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**Effective Turnaround Strategies in the Mining and Metals
Industry in South Africa**

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Abstract

The subject of turnarounds is a notable one in the field of strategic management. Decades of literature reflect the history of this subject. However, limited research can be found on turnaround strategies that are specific to an industry. This paper studies the topic of turnarounds within the Mining and Metals sector in South Africa, a sector that contributes significantly to the country's GDP. Three successful turnaround cases within the sector are explored in detail. The key factors that contributed to their unique turnaround scenarios, including internal and external factors, are discussed. The commonalities in the turnaround strategies implemented by these firms are utilised to develop a benchmark turnaround approach for the Mining and Metals sector. This paper contributes to academia through the explored literature, and to industry through the studied cases.

Keywords

Turnaround strategy • Mining and Metals • Altman z-score

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List of Acronyms

AIRs	Annual Integrated Reports
CoS	Cost of Sales
EBIT	Earnings Before Interest and Tax
EBITDA	Earnings Before Interest, Tax, Depreciation and Amortisation
GPM	Gross Profit Margin
JSE	Johannesburg Stock Exchange
LoM	Life of Mine
MVE	Market Value of Equity
NDTE	Net debt-to-EBITDA
PGMs	Platinum Group Metals (inclusive of platinum, palladium, rhodium, ruthenium, osmium and iridium (Minerals Council South Africa, 2024a).
ROCE	Return On Capital Employed
SARB	South African Reserve Bank
y-o-y	year-on-year

Chapter 1 - Introduction

1.1 Statement of Purpose

The purpose of this research is to delineate the effective turnaround strategies in Mining and Metals firms in South Africa.

1.2 Background of the Study

The Mining and Metals sector is the pillar of the South African economy. South Africa boasts the world's largest mineral reserves of PGMs (91.3%), Manganese (40%) and Chromium (35%), second largest Zirconium minerals (8.7%) reserves and third largest Gold (9.6%) and Fluorspar (15.7%) reserves in the world (Minerals Council South Africa, 2023). However, the sectors' GDP contribution has decreased by 1.1% from 2022 to 2023 (Minerals Council South Africa, 2024a). Furthermore, of the 29 JSE-listed Mining and Metals firms: 14 reported net losses in 2023, 9 reported net losses for the past 2-10 consecutive years, and 2 are currently undergoing business rescue.

These performance challenges are attributed to high input costs (electricity and labour), power supply insecurity, logistical constraints (rail reliability), volatile commodity prices, fluctuant exchange rates, hostile political climate and lack of growth inducing policies (Minerals Council South Africa, 2024a).

Therefore, there is need to provide insight on how these firms can navigate these challenges and turnaround their performance. There is necessity to examine in great detail, the patterns and underlying mechanisms of effective turnaround responses (Wenzel et al., 2020). Specifically, to extensively examine the internal and external enablers of these effective turnaround strategies (Wenzel et al., 2020). This research accomplishes this through drawing lessons from three Mining and Metals firms in South Africa that successfully implemented turnaround strategies.

1.3 Problem Statement

The Mining and Metals sector in South Africa contributes significantly to the country's GDP. However, in the past year, the sector's GDP contribution declined by 1.1%. The sector's poor performance can be attributed to various internal and external pressures. This study aims to identify the key causes of performance decline in the sector and to further delineate effective turnaround strategies to counter these influences.

1.4 Research Questions

- I. What are the key causes of performance declines in the Mining and Metals sector in South Africa?
- II. What are the effective turnaround strategies used by the successful firms in the Mining and Metals sector to reverse performance declines?

1.5 Rationale of the Study (Research Gap)

This research is significant to both academia and industry. This research contributes to turnaround literature by providing extensive detail on industry and firm-specific causes of decline. This research further bridges the gap of limited studies on sector-specific turnaround strategies by studying this concept within the Mining and Metals sector. In practise, this research equips strained Mining and Metals firms with other viable turnaround strategies aside from the default retrenchment strategy.

1.6 Delimitations of the Study

This study is limited to the Mining and Metals sector in the South African context. Furthermore, only JSE-listed Mining and Metals firms are studied for their performance during the 2008-2023 period.

1.7 Assumptions

Turnaround strategies are specific (Gotteiner et al., 2019). Therefore, it is assumed that a standard approach to turnarounds for distressed firms in the Mining and Metals sector, can be formulated by studying successful turnaround firms in the same sector.

1.8 Chapter Outline

This paper commences with outlining the background and context of the study. Chapter 2 reviews literature on the factors that cause decline and common turnaround strategies implemented in the sector. The frameworks supporting this research are discussed and the conceptual framework presented. Chapter 3 details the methodology approach (qualitative case study research using secondary data) with details on proposed data collection and analysis methods. Chapter 4 analyses the findings of three Mining and Metals cases that exhibited turnaround behaviour. It explores the causes of poor performance and the unique strategies implemented by each firm to turn around performance. This paper is concluded with a summary of the research findings, closing commentary and future research in Chapter 5.

Chapter 2 – Literature Review

2.1 Introduction

The Mining and Metals sector contributes 6.2% to the GDP (R425.6bn) and employs 477 000 people (Minerals Council South Africa, 2024a). Alarming, many firms in the sector have experienced performance decline in the past 16 years. Factors including high operating costs and fluctuating commodity prices have led to crumbling profits and low share prices (Minerals Council South Africa, 2024a).

Scholars concur that turnaround situations are occurring more frequently, with more firms facing bankruptcy or significant market loss, and at most times, experiencing minimal recovery (Jeyasingh, 2023; Wenzel et al., 2020). To survive, many firms in the sector have resorted to the retrenchment turnaround strategy.

Figure 1 displays the Employment Trend in Mining and Metals Sector in South Africa. Large-scale retrenchments occurred during the 2012-2016 period, with the lowest employment rates recorded in 2018-2020.

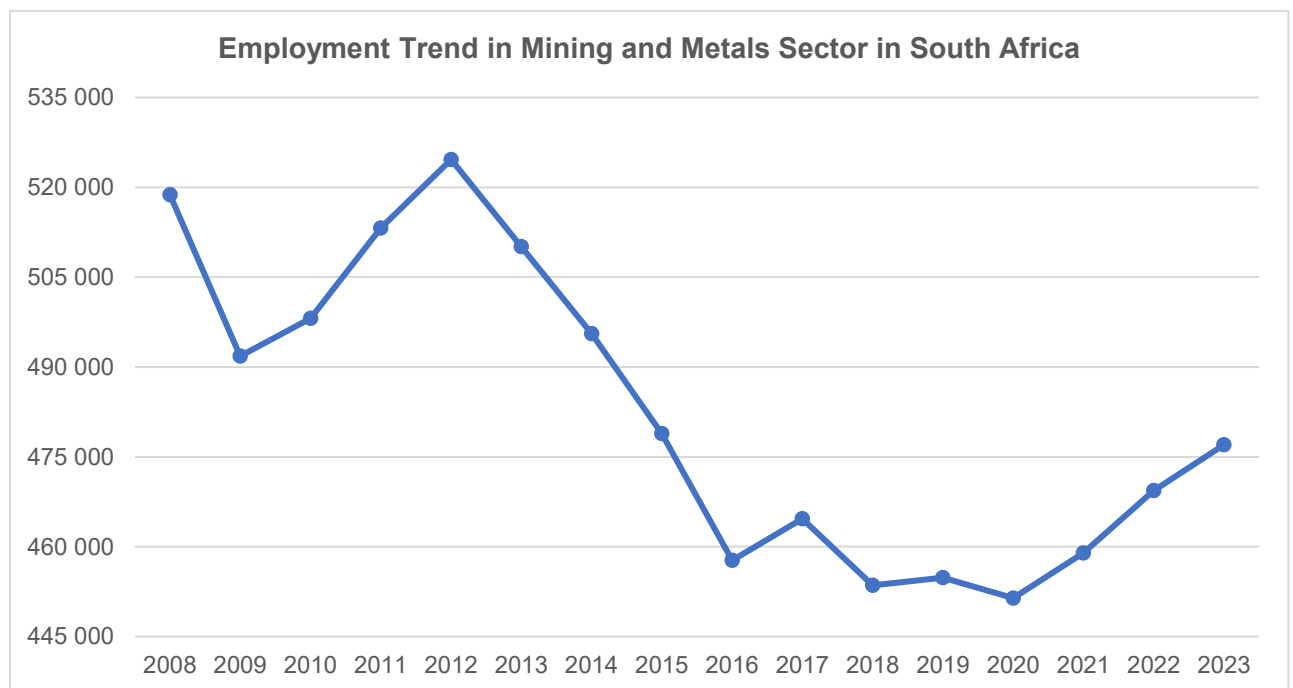


Figure 1: *Employment levels in the Mining and Metals sector in the period 2008-2023*

(Adapted from Minerals Council South Africa (2018), (2019), (2020), (2021), (2023) and (2024a))

The effects of strategies such as retrenchments are detrimental to all stakeholders involved, including employees, shareholders, suppliers, customers, and the local communities (Ghazzawi, 2018; Jeyasingh, 2023). For these reasons, the study of

turnaround strategies is not only relevant, but important in equipping industry leaders to correctly diagnose root causes and respond strategically (Wenzel et al., 2020).

2.2 Background Discussion

Turnaround strategy research is over four decades rich (Barker & Duhaime, 1997; O’Kane & Cunningham, 2014; Wenzel et al., 2020). This research was pioneered by Schendel and Hofer in the late 1970’s (Hofer, 1980; Hofer & Schendel, 1978; Schendel et al., 1976).

2.2.1 Definition of Turnaround Strategy

Barker et al. (2022) and Thain & Goldthorpe (1989) define a “turnaround” or “turnaround strategy” as a complex process that leads firms out of situations threatening firm existence, to years of profitability and sustainable success. Balgobin & Pandit (2001) define it as the recovery of a firm’s financial performance following a survival-threatening decline. Practitioners refer to a turnaround as a bankruptcy avoidance process (Barker et al., 2022). Therefore, turnarounds are characterised by their ability to reverse the performance decline, cease existence threat, and achieve sustainable profitability (Ghazzawi, 2018; Jeyasingh, 2023).

For turnaround strategies to be effective, core causes of decline need to be addressed in the strategies (Ghazzawi, 2018; Jeyasingh, 2023). Top management are critical role players in studying these causes and implementing appropriate turnaround strategies (Ghazzawi, 2018; Thain & Goldthorpe, 1989).

2.3 Key Causes of Firm Performance Decline

The causes of performance decline are classified into internal and external factors (Ghazzawi, 2018; Jeyasingh, 2023). Internal factors are described as “firm-specific” factors and external factors as “industry-specific” factors (Barker & Duhaime, 1997; Ghazzawi, 2018). Whilst both factors contribute to performance decline, each results in a different interpretation of the firm’s strategic health (Barker & Duhaime, 1997; Jeyasingh, 2023).

2.3.1 Firm-Specific Factors

Decline in performance due to firm-specific factors is characterised by performance that is below the industry average (Balioukas et al., 2023; Barker & Duhaime, 1997). This indicates that a firm has a weak strategic position because its performance

declines despite the growth in the industry (Barker & Duhaime, 1997; Santana et al., 2019). A firm in this position requires significant strategy reorientation.

Advantageously, firm-specific factors are within management control (Balioukas et al., 2023; Ghazzawi, 2018). These factors can be attributed to:

A. Poor Management

Poor leadership is one of the principal causes of firm decline (Balioukas et al., 2023; Barker & Duhaime, 1997; Ghazzawi, 2018). This occurs due to deliberate poor decision-making or omission of important decision-making (Balgobin & Pandit, 2001; Ghazzawi, 2018). Lack of market intelligence and early detection of changing conditions by top management leads to tactless decisions and prohibits timely implementation of corrective strategic actions (Grinyer et al., 1990; Jeyasingh, 2023).

A strong correlation exists between poor management and each of the firm-specific causes of decline (Ghazzawi, 2018; Grinyer et al., 1990). Hence, in 73% of the research cases studied, performance decline was a consequence of an inadequate chief executive (Balioukas et al., 2023; Slatter, 1984).

Ineffective communication by executives to lower management levels and employees exacerbates performance decline through disabling the creation of a shared vision. This often leads to division and sabotage of the strategy by lower management levels and employees (Jeyasingh, 2023; Rico et al., 2021).

B. Inadequate Financial Governance

Poor financial performance is a common cause of firm performance decline (Osievskyy et al., 2021).

i) Inadequate financial information controls

Poor financial systems in themselves do not lead to firm decline. However, deficiencies through recording incorrect, incomplete and delayed information leads to poor information quality and control (Balioukas et al., 2023; Thain & Goldthorpe, 1989). Poor quality information regrettably informs cash flow forecasts, working capital requirements and budgetary control (Grinyer et al., 1990; Kuttner et al., 2022). Hence, managers make misinformed decisions and acquire excessive leverage that exacerbates turnarounds.

iii) Overexposure to rising interest rates

Firms excessively expose themselves to rising interest rates through incurring debt to finance operations or an acquisition during a high interest rate environment (Kirti, 2020; Thain & Goldthorpe, 1989). Firms do this due to good opportunities that arise during imperfect conditions. Some firms deliberately acquire debt during high interest rates periods in hopes of capitalising on anticipated interest rate drops (Kirti, 2020; Thain & Goldthorpe, 1989). This opportunity may diminish if rates increase further and result in overexposure to rising interest rates which reduces net earnings significantly.

