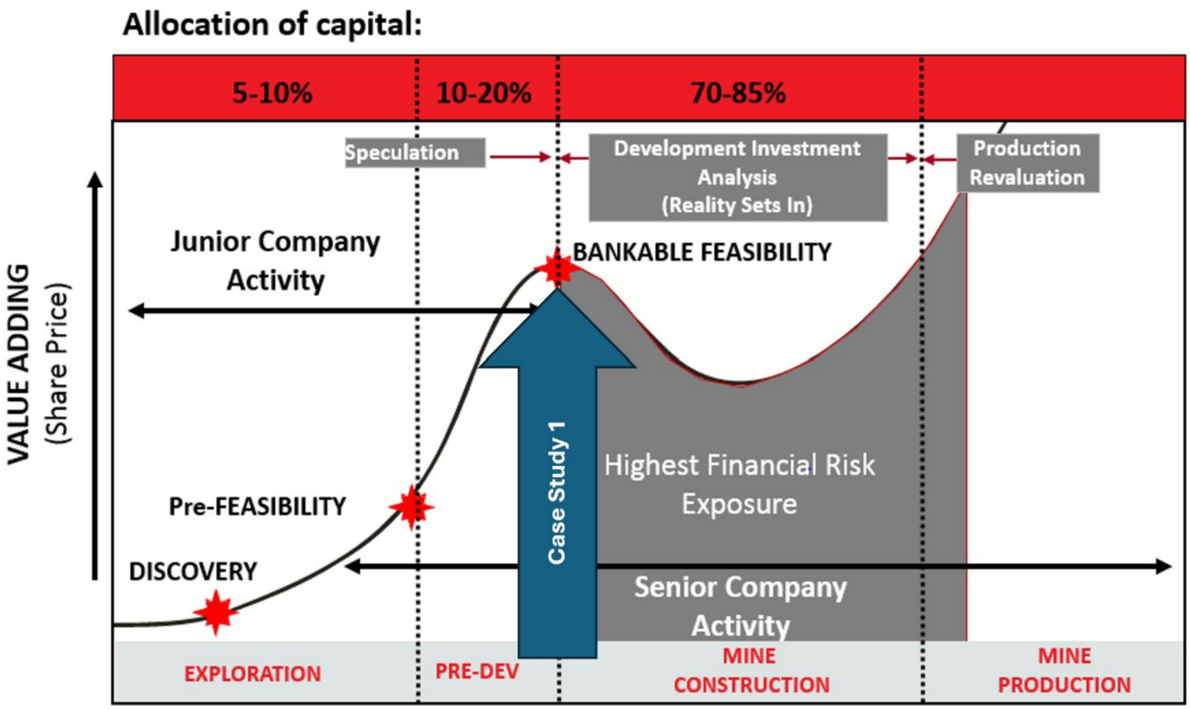
The government department responsible for minerals and mining in South Africa has undergone several name changes, evolving from the Department of Mijnwezen (Department of Mining) in the late 19th century, to various iterations including the Department of Mineral and Energy Affairs (1980 – 1997), Department of Minerals and Energy (1997 – 2009), Department of Mineral Resources (2009 – 2019), the Department of Mineral Resources and Energy (2019 – 2024), and the Department of Mineral and Petroleum Resources (2024 – present)).

Junior mining executives call for stability at the Regulator at a time when South Africa and the exploration side of mining require foreign investment. They make the case that the constant changes experienced since 2009 are not valuable for the industry, and that government needs to focus on creating an environment conducive to growth and investment, rather than constant administrative shifts in regulatory responsibilities. Some of the recent – August 2024 – changes have not yet been updated on the department's website and some e-mail addresses of key directorates, as observed from the website https://www.dmre.gov.za remain unchanged at the time of writing.

These observations may be seen as trivial, but junior mining CEOs observe the broader impact and confusion this creates in the market and with investors. The investment community requires clarity and stability, something not currently experienced with the Regulator.