C. High Cost Structure

There are three main contributors to high cost structures in Mining and Metals firms: operating inefficiencies, high overheads and diseconomies of scale (Balioukas et al., 2023; Slatter, 1984). Firms with a cost disadvantage possess poor plant control, complex beneficiation processes, low quality labour, low grade mineral reserves, unfavourable operating locations reducing distribution efficiency and inability to capitalise on economies of scale due to small market share (Jeyasingh, 2023; Minerals Council South Africa, 2023). Such firms survive on low margins, low profitability and low growth as they are unable to compete with the infrastructure development capital of their competitors (Minerals Council South Africa, 2023; Thain & Goldthorpe, 1989).

D. Failed Major Projects

Major projects of extraordinary nature and scope are most at risk of failure (Bhattacharyya & Malik, 2019). Common examples are new exploration developments, construction and production projects (Christianson, 2023). Project failures root back to the planning stage where potential mineral deposits value, sales and margins are overstated, exploration and production costs understated, and potential markets misinterpreted (Jeyasingh, 2023; Thain & Goldthorpe, 1989). Furthermore, insufficient project control, inadequate exploration expertise and strict barriers to market entry (exploration permits etc.) also contribute to project failure (Balioukas et al., 2023; Christianson, 2023). With acquisitions, poor post-acquisition management and lack of integration to the existing company group, is the main cause of failure (Balioukas et al., 2023). Expectedly, these large project failures result in massive losses that threaten firm survival.

2.3.2 Industry-Specific Factors

Industry-specific factors refer to factors that influence the growth and contraction of the industry (Barker & Duhaime, 1997; Jeyasingh, 2023). Firms that successfully navigate a turnaround during an industry contraction indicate a healthy strategic position (Barker & Duhaime, 1997; Jeyasingh, 2023). These firms are likely to execute efficiency improvement projects that capitalise on their strong position to survive the economic conditions (Barker & Duhaime, 1997; Jeyasingh, 2023).

Industry-specific factors include:

A. Decrease in Demand

The decrease in demand is the most influential external factor (Balgobin & Pandit, 2001; Balioukas et al., 2023). Decrease in demand refers to the economic cycle downturn (Balioukas et al., 2023). It also refers to the change in patterns of demands influenced by evolving demographics, lifestyles and technology (Minerals Council South Africa, 2024a). Changes in lifestyle and technology have more impact on demand patterns than changes in demographics.

B. Increase in Competition

Sources of rivalry in an industry include competitors selling the same product, competitors selling a substitute product and new entrants (Jeyasingh, 2023; Johnson & Whittington, 2019). The risk of competition from substitutions is low in the Mining and Metals sector (Scope Group, 2023). The threat of new entrants is also low due to high barriers to entry into the sector. These barriers include high capital investment, low production capacity complex supply chain and a strict regulatory environment (Johnson & Whittington, 2019; Skillings Mining Review, 2023). However, competition from local firms and low-cost overseas producers selling the same commodities is well-established (Thain & Goldthorpe, 1989; Torreggiani & Andreoni, 2023).

The application of the Porter's Five Competitive Forces Framework to the Mining and Metals sector determined that the rivalrous competition within the sector is due to: (1) numerous players in the industry (29 local firms and imports), (2) low growth rates, (3) high exit barriers, and (4) low differentiation due to the nature of commodity markets (Johnson & Whittington, 2019). Consequently, competition is higher amongst well-established firms. As such, local firms are required to strategically position themselves to compete internationally (Torreggiani & Andreoni, 2023).

C. Increase in Input Costs & Devaluing of Minerals

Production and labour costs account for majority of input costs in Mining and Metals firms (Minerals Council South Africa, 2024b). Increasing utility costs (power and water) and the high calibre labour required increases input costs significantly (Minerals Council South Africa, 2024b). The high input costs environment is exacerbated by the devaluing of mineral resources in the international markets. Lower mineral prices reduce revenue potential. As a result, firms survive on slim margins.

The value of minerals is determined by the global inflation and foreign exchange rates (Minerals Council South Africa, 2024a). Since over 70% of minerals produced in South Africa are exported, the sector is vulnerable to the devaluing of minerals (Minerals Council South Africa, 2024a).

2.3.3 Proposition 1

“If a Mining and Metals firm’s decline rate is worse than the industry average, the causes of decline are firm-specific. If a firm’s decline rate is the same or better than industry average, the causes of decline are industry-specific.”

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2.4 Types of Turnaround Strategies

Uncertainty is inherent in the turnaround process due to difficulty predicting strategy effectiveness in different situations (Alvarez et al., 2018; Wenzel et al., 2020). There are no standard methods or tools for turning around firms (Balioukas et al., 2023; Gopal, 1991). However, unless firms take corrective actions, they will fail (Gotteiner et al., 2019; Schweizer & Nienhaus, 2017).

Turnaround strategies are essential to restore a firm’s financial stability. The effectiveness of these strategies can restore performance to levels exceeding pre-turnaround (Barker et al., 2022). They can restore market share and improve efficiency within the organisation (Balioukas et al., 2023; Rico et al., 2021).

Previously, turnarounds have been primarily associated with retrenchments (Barbero et al., 2020; Gotteiner et al., 2019; O’Kane & Cunningham, 2014). However, firms can respond to crises in various ways, including retrenchments, persevering, innovating, exits and applying integrative approaches.

2.4.1 Retrenchment

Retrenchment is a broadly applied turnaround strategy in the Mining and Metals sector (Figure 1) (Jeyasingh, 2023; Wenzel et al., 2020). Retrenchments refer to asset disinvestment and workforce reduction to reduce scope, reduce cost, increase efficiency and restore profitability (Barker et al., 2022; O’Kane & Cunningham, 2014; Robbins & Pearce, 1992; Wenzel et al., 2020). However, this strategy can lead to varied results to the turnaround process (Balioukas et al., 2023).

Some scholars consider retrenchments an essential part of business turnarounds due to their impact in streamlining operations, freeing up cash and improving transparency (Balioukas et al., 2023; Rico et al., 2021; Wenzel et al., 2020). Compared to firms that fail, firms that successfully implement retrenchments are able to reduce five of their core expenses; labour, receivables, inventory, production and overhead costs (Barker & Duhaime, 1997; Jeyasingh, 2023).

Other scholars argue that retrenchments exacerbate performance decline (Bruton et al., 2003; Jeyasingh, 2023; Wenzel et al., 2020). This is due to the disturbance in the operational synergy that occurs during downsizing (de Figueiredo Jr. et al., 2019). Retrenchments restrict benefits in spreading costs across business units through economies of scale (de Figueiredo Jr. et al., 2019; Singhal, 2020). Moreover, retrenchments lead to reduced creativity, innovation and organisational commitment required for long-term recovery (O’Kane & Cunningham, 2014; Pazarskis et al., 2018). Barker & Duhaime (1997) and Santana et al. (2019) suggest that retrenchments should be limited as a strategic response, to industry-induced decline.

Whilst *retrenchments may be required or even inevitable in the short-term*, they are unsustainable long-term (Rico et al., 2021; Wenzel et al., 2020). This is due to loss of critical business assets and capabilities long-term (Rico et al., 2021; Wenzel et al., 2020). Consequently, retrenchments may be the first but not the only strategic response during turnaround situations.

2.4.2 Persevering

Compared to retrenchment, persevering considers maintaining business operations as is amid crisis (Wenzel et al., 2020). Persevering preserves the status quo whilst attempting to alleviate the effects of underperformance (Cuervo-Cazurra et al., 2020).

Persevering is considered an effective turnaround strategy, especially as daily conditions change during crisis (Puumalainen et al., 2023). Non-persevering firms tend to underperform compared to persevering firms (Stieglitz et al., 2016; Wenzel et al., 2020). These firms are at higher risk of failure due to performance instability introduced by frequent strategic changes (Chakrabarti, 2015; Wenzel et al., 2020). Furthermore, persevering protects valuable firm resources and capabilities that can be leveraged during recovery, instead of risking them during strategy renewal (Wenzel et al., 2020).

For firms to persevere successfully, managers are required to adjust their decision-making style (Deep, 2023; Ngah-Kiing Lim et al., 2009). Debt averse managers are required to adapt their preferences and leverage debt financing to preserve business strategy (Wenzel et al., 2020). Slack resources are required during this process, however availability of resources diminishes overtime (Jeyasingh, 2023). Thus, *persevering is considered an effective turnaround strategy in the medium-term* but unsustainable and potentially survival-threatening long-term (Wenzel et al., 2020).

2.4.3 Innovating

Innovating refers to engaging in strategic renewal during a turnaround situation (Ghazzawi, 2018; Singhal, 2020; Wenzel et al., 2020). Strategic renewal is necessary in cases of firm-specific causes of decline, as retrenchment and persevering strategies do not resolve weak strategic positioning (Barker et al., 2022; Jeyasingh, 2023). Innovating aims to align a firm's resources to changing market conditions and improve a firm's market positioning through strategic renewal (Ghazzawi, 2018). Therefore, *innovating ensures a firm's long-term sustainability* (Barker et al., 2022).

Although crisis is devastating on performance, it provides opportunity for strategic renewal due to relaxed constraints around decision-making (Wenzel et al., 2020). Uncertain times are opportune for widening business scope through exploring alternative products, testing new markets and exploring new ways of operating (Ghazzawi, 2018; Jeyasingh, 2023; Wenzel et al., 2020).

To successfully renew strategy, complementary capacity is required (Wenzel et al., 2020). Unless firms are able to exploit existing assets to seize opportunity for long-term growth, they will require new capacity (Barker et al., 2022; Ghazzawi, 2018; Jeyasingh, 2023; Wenzel et al., 2020). Hence, acquisitions and strategic alliances

have been proven to be directly related to performance recovery during turnarounds (Jeyasingh, 2023; Wan & Yiu, 2009).

Due to cash necessity during acquisitions, slack resources utilised during the “wait and see” persevering strategy, are instead invested in acquiring additional capacity to source alternative revenue streams (Singhal, 2020; Wenzel et al., 2020). To manage these limited resources productively, strict governance structures are required during strategy renewal (Jeyasingh, 2023; Wenzel et al., 2020).

2.4.4 Exit

Exits refer to the discontinuation of operations during turnaround situations (Wenzel et al., 2020). Discontinuing operations may be inevitable, particularly when no strategy is productive in reversing performance (Wenzel et al., 2020). Contrary to bankruptcy, exits are intentional and more effective strategic response (Singhal, 2020).

Vulnerability factors to consider before exits include the level of immediate exposure to adversity, capacity to deal with adversity and risk of loss of irreplaceable assets and capabilities (Singhal, 2020; Wenzel et al., 2020). Continuing operations amid high exposure to disaster and consistent unprofitability may lead to extreme losses (Singhal, 2020; Wenzel et al., 2020). However, when firms operate in countries with developed and effective state support, firms are less likely to exit (Wenzel et al., 2020).

Although firms that exit may be left with the stigma of a “failed business”, exits do not necessarily imply the end of the road for businesses (Singhal, 2020; Xia et al., 2016). Exits should be considered effective strategies and not last resorts as they can pave the path to strategic renewal and avail tied up assets and resources to form and execute new strategies (Balioukas et al., 2023; Carnahan, 2017; Singhal, 2020).

2.4.5 Integrative Approach

The above-mentioned turnaround strategies are not unrelated. When managed effectively, they can be complementary (Ghazzawi, 2018; Schmitt & Raisch, 2013). One strategy can be the precursor to another’s success (Wenzel et al., 2020).

Schmitt & Raisch (2013) suggests the essential coupling of retrenchments with strategic renewal to enable effective turnarounds. Rico et al. (2021) concurs that a “retrenchment phase” is mandatory at the onset of turnarounds (short-term) to stabilise business performance prior to managers deciding on a long-term strategic change.

Additionally, strategically strong firms tend to couple retrenchment with persevering strategies through enhancing efficiency while waiting for the economic cycle upturn (Barker & Duhaime, 1997; Wenzel et al., 2020). Therefore, successful firms employ different turnaround strategies during the turnaround process based on the window of opportunity the strategies are most effective in (Puumalainen et al., 2023).

2.4.6 Proposition 2

“A Mining and Metals firm in distress tends to employ an integrated turnaround strategy that is dominated by retrenchments in the short term, persevering during medium-term recovery and innovating in the long-term recovery phase.”

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2.5 Analytical Framework

2.5.1 Theoretical Framework

The first turnaround framework was introduced by Donald Bibeault in 1982 (Bibeault, 1998). Recently, this framework has been reviewed by Balioukas et al. (2023) and Gotteiner et al. (2019). Bibeault's framework is comprised of five turnaround stages as seen in Figure 2.

Stage 1 – Management Change

Due to firm decline being largely attributed to poor management, the replacement of the top management team is the first step to turnarounds (Balioukas et al., 2023; Bibeault, 1998). Management change is essential in bringing new objective leadership and providing the shock therapy required to change organisational culture (Balioukas et al., 2023; Bibeault, 1998).

Change of management is required as CEOs themselves may be part of the problem. A new CEO signifies change, a new culture and a commitment to turning performance around. However, this step of the framework occurs prior to identifying the cause of decline and does not consider the nature of the root issues. Therefore, if firm decline were due to industry-specific factors, this step of the turnaround process would not be required.

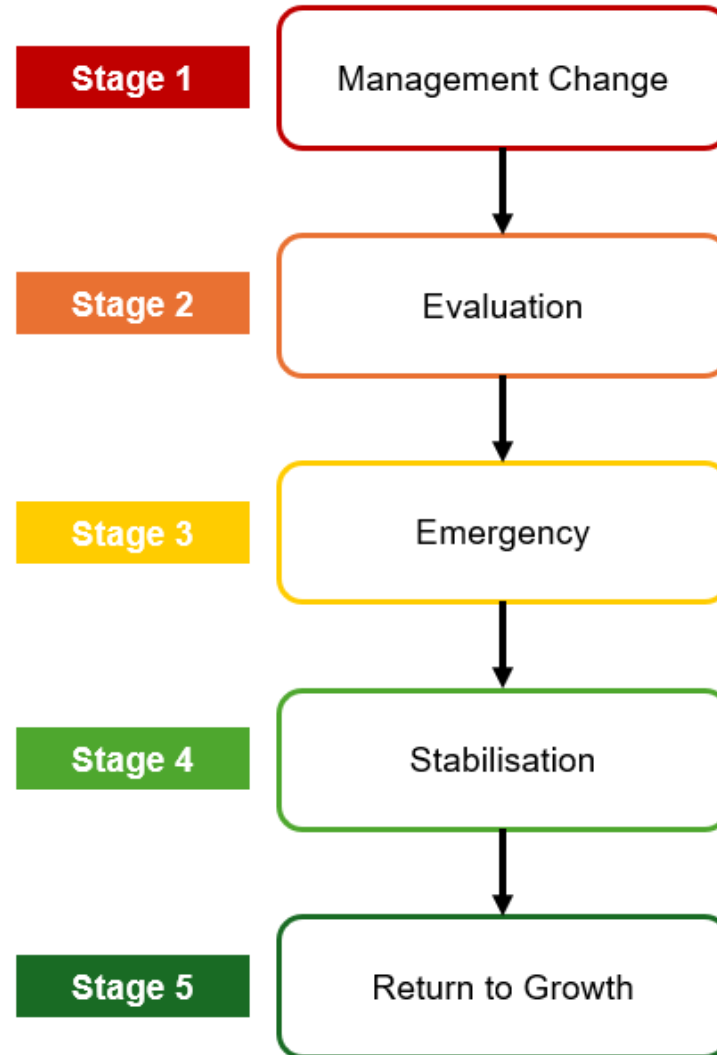


Figure 2: *The Five Stage Turnaround Framework by Donald Bibeault*
(Adapted from Baliuskas et al. (2023), Bibeault (1998) & Gotteiner et al. (2019))

Stage 2 – Evaluation

This stage includes problem identification, evaluation of solutions and communication the action plan (Balioukas et al., 2023; Bibeault, 1998; Gotteiner et al., 2019). To determine a cure, the nature and severity of the illness needs to be understood (Bibeault, 1998). Once understood, viable solutions required for the turnaround plan become apparent (Balioukas et al., 2023; Bibeault, 1998). When solutions have been evaluated, an action plan is drafted detailing measures to retrieve firm performance (Bibeault, 1998). At most, 30 days is required to complete these steps (Bibeault, 1998). Implementation typically occurs within 90 days following management change (Bibeault, 1998). Finally, the action plan is communicated to all stakeholders to obtain buy-in (Balioukas et al., 2023; Bibeault, 1998).

This turnaround stage is critical as the root cause of the decay is exposed and addressed. Without comprehension of the core issues, the turnaround process would be unsuccessful. This step aligns with the first research question, which seeks to determine the key causes of performance decline in the Mining and Metals sector.

Stage 3 – Emergency

The emergency phase aims to “stop the bleeding” and eliminate losses by reversing all negative cash flows (Balioukas et al., 2023; Bibeault, 1998). The focus is on low-hanging fruits to stabilise performance in the short-term (Bibeault, 1998; Gotteiner et al., 2019). Actions taken to stop the bleeding include reducing fixed costs through employee retrenchments, streamlining operations and lending (Balioukas et al., 2023; Bibeault, 1998). This stage is completed when negative cash flows end (Bibeault, 1998; Gotteiner et al., 2019).

This stage implements the retrenchment and persevering turnaround strategies. As illustrated by literature, retrenchments are an inevitable part of turnarounds (Balioukas et al., 2023; Rico et al., 2021; Wenzel et al., 2020). Lending further assists firms to preserve business strategy in the short-term (Wenzel et al., 2020).

Stage 4 – Stabilisation

After cutting losses, the main focus is to improve profitability through investing in core business, improving operational efficiency and divesting from unprofitable business units (Balioukas et al., 2023; Bibeault, 1998). The aim is to build capabilities for medium-term growth while maintaining core business functions (persevering)

(Balioukas et al., 2023; Gotteiner et al., 2019). If efforts to improve profitability fail, management may sell the business to a firm with more capabilities to make profit off it (Bibeault, 1998).

This stage illustrates application of an integrated turnaround strategy including retrenchment, persevering, innovating and exits, as detailed in [2.4](#). It supports literature in that various turnaround strategies can complement each other during recovery. This stage also aligns with the second research questions which seeks to determine effective turnaround strategies in the Mining and Metals sector.

Stage 5 – Return-to-growth

This stage focuses on the long-term profitability and sustainability of the business (Balioukas et al., 2023; Gotteiner et al., 2019). Revenue growth actions include acquisitions, development of new products, penetration into new and existing market segments, improving customer service and thereby increasing market share (Bibeault, 1998; Gotteiner et al., 2019). This turnaround stage aligns with the innovating turnaround strategy as it is focused on strategy renewal.

Overall, Bibeault's turnaround framework aligns with the purpose of this research and the literature reviewed. The framework also supports Proposition 2 in that retrenchments are effective for short-term recovery, persevering in the medium-term and innovating for long-term sustainability.

2.5.2 Conceptual Framework

The variables relating to the problem situation for this study are (a) Decline causes and (b) Turnaround strategies. The *independent variable* is the decline cause, and the *dependent variable* is the turnaround strategy. In congruence with reviewed literature, there is a proportional relationship between the cause of decline and the type of turnaround strategy employed. This implies that, depending on the decline cause, whether firm or industry-specific (*moderating variables*), different strategic responses (*mediating variables*) are pursued by firms in attempt to recover from decline. Firm-specific causes lead to implementation of innovative and/or exit turnaround strategies whilst industry-specific causes lead to retrenchments and/or persevering turnaround strategies (*mediating variables*).

Figure 3 demonstrates the relationship between the research variables:

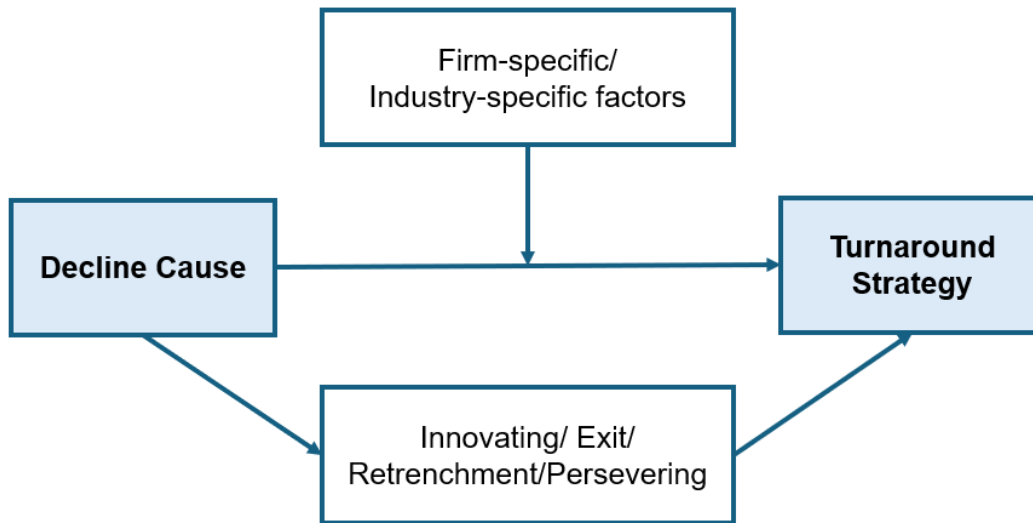


Figure 3: Conceptual Framework - Decline Cause & Turnaround Strategy

2.6 Conclusion of Literature Review

The study of turnaround strategies is pertinent to the Mining and Metals sector in South Africa, as more firms are face internal and external pressures cause detrimental performance declines and erode profitability even towards bankruptcy.

For turnaround strategies to be effective, the root issues must be understood. Literature groups common decline causes into firm-specific and industry-specific factors. Firm-specific factors are attributed to poor management, ineffective financial controls, high cost structures and failed major projects. Industry-specific factors are attributed to low demand, rivalrous competition, high input costs and devaluing of minerals. Accordingly, it is firstly propositioned that *if a Mining and Metals firm's decline rate is worse than industry average, the causes of decline are firm-specific. If decline rate is the same or better than industry average, the causes are industry-specific.*

Mining and Metals firms tend to resort to the labour retrenchment strategy in efforts to recover. However, literature exhibits other viable turnaround strategies including persevering, innovating and exits. The choice of strategy depends on the “window of opportunity” within which the specific strategy is most effective. Accordingly, it was secondly propositioned that *a Mining and Metals firm in distress tends to employ an*

integrated turnaround strategy that is dominated by retrenchments in the short-term, persevering during medium-term recovery and innovating in the long-term.

The theoretical framework guiding this research is *Bibeault's Turnaround Framework*. The five-staged process supports the research questions and literature reviewed. Stage 1 and 2 support the first research question and the literature on key causes of underperformance. Stages 3-5 allude to the implementation of the various turnaround strategies at the appropriate "window of opportunity", as supported by literature. However, it is cautioned that stage 1 applies when the decline cause is firm-specific and not industry-specific.

Lastly, the conceptual framework demonstrating the relationship between the independent variable (decline cause) and the dependent variable (turnaround strategy) was demonstrated in Figure 3.

Chapter 3 – Research Paradigm & Methodology

3.1 Research Approach

This research is a *Qualitative Study*. Qualitative studies permit in-depth investigation of complex phenomena and experiences such as turnaround strategy management of intricate organisations (Cleland, 2017; Khandwalla, 1983; Lanka et al., 2020).

3.2 Choice of Research Paradigm and Methodology

Although this study is a qualitative study, quantitative methods were utilised to analyse the data collected.

Turnaround situations are typically analysed through financial ratios that measure a firm's financial health (Barker et al., 2022). These include profitability and solvency financial ratios, which are quantitative analysis methods (Balioukas et al., 2023). This approach of utilising quantitative analysis within a qualitative study, is supported by turnaround studies conducted by Balioukas et al. (2023), Barker et al. (2022) Osiyevskyy et al. (2021) and Pazarskis et al. (2018).

In this study, the ratios utilised in data analysis include return on capital employed (ROCE), net debt-EBITDA ratio and the Altman's Z-score (Altman & Hotchkiss, 2005; Balioukas et al., 2023; Osiyevskyy et al., 2021; Pazarskis et al., 2018).

3.3 Research Design

This research design is a *multiple case study research*. The use of case studies to investigate complex change processes is well-founded (Costa et al., 2023; Grinyer et al., 1990; O'Kane & Cunningham, 2014). Specifically, Costa et al. (2023) and O'Kane & Cunningham (2014) recommend the use of case studies to understand the nature of turnarounds and critical junctures during turnaround processes.

3.4 Data Collection Methods

A rich mixture of secondary data was used to collect information, including journal articles, firm documentation (annual reports, financial statements and press releases), archival records (Minerals Council South Africa reports), financial and economic databases (Stats SA, SARB and JSE) and news articles including Mining Weekly and Engineering News. Secondary data is easily obtainable and measurable (da Fonseca & da Rocha, 2023).

3.5 Population and Sample

In this study, a “case” refers to information and data relating to a specific firm.

3.5.1 Population

This research focusses on JSE-listed firms in the Mining and Metals sector in South Africa (Balioukas et al., 2023; Miglani et al., 2020; Venusita & Wijayanti, 2019). These firms make up 29 of the 400 JSE-listed firms (JSE, 2024). The population is comprised primarily of publicly listed firms due to the availability and accessibility of publicly published firm records. A specific sector was chosen, as studying multiple sectors would generate samples that are too heterogenous to conclusively study the benefits of turnaround strategies (Malandri et al., 2019; Miglani et al., 2020).

3.5.2 Sample and Sampling Method

The sample is comprised of firms that experienced a turnaround during the 2008-2023 16-year period, as turnaround processes typically span between 2-7 years (Tao et al., 2020). The *Purposive Sampling method* was utilised as it allows sample selection based on specific criteria, making it the most effective for multiple case study research (Burkholder et al., 2019). Significant emphasis was placed on financial data to distinguish firms that have experienced turnarounds from firms temporarily experiencing decline (Barker et al., 2022; Osiyevskyy et al., 2021). Specifically, three financial measures were utilised to determine the turnaround cases: Return on capital employed (ROCE), Net debt-to-EBITDA (NDTE) ratio and Altman’s Z-score.

A. Return on Capital Employed

Return on Capital Employed (ROCE) is an important profitability measure for capital-intensive environments such as the Mining and Metals sector (Michalak, 2018; Scope Group, 2023). Capital is a crucial factor in the sector, as is how well it is utilised (Michalak, 2018). ROCE determines the efficiency of a firm in generating income from the capital invested (Shrotriya, 2019). A healthy ROCE is >9% (Scope Group, 2023).