8. CASE STUDIES

8.1 Case study 1: PGMs



Case In Brief

- PGMs project located on the Eastern Limb of the Bushveld Complex.
- Converted an old order prospecting right to new order PL in 2005.
- 50% partnership with local community – a significant advantage given that engagement is with a single, clearly defined community structure via a traditional council.
- In 2007-2014, legal action taken – Department of Minerals Resources awarded PL to another party on same prospect. The department cancels wrongful PL of other party, yet one month later the PL is again awarded by the department to the same party. Case taken to Court of Appeals in Bloemfontein. Court ordered the department to cancel PL to wrongful party. Legal cost incurred +/- US$2.2 million. (~ZAR17.6 million @ZAR8/US$).
- Ruling in favour of the applicant in November 2014.
- In June 2015 PL secured. Lost investor during this period, owner incurring huge legal costs to something that should never have occurred in the first place.
- Second round of funding roadshows. Met with 150 investors in 2015, with no success.
- In 2019 PGM market improved and started roadshows for investment, one-on-one meetings at Mining Indaba.

- In 2020, initiated investor discussions in Australia. COVID-19 brought everything to a halt. Continued preparations for listing on ASX and JSE (dual listing).
- In February 2022, extension of three years received from DMRE on PL.
- On 6 June 2022, listed on ASX and raised AUS$19 million. Due to bureaucratic process, funds in escrow for almost two years. Necessitated listing on JSE.
- On 8 June 2022, listed on JSE (Nothing was raised at JSE), after sorting out issues with JSE reading panel related to resource estimation.
- From August 2022-August 2024, completed 33,000 m of exploration drilling.
- On 28 October 2024, announced PFS results.
- In May 2025, received environmental authorisation, applied for mining licence. Lesson learnt – it would have been better to separate applications for water use licence and waste management (application was split). It was very time-consuming dealing with DMPR, DWS and DFFE. Identified a shortcoming in legislation on practicalities between prospecting right to mining right – it is unclear what drilling can continue to be done post PL. No resource drilling is allowed but metallurgical and geotechnical drilling is allowed.
- In June 2025, raised AUS$8 million + AUS$ 20 million in October 2025 with share placement on ASX, and with improved PGM prices, completed infill drilling programme and performed optimised PFS.
- In September 2025, expected the mining right. Finalised scope for definitive feasibility study (DFS) with target final investment decision (FID) in Q2 2026. Considered debt finance of US$160 million and streaming for future funding.
- Conversations with high-net-worth individuals and risk capital were much easier in Australia - in South Africa it is virtually a non-starter.

Stumbling blocks:

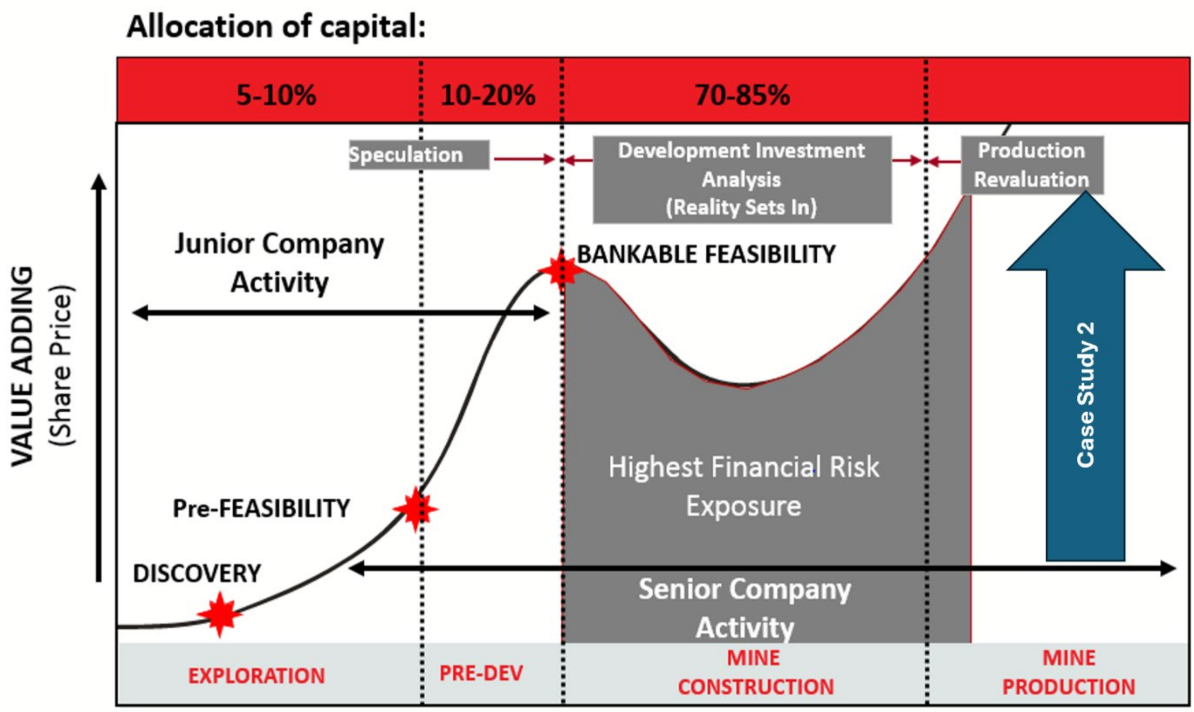
- US investors are uncertain about investment in South Africa, during roadshow in 2025 they said: "How do we handle South Africa – we don't know".
- Bureaucracy in dealing with various government departments adds additional cost
- Criminal syndicates a huge threat, SAPS ineffective.
- Ambiguity in legislation leads to misinterpretation (or flexible interpretation), used to bully junior miners. Legal costs for handling these ambiguities are astronomical and require Senior Council opinions for every instance.
- The DMPR does not honour their own set timelines.
- DMPR regional offices have piles of disorganised files in their offices.
- Delays in implementation of the Mining Cadastre will have a direct impact on when international investors return to South Africa.