ROCE is determined by formula 1:

$$ROCE = \frac{EBIT}{Capital\ Employed} \quad (1)$$

where:

EBIT = *Earnings Before Interest and Tax*

Capital Employed = Total Assets – Current Liabilities

EBIT, also called operating income, is utilised as a measure of return. EBIT is the total income a firm generates from its operations before paying interest and tax (Michalak, 2018; Shrotriya, 2019). Capital employed refers to total capital invested in a business (Shrotriya, 2019). It is calculated by deducting current liabilities from total assets, which in essence is the shareholders' equity plus long-term debt (Shrotriya, 2019). Both equity provided by shareholders and long-term debt from debtors, are sources of capital in a business (Aggarwal & Garg, 2022; Shrotriya, 2019).

B. Net debt-to-EBITDA

Net debt-to-EBITDA ratio is an important measure for gauging a firm's leverage in the Mining and Metals sector (Sierpińska-Sawicz et al., 2020). It determines the capacity of a firm to repay its debt by measuring the number of years the firm requires to repay all debts (Sierpińska, 2021; Sierpińska-Sawicz et al., 2020). Most of the debt is derived from loans, bonds issued and rent debt (Sierpińska-Sawicz et al., 2020). A ratio higher than 4 indicates too much leverage in the firm (Sierpińska-Sawicz et al., 2020).

Net debt-to-EBITDA is determined by formula 2:

$$\mathbf{Net\ debt\ to\ EBITDA = \frac{Total\ Liabilities - Cash\ \&\ Cash\ Equivalents}{EBITDA}} \quad (2)$$

where:

EBITDA = Earnings Before Interest, Tax, Depreciation and Amortisation

Net debt is calculated by deducting cash & cash equivalents from total liabilities. Cash equivalents refer to short term investments such as debt securities (Sierpińska-Sawicz et al., 2020). EBITDA is determined by adding the operating income to depreciation and amortisation. By adding depreciation and amortisation, the operating cash flow available for debt repayments is estimated (Sierpińska-Sawicz et al., 2020).

C. Altman's Z-score

The Altman's Z-score is a performance indicator that predicts potential financial distress and bankruptcy of a firm in the short term (Altman & Hotchkiss, 2005; Elia et al., 2021). Pioneered in 1968, the Altman Z-score is a Multiple Discriminant Analysis model that considers five financial ratios in statistically assessing the net liquid assets

(X_1), leverage (X_2), assets productivity (X_3), market value (X_4) and capital turnover of the firm (X_5) (Altman & Hotchkiss, 2005; Elia et al., 2021; Swalih et al., 2021).

The Altman z-score formula developed for publicly traded manufacturing firms is:

$$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5 \quad (3)$$

where:

$$X_1 = \frac{\text{Working Capital}}{\text{Total Assets}}; \text{Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

$$X_2 = \frac{\text{Retained Earnings}}{\text{Total Assets}};$$

$$X_3 = \frac{\text{Earning before Interest and Taxes (EBIT)}}{\text{Total Assets}}$$

$$X_4 = \frac{\text{Market Value of Equity (MVE)}}{\text{Total Liabilities}}; \text{MVE} = \text{Stock Price} \times \text{Total Outstanding Shares}$$

$$X_5 = \frac{\text{Sales}}{\text{Total Assets}}$$

The Z-score is interpreted as follows (Altman & Hotchkiss, 2005; Swalih et al., 2021):

- $Z < 1.81$: "Distress zone" = indicates a firm is distressed and headed for bankruptcy.
- $1.81 < Z < 2.99$: "Grey zone" = no certainty that a firm will not go bankrupt.
- $Z > 2.99$: "Safe zone" = indicates low probability that a firm will go bankrupt.

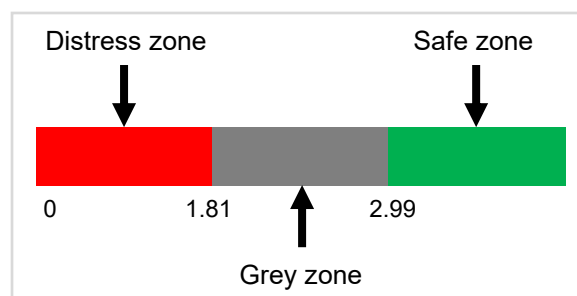


Figure 4: Altman Z-score scale for Publicly Traded Manufacturing Firms
(Adapted from Altman & Hotchkiss (2005) and Swalih et al. (2021))

D. Final Turnaround Criteria

Therefore, the following criteria was utilised to classify the turnaround cases:

- a) 4 years of performance decline followed by 4 years of recovery (Ghazzawi, 2018; O’Kane & Cunningham, 2014; Osiyevskyy et al., 2021)
- b) In 2 of the 4 years of decline:
 - ROCE must be negative (Aggarwal & Garg, 2022; Scope Group, 2023).

- Net debt-to-EBITDA must be higher than 4 or negative (Osiyevskyy et al., 2021).
 - Altman's Z-score must be <1.81 (Swalih et al., 2021).
- c) In 2 of the 4 years of recovery:
- ROCE must be positive (Aggarwal & Garg, 2022; Scope Group, 2023).
 - Net debt-to-EBITDA must be lower than 4 (Osiyevskyy et al., 2021).
 - Altman's Z-score must be >1.81 (Swalih et al., 2021).

Typically, case study research has small sample sizes (Burkholder et al., 2019). In multiple case study research specifically, three to four cases for comparison are recommended for a researcher to study (Burkholder et al., 2019). Therefore, only three cases were sampled and studied in this research report.

3.6 The Research Instrument & Data Collection Procedure

The research data was collected in the following step-by-step method:

Step 1: Created Research Population

A list of South African Mining and Metals firms (29) was extracted from a list of 400 firms on JSE listings (JSE, 2024).

Step 2: Gathered Turnaround Criteria Data

The financial information of the 29 firms was collected for the 2008-2023 16-year period. Specifically, the financial data required to calculate the ROCE, Net debt-to-EBITDA and Altman Z-score of each firm over the years. The main sources of this data were the financial statements published annually by these listed firms:

Step 2.1: Collected ROCE Data

The *EBIT* data was collected from the income statements. The *total assets* and *current liabilities* data was collected from the balance sheets.

Step 2.2: Collected Net debt-to-EBITDA Data

The *EBITDA* data was collected from the income statements. The *cash & cash equivalents* and *total liabilities* from the balance sheets.

Step 2.3: Collected Altman Z-score Data

The *EBIT* and *sales revenue* data was collected from the income statements. The *current assets*, *total assets*, *current liabilities* and *total liabilities* from the balance sheets. The *retained earnings* data was collected from the statements of changes in

equity. Finally, the *share price* and *outstanding shares* data was collected from the financial statement notes on shareholder information.

Step 3: Screened Firms against Turnaround Selection Criteria

Utilising the data collected in step 2, the ROCE, Net debt-to-EBITDA and Altman Z-score of each firm were calculated for the period 2008-2023. The determined values were compared to the turnaround criteria stipulated in [3.4.2 \(D\)](#) above. The firms that met these criteria were sampled.

Step 4: Selected Final Study Sample

The final three cases for this study were selected from the sample.

Step 5: Collected Case Specific Data

Background data was collected on each firm to comprehend the operating context of each firm. To address the research questions of this study, data pertaining to each research question was collected per case.

Step 5.1: Collected Data Required for Determining Causes of Decline

To determine whether the causes of decline were firm- or industry-specific, the following data was collected:

(A) Collected Data to Assess Impact of Industry-specific Factors

Industry growth data was collected from *Minerals Council South Africa Facts & Figures* archival records for the turnaround period of the specific case (Minerals Council South Africa, 2018, 2019, 2020, 2021, 2023, 2024a). The commodity prices and employment trends of the industry were also collected.

The firm growth data (sales volume and revenue) was collected from the annual financial statements issued by the firms (income statements). The firm employment trends were collected from the annual integrated reports (AIRs).

The industry trends were compared to the firm trends to determine the root cause of the turnaround situation per case.

(B) Collected Data to Assess Impact of Firm-specific Factors

Profitability data of the firm was collected to understand the turnaround trajectory. This included detailed data on sales revenue and operation costs, both retrieved from the income statements and notes to the income statements.

Step 5.2: Collected Data Required for Determining Turnaround Strategies Applied

Qualitative data was collected to understand the transition of firm strategy throughout the turnaround process. This information was collected from the AIRs on sections detailing the *Chairman's statement*, the *CEO's review* and the *CFO's review*. Further information was collected from news articles including Mining Weekly and Engineering News. Information from sections including *message from the CEO*, *mining at a glance* and *overview of the South African mining industry* in the Minerals Council South Africa Facts & Figures reports, was also collected for triangulation.

3.7 Data Analysis Strategies and Interpretation

The data analysis constituted *document analysis* and was guided by principles of contextual understanding (Dye, 2023). The strategy for analysing data is *Thematic Analysis* (Bhattacharyya & Malik, 2019; Dye, 2023; Jeyasingh, 2023). In-depth understanding of collected data was enhanced through repetitive studying of the raw data, identifying emerging themes and analysing data through those themes (Bhattacharyya & Malik, 2019; Dye, 2023; Jeyasingh, 2023). The following steps were followed in analysing data thematically:

3.7.1 Read and Collected Raw Information

The secondary data sources of the 29 listed Mining and Metals firms were read thoroughly and data collected.

3.7.2 Organised Data & Conducted Preliminary Analysis to Select Sample Cases

The information collected was organised per firm and listed chronologically (2008 to 2023). Financial ratios were calculated from this data to determine performance levels per annum per firm. Firm performance was rated against the research [turnaround criteria](#) and sample firms were selected. The final three cases were sampled based on longer turnaround tenures.

3.7.3 Categorised Case Data into Themes

Similar to O'Kane & Cunningham (2014) who applied thematic analysis in their turnaround study, case data for this research was classified into the following common themes:

- a) Firm/Industry type.
- b) Main product(s) and export market(s).
- c) Asset footprint.

- d) Original business strategy of firm.
- e) Key contributions to decline (internal and external factors).
- f) Turnaround process triggers or causations (change of leadership/CEO etc.).
- g) Implemented turnaround strategy (detailed actions).
- h) Turnaround strategy type.
- i) Current firm performance.
- j) Current firm strategy.

3.7.4 Analysed and Cross-Examined Case Studies

The problem statement was addressed through the detailed analyses of the cases. The factors that led to distress levels and strategies pursued towards recovery were explored. Furthermore, a cross-case analysis was performed to examine the commonalities and disparities between the respective turnaround processes (Torres et al., 2024). The lessons learned from the cases were summarised for transferability to similar cases in the industry (Burkholder et al., 2019).

3.8 Possible Limitations and Challenges of Study

- Qualitative research using electronic secondary data is voluminous, which made data collection and interpretation time consuming (Lanka et al., 2020). Time limits on collecting data were set, however, the time factor was exacerbated by the multiple cases studied (Burkholder et al., 2019).
- Purposive sampling limits the external validity of research to the subpopulation the sample was chosen from (Andrade, 2021). This limits the contexts to which the study results can be generalised and applied.
- Thematic data analysis can lead to development of incoherent themes due to the flexibility the method provides (Nowell et al., 2017). However, the rigorous literature review on various turnaround frameworks promoted the creation of coherent and consistent themes (Nowell et al., 2017).

3.9 Quality Assurance

The quality, reliability and generalisability of this research is validated in the following ways:

3.9.1 Transferability

To ensure generalisability of this research within the Mining and Metals sector, contextual details of each case were studied and reported including the types of mining

industries each firm competed in (Gotteiner et al., 2019). Furthermore, purposive sampling with specific turnaround criteria was used to select the appropriate case studies (Burkholder et al., 2019). This ensured that the cases studied were true turnaround cases that can be utilised to form a general approach to turnarounds in the sector.

3.9.2 Credibility

The turnaround theory in this research was triangulated through extensive turnaround literature on different theories and practical turnaround applications that corroborate the fundamental turnaround process.

The sources of data used in this research are credible sources. They include publicly published annual reports and financial statements of listed firms, which are audited documents and are considered accurate.

3.9.3 Dependability

The research methodology followed in this paper was triangulated with well-founded turnaround research methods (Balioukas et al., 2023; Bibeault, 1998; Gopal, 1991; Gotteiner et al., 2019; Thain & Goldthorpe, 1989; Wenzel et al., 2020).

3.10 Ethical Considerations

To ensure that this research is conducted ethically:

- ✓ authors of previous research studied were fully referenced.
- ✓ honesty was upheld in all aspects of conducting this research.
- ✓ no data was created, only analysed and reported on.
- ✓ no segment of society was harmed through this research.
- ✓ this research is a “no risk” category project that utilises secondary, documented and archival data only.
- ✓ this research utilised publicly published information and did not require permission from any stakeholders.
- ✓ names of firms subject to this research were kept anonymous or participating firms were informed that anonymity is not guaranteed.

3.11 Proposed Schedule and Timelines

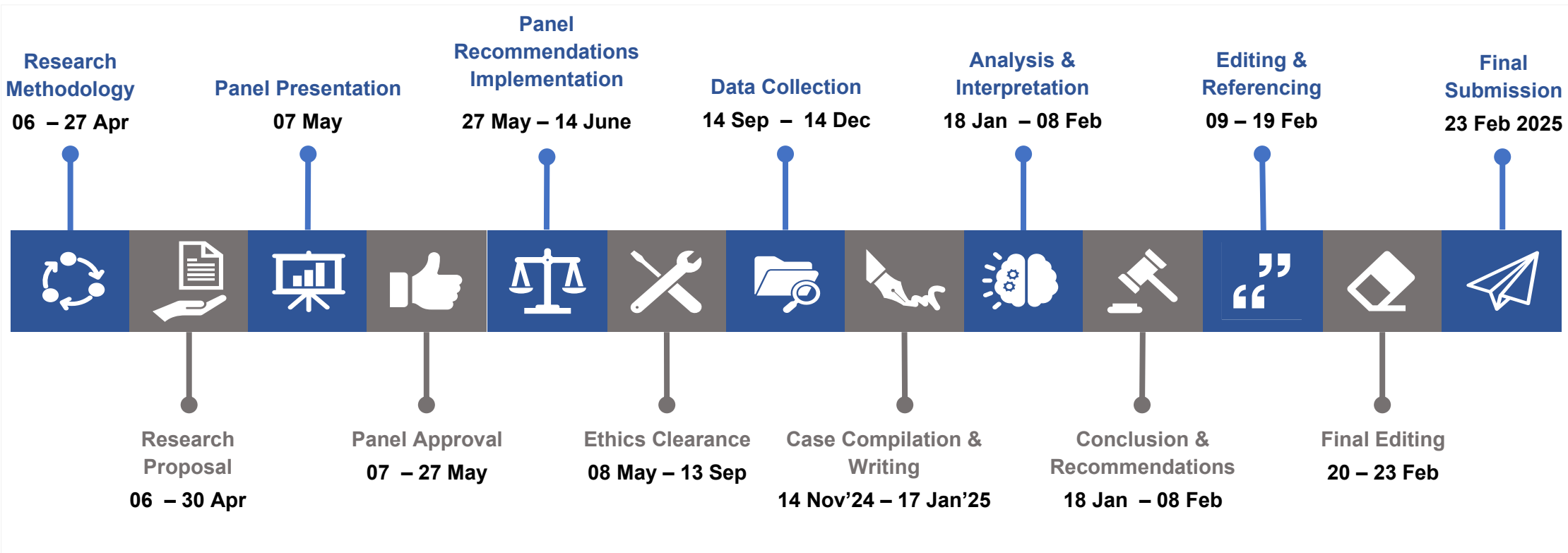


Figure 5: *Research Project Timelines*

Note: timeline starts 06 April 2024 and ends 23 February 2025.

Chapter 4 – Research Findings & Discussions

4.1 Overall Research Findings – Case Studies

The methodology outlined in 3.6 was followed. Of the 29 firms studied, 3 firms were listed later than 2017 and did not have sufficient data to study. Of the remaining 26 firms, the following 3 firms in Table 1 exhibited turnaround behaviour for at least 8 years, from their calculated turnaround indicators (financial ratios):

Table 1: Turnaround Indicators of the Case Study Firms

Firm	Financial Ratios	2015	2016	2017	2018	2019	2020	2021	2022	2023
¹ Borwa Gold	ROCE	-	0.05	0.00	-0.12	-0.06	0.00	0.17	-0.01	0.15
	Net debt-to-EBITDA	-	1.49	1.87	2.50	1.99	2.08	1.25	1.49	1.35
	Altman's Z-score	-	1.59	1.58	0.35	0.73	1.22	3.02	2.07	2.33
¹ Platinum South	ROCE	-0.06	0.00	-0.15	-0.22	0.08	0.29	0.63	0.33	-
	Net debt-to-EBITDA	17.91	43.65	48.69	28.13	2.73	0.83	0.24	0.25	-
	Altman's Z-score	0.94	1.11	0.70	0.37	1.48	2.31	3.85	2.79	-
¹ Basia Platinum	ROCE	-0.04	-0.01	-0.02	-0.02	0.04	0.16	0.49	0.33	-
	Net debt-to-EBITDA	6.19	9.08	9.15	12.68	6.40	3.18	0.89	1.67	-
	Altman's Z-score	0.50	0.58	0.45	0.28	0.59	1.19	2.58	1.93	-

¹ The firm names used are pseudonyms to comply with research ethics.

The compliance of each firm to the turnaround criteria in 3.4.2(D) was assessed in Table 2. One firm met 5 out of the 6 criteria and two firms met all 6 criteria. This outcome indicated that these cases were suited for further analysis of their respective turnaround processes.

Table 2: Compliance of the three case study firms to the research investigation criteria

Period	Turnaround Criteria	Borwa Gold	Platinum South	Basia Platinum
Decline Period Criteria	ROCE<0 for min. $\frac{2}{4}$ years	√	√	√
	² NDTE>4 or NDTE<0 for min. $\frac{2}{4}$ years	× (but increasing peaking at 2.50)	√	√
	Z-score<1.81 for min. $\frac{2}{4}$ years	√	√	√
Recovery Period Criteria	ROCE>0 for min. $\frac{2}{4}$ years	√	√	√
	² NDTE<4 for min. $\frac{2}{4}$ years	√	√	√
	Z-score>1.81 for min. $\frac{2}{4}$ years	√	√	√
Are the turnaround criteria met?		Mostly	Yes	Yes

² NDTE – Net debt-to-EBITDA

4.2 Case Study 1: Borwa Gold

Borwa Gold is a gold producer. The firm's 8-year turnaround tenure spanned from 2016 to 2023, with 2016-2019 representing its decline period and 2020-2023 its recovery period (see Table 1).

4.2.1 Findings & Analysis on Borwa Gold's Causes of Performance Decline

A. Industry-Specific Factors – Gold Industry

The gold industry is one of the historically significant mining industries along with the PGMs industry in South Africa (Minerals Council South Africa, 2019).

(i) Gold Industry Demand and Supply

Figure 6 shows the comparison between the gold industry's supply trend and Borwa Gold's supply trend from 2016 to 2023.

The South African gold industry was a highly volatile market during Borwa Gold's turnaround tenure. The industry's sales trend was overall on a declining path from 2017 to 2020 and maintained a low average post-2020. Production and sales volumes were largely constrained due to persistent strike action, unreliable logistics infrastructure and power supply interruptions (Minerals Council South Africa, 2020).

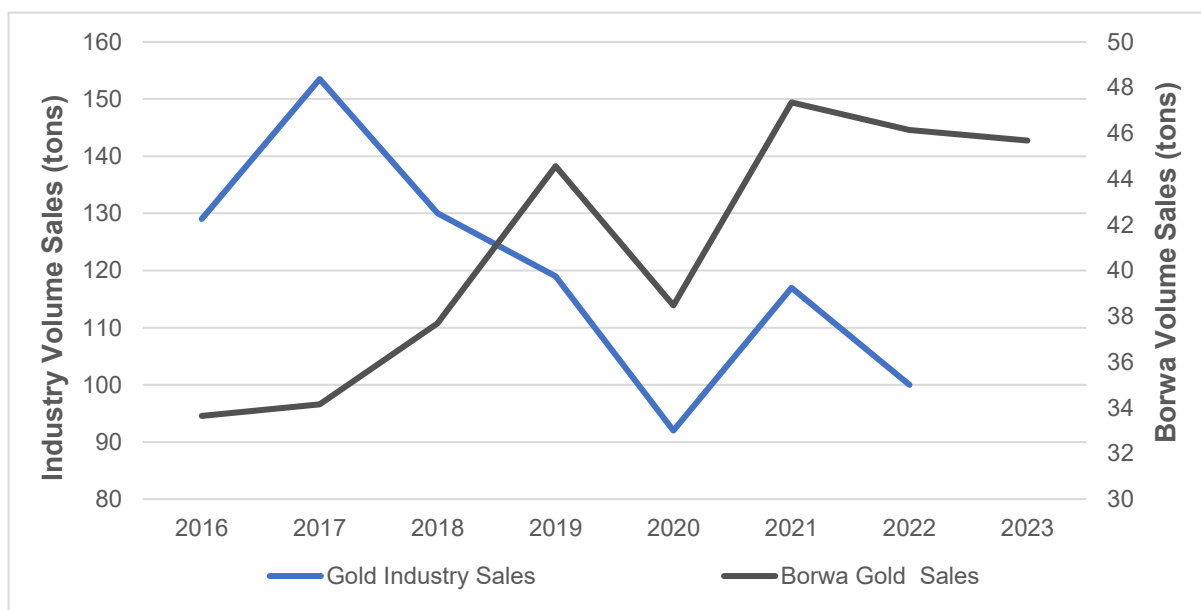


Figure 6: Gold Industry Production and Sales Volumes vs Borwa Golds'

By the end of Borwa Gold's decline period in 2019, the gold industry sales had decreased by 7.8% to 119 tons compared to 2016. This is contrary to the trend

observed for Borwa Gold, which increased its annual volume sales from 34 tons in 2016 to 45 tons in 2019. Borwa Gold’s large asset base, in addition to new acquisitions, enabled the firm to ramp up production amidst a contracting environment.

The dip observed in the industry and Borwa Gold’s sales levels in 2020 is attributed to the lockdown period where supply and demand were constrained (Minerals Council South Africa, 2021). Post-2020, Borwa Gold’s production levels increased and maintained at a stable 46 tons average during its recovery period.

Therefore, this indicates that the contraction of the industry during Borwa Gold’s turnaround process, did not significantly impact Borwa Gold’s performance.

(ii) Gold Industry Employment Trend in South Africa

Figure 7 compares the employment trend of the gold industry to Borwa Gold’s employment trend from 2016 to 2023.

The gold industry retrenched ca. 23 000 employees between 2016 and 2023. This was mainly due to the contraction of the industry observed in Figure 6. In general, the mining industry is highly sensitive to fluctuations in demand, commodity prices and input costs (Minerals Council South Africa, 2018). Small changes in these factors often results in major labour retrenchments as mining firms struggle to remain profitable (Minerals Council South Africa, 2018).

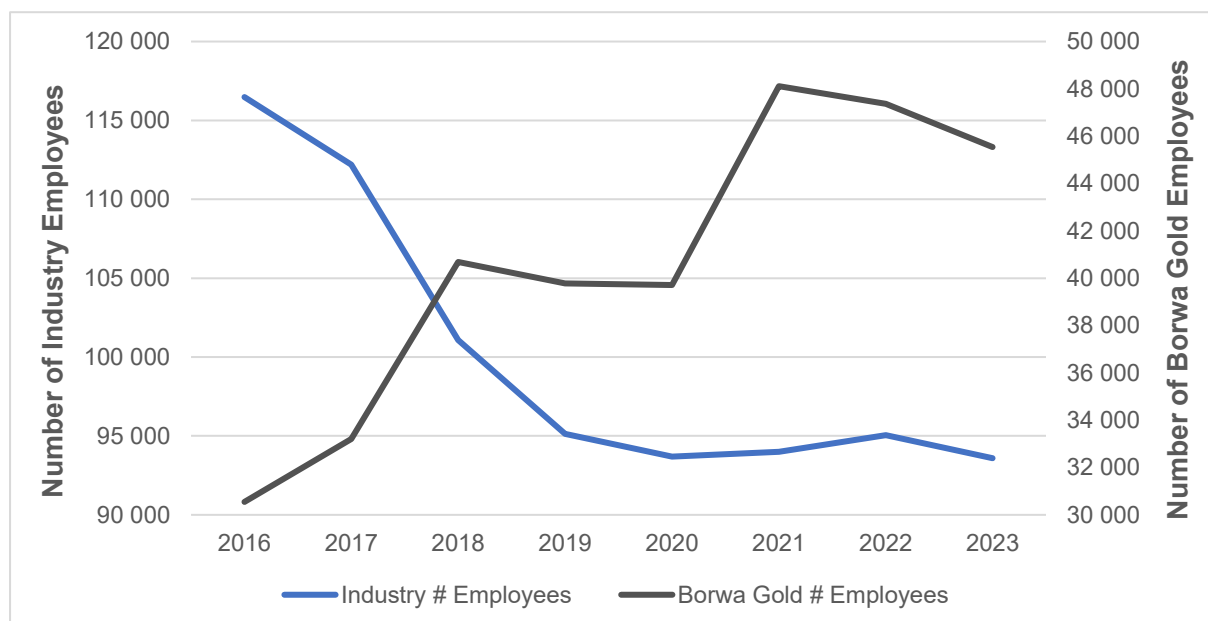


Figure 7: Gold Industry vs Borwa Gold Employment Trends

Contrarily, Borwa Gold increased its labour capacity in the same period. To be able to achieve the abovementioned production and sales levels in Figure 6, Borwa Gold concurrently increased its labour to support its growth strategy. The total number of employees increased by 15 000 from 2016 to 2023. Therefore, this further supports the low influence of the industry contraction on Borwa Gold’s performance.

(iii) Gold Prices

Commodity prices are an external industry factor and mining firms are vulnerable price takers (Minerals Council South Africa, 2018). Commodity prices are denoted in US dollars, thus are highly vulnerable to the exchange rate fluctuations (Minerals Council South Africa, 2018).

Figure 8 shows the impact of gold prices on sales revenue generated by Borwa Gold. Gold prices were relatively flat during the 2016-2019 decline period (Figure 8). They grew on average by 2.5% during this period. This was reflected in the lower Borwa Gold revenues that averaged R21.2 billion in this period.