Duration, costs and manpower from PL to DFS and FID:

- 2005 – 2026: 21 years

- From exploration to pre-construction US$25 million (R440 million)
- Around US$8 million (R140 million) operating cost per annum
- Peak funding required for project US$279 million (R4.9 billion)
- Employees – only six permanent, with large team of contractors, consultants and specialists.

8.2 Case study 2: Small-scale aggregate quarry



Case In Brief

- Aggregate quarry located in Gauteng.
- Holder of new order mining right.
- More than 30 years in operation and supplying aggregates for construction projects in a 50 km radius of quarry.
- Considered to be a medium-sized quarry producing 350,000 tonnes aggregate per annum.
- Employs 15 full time staff and 28 contracted staff.
- Drilling, blasting, loading and hauling is contracted out, while plant operations are manned by full time employees.
- Quarry struggles at 2% net profit margin because of rising energy and labour costs as well as significant increases in compliance costs

- New mandatory code of practice (August 2024 requirement by the Chief Inspector of Mines) for blasting near communities has added has introduced an additional cost of R600,000 per annum or R1.71 per tonne produced
- Level 9 collision avoidance systems were introduced in December 2022 under the Mine Health and Safety Act of 1996 (MHSA), adding a capital installation cost of R4.7 million to the quarry. This added R1.67 per tonne produced (eight-year depreciation)
- Social and labour costs and time and effort to manage relations have escalated in the past 10 years under increased pressure from local communities, expecting more than committed in the quarry's social and labour plan (SLP). This added around 3% to the cost of operations, R3.60 per tonne produced.
- Legal and consulting costs have also increased because of additional legislation and compliance requirements in the past decade i.e., Promotion of Access to Information Act, tax disputes with SARS, contracts for community projects, training and advice on new DMPR requirements, and health and safety requirements. Twenty years ago, the inspector of mines would visit twice per annum, now it is twice a month. This has added R7.40 per tonne produced.
- Total cost of compliance has added R14.38 per tonne produced, or 12% to the cost of production.

- Owner considering closing the operation.
- Small-scale miners cannot be held to the same standard as other mines in South Africa. It is not sustainable. The following table illustrates the difference in operating margins between a medium-sized quarry and a gold mine in South Africa.