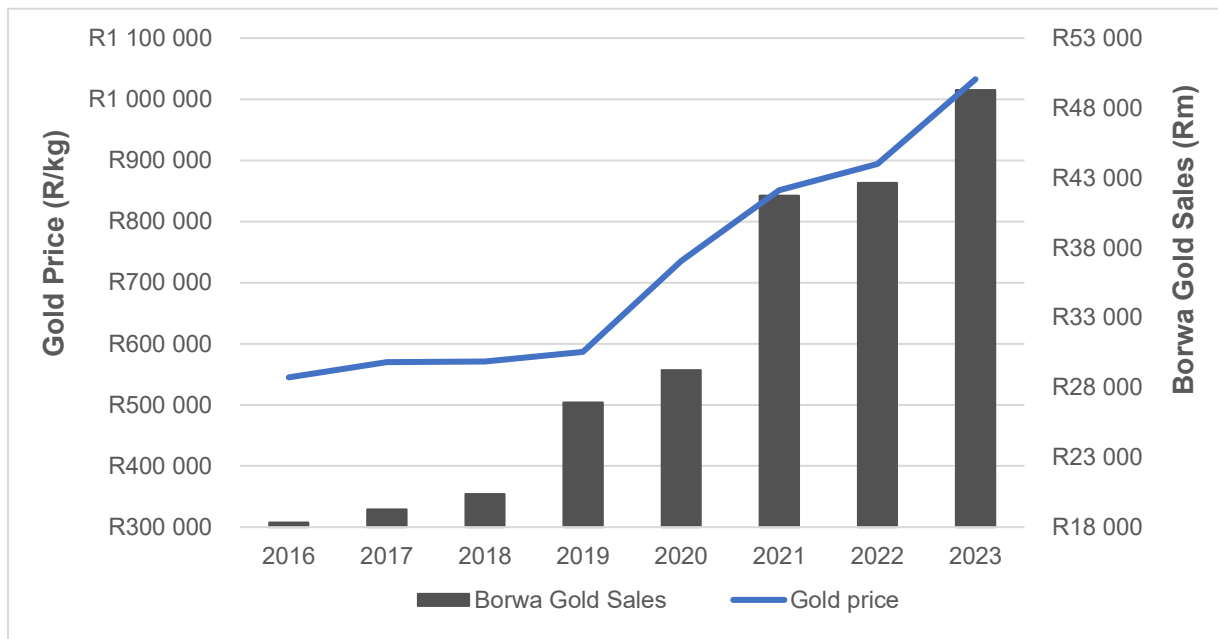


Figure 8: Industry Gold Prices vs Borwa Gold Sales

However, steep gold price increases were observed during the 2020-2023 recovery period. Gold prices increased from R586 653/kg in 2019 to R1 032 646/kg in 2023, an overall 76% increase. Similarly, this was reflected in Borwa Gold’s revenues that escalated to a R40 billion average in this period. Therefore, lower gold prices during the decline period contributed to Borwa Gold’s poor performance.

B. Firm-Specific Factors

(i) High Cost Structure – Impairment Costs

Borwa Gold had a high cost structure during its decline period, particularly, high cost of sales. The major contributors to cost of sales for the firm is (i) production cost, (ii) impairment of assets and (iii) amortisation & depreciation. The impairment of assets had the most impact on the increase in cost sales and the subsequent poor performance of the firm. Although impairment losses have no impact on the cash flow of a firm (non-cash item), they have an impact on the published profitability of a firm, thereby impacting investor sentiments and the share price of a firm.

Figure 9 shows the impact of impairment costs on the gross profit realised by Borwa Gold during the turnaround. In the 2016-2019 period of decline, Borwa Gold incurred impairment losses averaging R2.7 billion (Figure 9). The effect of Borwa Gold’s high impairment losses was observed in the *gross operating losses* experienced by the firm in 2017-2019.

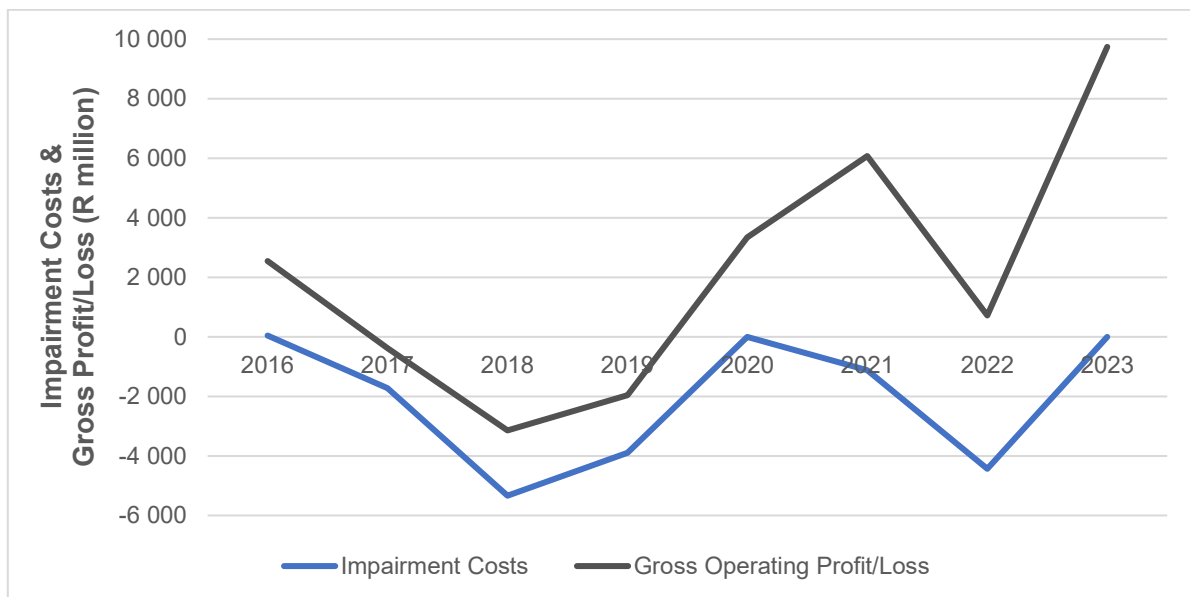


Figure 9: *Borwa Gold’s Impairment cost trend vs Gross Profit/loss from Operations*

With the improvement of impairment costs from 2020, the transition from gross operating losses to gross operating profits was observed during the recovery period. In 2022, the impairment losses increased sharply to R4.4 billion (Figure 9). Expectedly, gross profit from operations incurred an 88% sharp reduction to R718 million. However, due to higher revenue levels during this period, the high impairment losses did not result in gross losses from operations.

Therefore, impairment losses significantly increase cost of sales and lead to a negative (or low) accounting gross profit margin and ultimately, low profitability levels. It, however, has a positive impact on cash flow due to reduced taxes.

Note: About Impairment Costs

To determine the impairment costs, the fair value of the mines (assets) is determined using a future discounted cash flows evaluation model (Bodie et al., 2021). Key assumptions made in this model include the future expected price of gold (or commodities) and future expected exchange rate (R/\$). When the price of gold is expected to be low and exchange rate strong (low R/\$), the outcome is a fair value higher than the recoverable amount (i.e., a book value higher than the market value), resulting in high impairment losses. However, when the price of gold is expected to be high and exchange rate weak, the outcome is a recoverable amount higher than the mines' fair value, resulting in no impairment losses or impairment gains (e.g. 2020, 2021 and 2023 in Figure 9).

4.2.2 Findings & Analysis on Borwa Gold's Turnaround Strategy

Borwa Gold employed an integrated turnaround strategy. In the short-medium term the retrenchment and perseverance turnaround strategies were employed. In the long-term, the innovative turnaround strategy was employed:

A. Retrenchment Turnaround Strategy

In 2018-2020, Borwa Gold retrenched 972 employees to manage its profitability. In the 2021-2023 medium term the firm retrenched a further 2 567 employees (Figure 7).

B. Perseverance Turnaround strategy – Recovery from High Cost of Sales

For recovery from lower gold prices and high cost of sales due to impairment losses, Borwa Gold employed the perseverance turnaround strategy. The price of gold and the exchange rate are external factors that the firm cannot control. Therefore, Borwa Gold “waited it out” until the forecasted values were optimistic. That is, until the forecasted price of gold increased, and the forecasted exchange rate weakened.

Figure 10 exhibits this impact of the exchange rate (R/\$) on the R/kg price of gold. Expectedly, the weakening of the rand is observed from R14.18/\$ in 2019 to R17.76/\$ in 2023. This coincides with the recovery of gold prices and Borwa Gold's turnaround recovery period from 2020 (Figure 10).

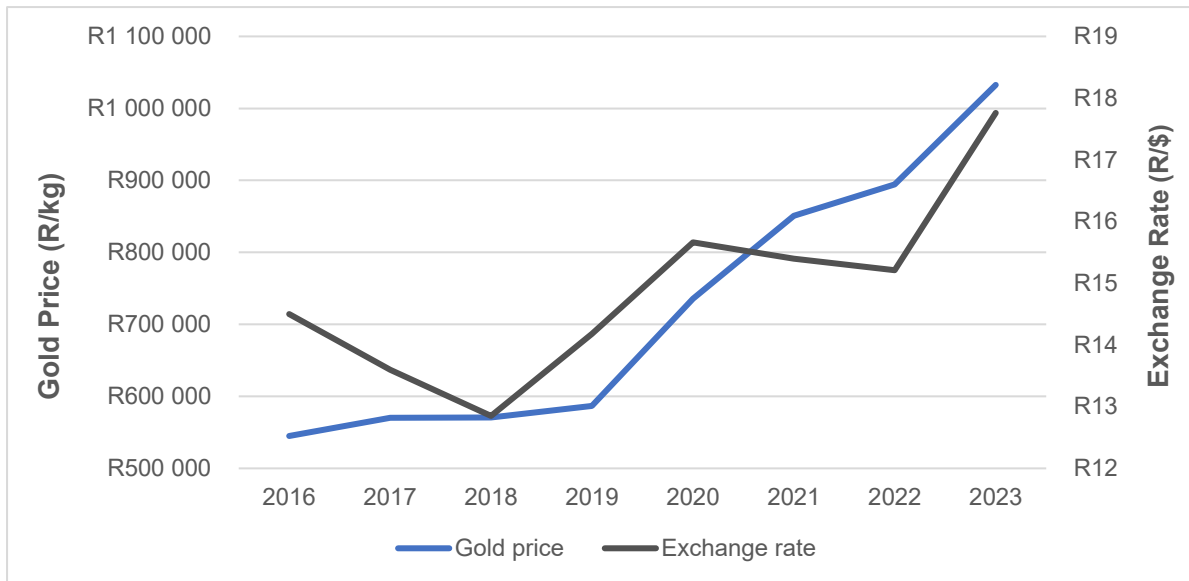


Figure 10: Gold Price and Exchange Rate during the Turnaround period

Therefore, these recovery trends resulted in minimal impairment costs observed in 2020, 2021 and 2023 as seen in Figure 9. This led to lower cost of sales, higher gross profit from operations and ultimately, recovery from low profitability for Borwa Gold.

C. Innovating Turnaround Strategy – Expansion of Assets and Portfolio

Borwa Gold implemented the innovating turnaround strategy in two forms as follows:

(i) Expansion of Asset Portfolio

Borwa Gold expanded its production capacity, primarily in its home base South Africa, to produce higher-quality tonnages and increase its Life of Mines (LoMs):

- **2016:** acquired 50% of a new mine with capacity to produce 5.6 tons of gold annually, through a joint venture.
- **2017:** acquired mine from another gold producer with 7.8 tons per year capacity.
- **2017:** completed a reclamation project which added an additional of 0.5 tons per year gold capacity.
- **2020:** added a new gold mine asset with capacity of 11 tons per year.

With the increased production capacity, Borwa Gold produced a record 47 tons in 2021 and maintained 46 tons production level thereafter (Figure 6). This, additional to the gold price increase, boosted revenues generated.

To support its expansion strategy, Borwa Gold also increased its workforce capacity by a total of 5 832 employees from 2020-2023 (Figure 7).

(ii) Geographical and Product Portfolio Diversification

In the quest to grow margins sustainably, Borwa Gold started diversifying both its geographical reach (internationally) and its product mix to include high-margins silver and copper commodities:

- **2016:** through the aforementioned 50% joint venture, Borwa Gold expanded its reach as these operations are located in Papua New Guinea. Furthermore, the firm diversified its product mix as this asset had reserves of ca. 1.3 million tons of silver, mineable over 7 years. Silver production commenced in 2016.
- **2020:** Borwa Gold expanded existing operations in Papua New Guinea (PNG) through a copper-gold mine project. The firm obtained the permit for passing the environmental impact assessment in 2020. Currently, they are negotiating the contractual terms of the mining license with the PNG government.
- **2022:** Borwa Gold started a new copper project in Australia. The project is currently in its feasibility assessment stage and is estimated to have reserves of up to 1.5 million tons of copper.

4.3 Case Study 2: Platinum South

Platinum South is a Platinum Group Metals (PGMs) producer with primary production of platinum, palladium and rhodium. The firm's turnaround tenure spanned from 2015-2022, with the decline period in 2015-2018 and recovery from 2019-2022 (Table 1).

4.3.1 Findings & Analysis on Platinum South's Causes of Performance Decline

A. Industry-Specific Factors – PGMs Industry

(i) PGMs Industry Demand and Supply

Figure 11 exhibits the PGMs industry sales trend compared to Platinum South's from 2015 to 2022. The bulk of the PGMs industry sales, by volume %, is driven by platinum.

The PGMs industry was contracting for most of Platinum South's turnaround tenure. Industry sales reached a low of 193 tons in 2020 (Figure 11). This industry contraction was primarily due to declining platinum demand. Part of this demand decline was due to the substitution of platinum in the production of auto-catalytic converters (Minerals Council South Africa, 2019). Furthermore, the recycling of platinum has increased in recent years, reducing demand for "freshly" mined platinum (Minerals Council South Africa, 2019).

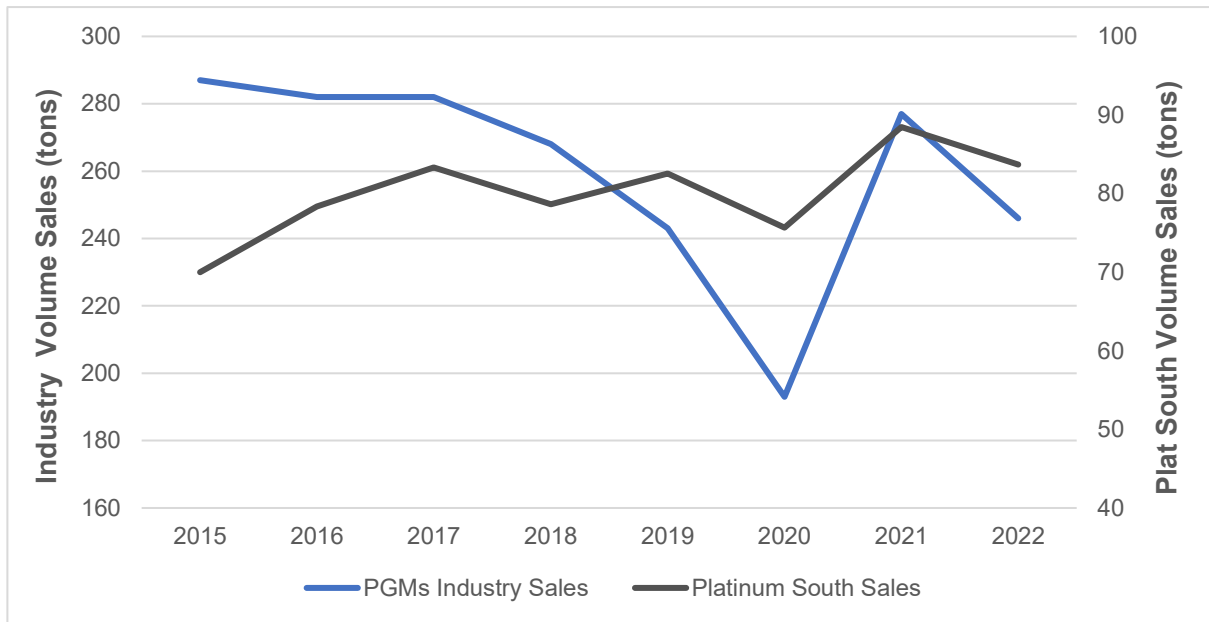


Figure 11: PGMs Industry Volume Sales vs Platinum South's Volume Sales

The volumes sales trend for Platinum South was contrary to the contraction observed in the PGMs industry (Figure 11). The firm's volume sales peaked at 83 tons in 2017 and increased by a total of 9 tons by end of the decline period in 2018 (Figure 11). Therefore, the industry supply trend did not influence the performance of Platinum South as the firm was able to grow its volume sales despite the industry trend.

(ii) PGMs Industry Employment Trend in South Africa

The PGMs industry in South Africa is the most labour-intensive mining industry, accounting for 38.1% of total employment in the mining sector (Minerals Council South Africa, 2024a). Similar to the gold industry, the PGMs industry is highly sensitive to volatility in commodity prices, the exchange rate, global PGMs demand and the cost of production (Minerals Council South Africa, 2018).

Figure 12 exhibits the employment levels of the PGMs industry compared to Platinum South's employment levels from 2015 to 2022. The PGMs industry experienced many waves of retrenchments during Platinum South's turnaround tenure. The largest retrenchments in a single year occurred in 2016, with 15 332 job losses in the industry. By the end of 2020, the number of job losses totalled 24 218 (Figure 12). This trend aligns to the contraction experienced in the industry during this period (Figure 11).

Correspondingly, Platinum South went through two waves of retrenchments during its 2015-2018 decline period (Figure 12). The first wave took place in 2016 and resulted

in 3 316 job losses. In 2017 the firm hired back 1 292 employees. This was nullified by the retrenchment of 1 500 employees in 2018 (Figure 12).

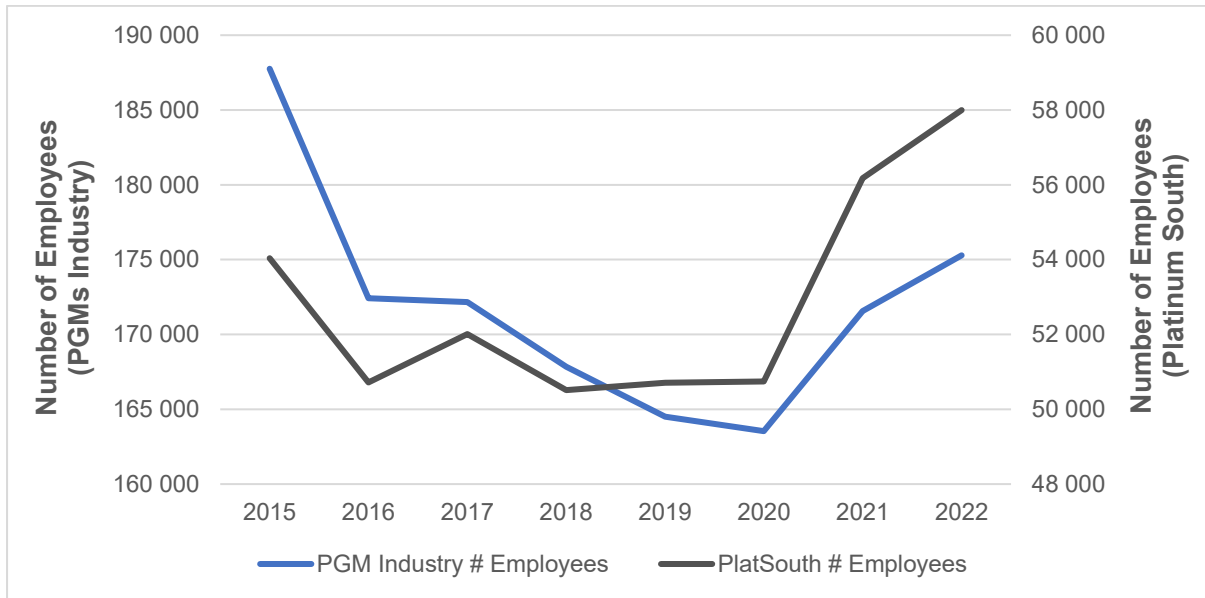


Figure 12: PGMs Industry Labour Force Trends vs Platinum Souths'

Therefore, similar to the general PGMs industry, Platinum South implemented the retrenchment turnaround strategy to reduce losses during its decline phase.

(iii) PGMs Price Trends

PGMs prices are set globally and influenced by other factors besides supply and demand, such as geopolitics (Minerals Council South Africa, 2018). Figure 13 exhibits the PGMs price trends from 2015 to 2022.

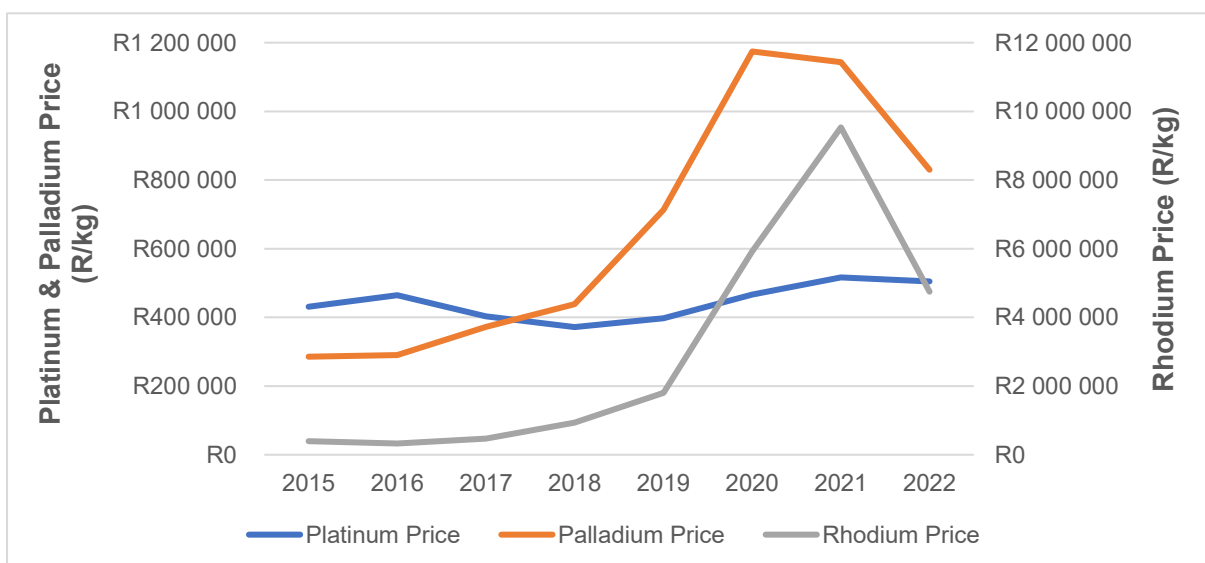


Figure 13: PGMs Prices from 2015-2022

Figure 14 shows the total revenue generated by Platinum South and the contribution of each commodity to total revenue generated, from 2015 to 2022. The revenue contribution per commodity is a function of commodity prices, as will be discussed.

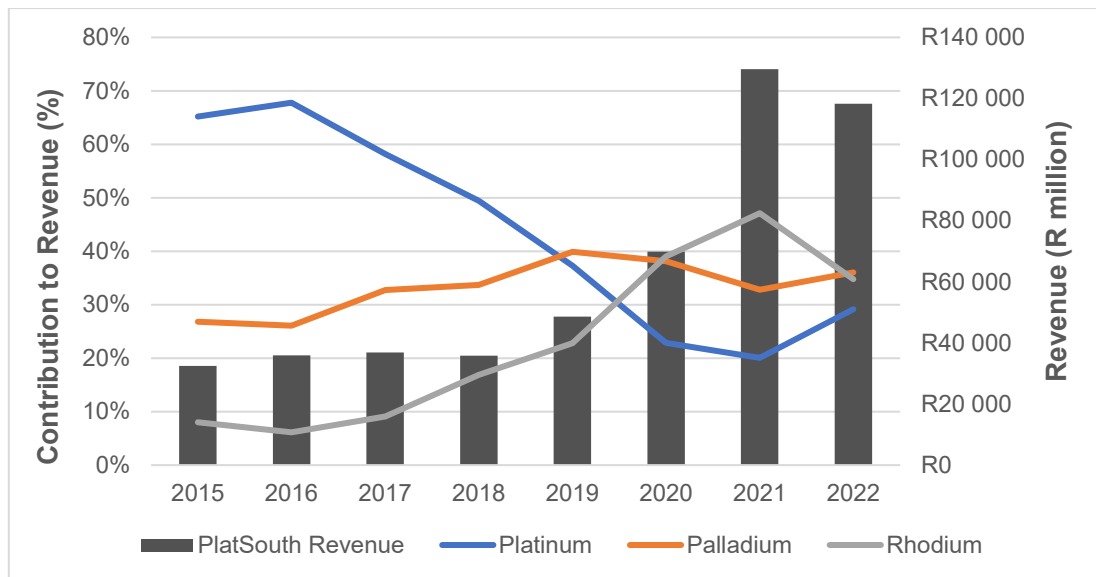


Figure 14: *Contribution (% per product) to Revenue generated by Platinum South*

During the 2015-2018 decline period, PGMs prices were relatively low yet dominated by platinum prices (Figure 13). This was reflected in the revenue contribution of platinum in Figure 14, which averaged a 60% contribution to total revenues in 2015-2018. This indicates that the majority of Platinum South’s revenues were derived from platinum sales in this period.

Intriguingly, platinum prices started declining in 2017, decreasing by a total of ~R93 000/kg between 2016-2018 (Figure 13). This effect was driven by an oversupply in the platinum market, which led to reduced platinum demand and prices (Minerals Council South Africa, 2019). The effect of declining platinum prices on Platinum South’s revenues is further elaborated in Figure 14, with platinum’s contribution to total revenues decreasing from 65% in 2015 to 49% in 2018. Consequently, Platinum South’s total revenues remained at a stagnant R35 billion average for the duration of its decline phase (Figure 14).

These revenues remained stagnant and were offset from declining, by the steady increase in palladium and rhodium prices during this period (Figure 13). Therefore, declining platinum prices were a key contributor to the firm’s unprofitability.

B. Firm-Specific Factors

(i) Lower Production Capacity

Figure 15 reports the volumes sales trends of Platinum's South's commodities from 2015 to 2023.