	Quarry	Gold mine
Revenue per tonne ore	R153	R6,363 @ 3g/t
C1 operating cost per tonne	R123	R2,449
Operating profit margin per tonne	**R30**	**R3,914**
Cost of compliance	R26.94	
Profit per tonne after compliance	**R3.06 (2%)**	

- A profit margin of 2% is unacceptable, considering that one can earn between 4.5% and 5.75% interest from a cheque account at a commercial bank in South Africa.
- The construction industry in South Africa as proxy for South Africa's economy shows a decline:
  - Cement production has dropped by 45% between 2008 and 2025. Annually 1.5 million tonnes of cement is dumped in South Africa by foreign producers. They do not adhere to South African compliance costs.
  - The playing field is not level. Owners of borrow pits do not comply with safe blasting zones, SLPs, Codes of Good Practice as enforced on quarries. The inspector does not shut their operations every other month.
  - Gauteng is on a path of de-industrialisation.

9. CONCLUSIONS

It is the conclusion of this research report that:

- JEMCs contributed **R122.8 billion (11.3%)** in revenue out of the total mining industry revenue of R1.083 trillion for the period January to December 2024.
- JEMCs put a large portion of R122.2 billion back into the South African economy in terms of expenses.
- JEMCs held many of the estimated **5,100 PLs** in South Africa and does not generate revenue.
- JEMCs held an estimated **77% of the 2,065 mining permits and mining licences** issued by the DMPR in 2024.
- JEMCs as a subsector of the mining industry in South Africa showed a loss of R0.09 billion for 2024.
- JEMCs provided jobs to **58,496 people** directly in 2024 and potentially generated 409,472 more jobs in the South African economy when applying a job multiplier of seven.
- JEMCs added mining jobs while majors shed jobs between 2018 and 2024.
- Exploration funding that was traditionally invested by majors exited the South African mining industry because of shareholder risk aversion related to security of tenure, and general mining regulatory uncertainty in South Africa.
- The R400 million MEF from the DMPR is a very small but important start for JEMCs and one of very few options to fund exploration in South Africa. International investment is not forthcoming.
- Targets set by DMPR Minister Gwede Mantashe have been missed:
    - The 2022 Mining Exploration Strategy set a target of attracting 5% or US$900 million back to South Africa by 2025. DMPR estimates that less than 1% will be achieved in 2025.
    - The goal set in February 2025 to have a functional mining cadastre by February 2025 was missed and the deadline was extended twice in 2025.
    - JEMCs cited the cost of compliance to DMPR requirements as untenable.
    - South Africa is reliant on government seeing the strategic value of a JEM subsector, to do exploration that will secure the future of mining in South Africa. This is key for job creation on a large scale, that will strengthen the tax base in the country.

10. THE RESEARCHER

Dr. Hermanus Jacobus (Manie) Kriel graduated as a mining engineer from the University of Pretoria in 1994, with an Anglo Gold scholarship. In 1995 Gencor headhunted him to join their Samancor operations where he progressed to the level of Production Manager. In 1998 Samancor entered into a joint venture agreement with the German company Quarzwerke Gmbh. Dr. Kriel moved to Germany for more than a year where he received training in project management to ultimately commission a new processing plant for the joint venture partners in Delmas, South Africa in 2000. After successful commissioning of the plant Dr. Kriel broadened his horizons and joined Trans Hex in the Richtersveld where he headed their exploration efforts at Reuning for a year. He was then transferred to Trans Hex's flagship operation at Baken Mine where he advanced to the level of Regional Manager of the Lower Orange River Operations, which included three mining towns, four mining operations and seven processing plants. During this period Mr. Kriel completed a Master of Business Leadership degree at the University of South Africa through distance learning.

By 2006 Dr. Kriel had achieved all that the goals he set for his operational production career, and he decided to move to Johannesburg where he started a consulting career. In 2008 he founded VBKOM (Pty) Ltd, a consultancy providing technical and economical services. He is currently the group CEO of VBKOM Holdings (Pty) Ltd. In 2017 Dr. Kriel enrolled as a PhD student at the University of Pretoria, where he researches the Junior Mining Sector on a part time basis. He published his PhD in 2023.

Dr. Kriel holds a Mine Managers Certificate since June 1996. He is a fellow of both SAIMM and IQSA. Dr. Kriel is a registered Professional Engineer with ECSA – Pr. Eng 20080140. Dr. Kriel is a Competent Person in terms of SAMREC and JORC Reserve Signoffs, and a Qualified Person to sign off Reserves on the Canadian NI43-101 code, all which he has done regularly during the past 20 years as a consultant.

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