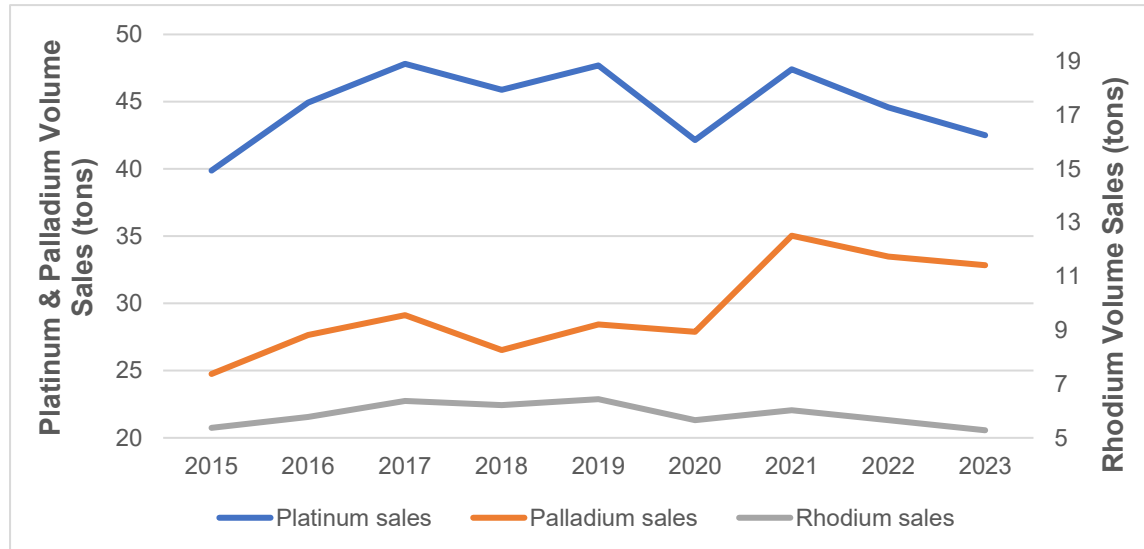


Figure 15: Platinum South's Volume Sales per Product

Platinum volumes accounted for an average of 54% of total volumes produced and sold by the firm (Figure 15). This made platinum volumes the second most influential revenue driver for Platinum South, following platinum prices.

Platinum volumes averaged 45 tons throughout the turnaround tenure. Rhodium volumes also remained constant at a 6 tons average. However, palladium volumes reflected a significant difference during the turnaround process, averaging 27 tons during the decline period and sharply increasing to an average of 34 tons during the latter recovery years. This suggests an expansion of the firm's palladium reserves during the recovery phase, which increased the firm's production capacity by 26%.

Therefore, lower production capacity contributed to the firm's performance decline in 2015-2018 (no growth).

(ii) High Cost Structure – Impairment Costs

Platinum South had a high cost structure. Similar to Borwa Gold's case, the firm's most volatile and influential costs were impairment costs.

Figure 16 shows the impact of impairment costs on the gross income and/or loss from the firm's operations.

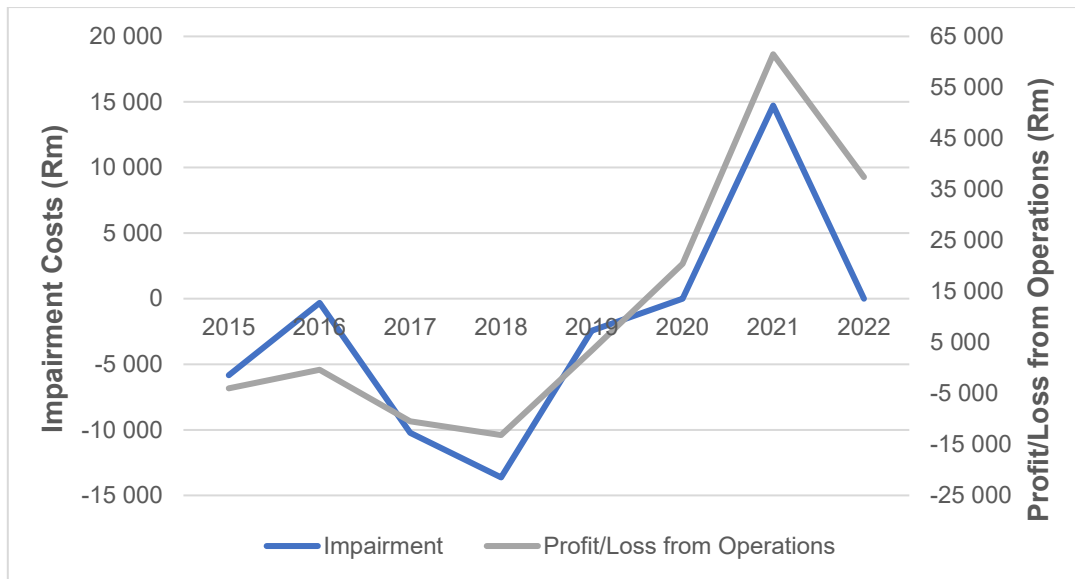


Figure 16: *Platinum South Impairment Costs trend vs Profit/Loss from Operations*

Platinum South experienced impairment losses throughout its 2015-2018 decline phase. These losses reached a low of R13.6 billion in 2018 (Figure 16). As impairment costs improved to zero and/or impairment gains from 2019 to 2022, the accounting gross profit from operations also improved. Therefore, *impairment losses significantly contributed to Platinum South’s performance decline.*

4.3.2 Findings & Analysis on Platinum South’s Turnaround Strategy

Platinum South employed an integrated turnaround strategy. In the short-term, the firm implemented the retrenchment strategy, in the medium term the perseverance strategy, and in the long term the innovating turnaround strategy.

A. Retrenchment Turnaround Strategy

To minimise the losses during the decline phase, Platinum South retrenched a total of 1 175 employees (Figure 12).

B. Perseverance Turnaround strategy – PGMs Prices Recovery

Although platinum prices only recovered by an average of 8.2% from 2019-2022, the prices of palladium and rhodium prices reached peak levels (Figure 13) and contributed significantly to Platinum South’s turnaround. Palladium and rhodium reached their record highs during this period (Minerals Council South Africa, 2020).

Palladium increased by an average of 24.4% and unexpectedly maintained prices higher than platinum starting in 2018 (Figure 13). Rhodium prices also increased well above platinum and palladium prices from 2018 and averaged an 82.9% increase.

Rhodium reached a peak R9.5 million/kg in 2021, followed by palladium at R1.1 million/kg. Consequently, both palladium and rhodium became dominant revenue generators during the recovery phase, averaging 37% and 36% contribution levels respectively.

C. Innovating Turnaround Strategy – Expansion of Assets

To boost its turnaround efforts and strengthen its product portfolio, Platinum South acquired a palladium mine in 2020. This substantiates the sharp increase in palladium volumes observed from 2021 (Figure 15). The firm was strategic in acquiring a palladium mine during this period, specifically when palladium prices were the highest (Figure 13). This enabled the firm to leverage these high prices and boost their revenues to record levels (Figure 14). Revenues peaked at R129 billion in 2019 and increased by over 150% on average compared to the decline period.

To support its increase in production volumes, Platinum South also grew its labour force by 7 485 employees during recovery, reaching its record staffing levels in its entire turnaround tenure (Figure 12).

4.4 Case Study 3: Basia Platinum

Basia Platinum is an integrated Platinum Group Metals (PGMs) producer with primary production of platinum, palladium and rhodium. The firm's 8-year turnaround period spanned from 2015-2022, with the decline period from 2015 to 2018 and recovery from 2019 to 2022.

4.4.1 Findings & Analysis on Basia Platinum's Causes of Performance Decline

A. Industry-Specific Factors – PGMs Industry

(i) PGMs Industry Demand, Supply and Employment trends vs Basia Platinum

Figure 17 exhibits the volumes sales trend and employment rate trend of Basia Platinum.

Basia Platinum's volume sales trend during its turnaround tenure contrasted the overall PGMs industry trend exhibited in Figure 11. Although the industry experienced consistent decline in PGMs sales from 2015-2020, Basia Platinum's volume sales increased consistently throughout the 8-year turnaround tenure, reaching 23 tons in 2022 compared to 13 tons in 2015 (Figure 17). The firm was resilient in growing sales

volumes in a low PGMs demand environment. This may suggest Basia Platinum also grew its asset base or expanded existing assets.

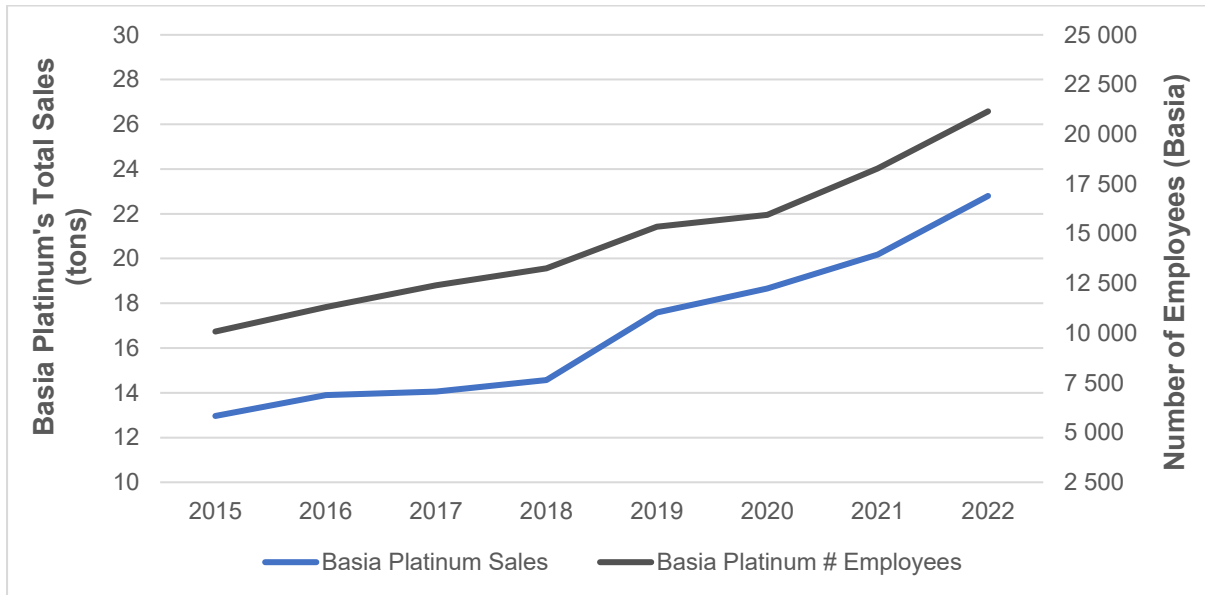


Figure 17: *Basia Platinum's Volume Sales and Employment trends from 2015-2022*

With increasing sales volumes, the firm also consistently grew its workforce y-o-y, contradicting the industry employment trend observed in Figure 12. Basia Platinum hired 11 072 new employees during its turnaround tenure, growing its employee numbers by 110% to 21 152 employees by the end of 2022 (Figure 17).

(ii) PGMs Industry Price Trends

As PGMs prices are an external industry factor, Basia Platinum was subject to the same PGMs prices as Platinum South, as shown in Figure 13.

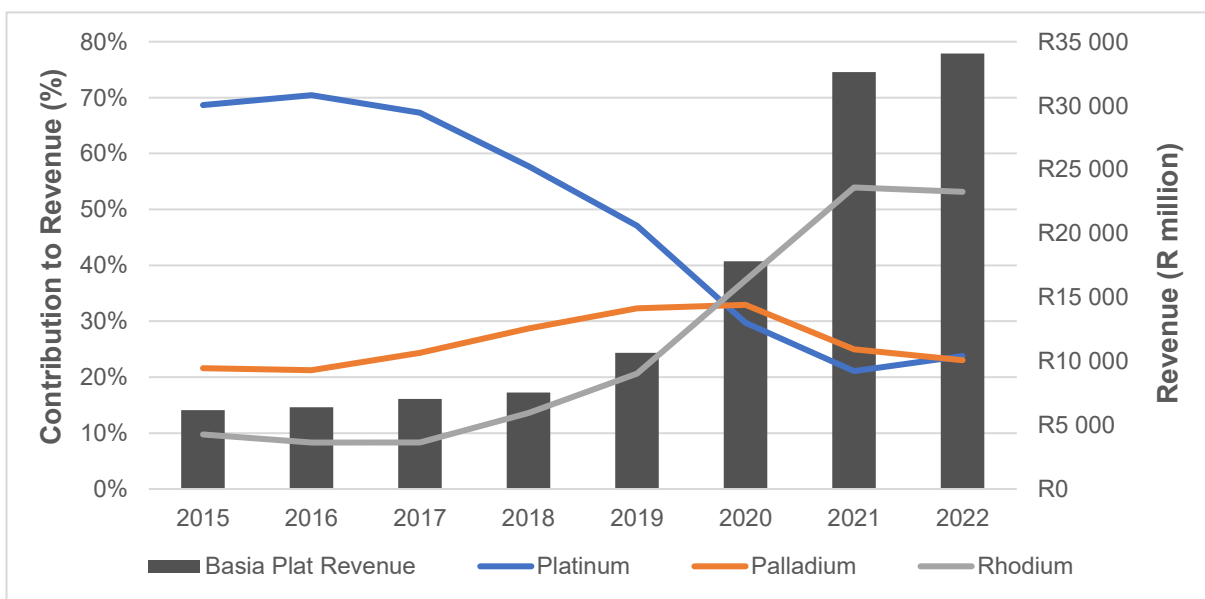


Figure 18: *Revenue contribution per product vs total revenues by Basia Platinum*

Figure 18 shows the total revenues generated by Basia Platinum and the % contribution of each commodity to the total revenues over the 2015 to 2022 period. Despite the increasing Basia volume sales, overall revenues remained relatively flat during the 2015-2018 decline phase, averaging R6.8 billion (Figure 18).

In this period, the principal revenue contributor was platinum at an average 66% revenue contribution. However, platinum’s contribution was on the decline post-2016 and hit a low 21% contribution point in 2021 (Figure 18). This was mainly due to decreasing platinum prices between 2016-2018, as exhibited in Figure 13. Therefore, decreasing platinum prices significantly contributed to the firm’s poor performance.

B. Firm-Specific Factors

(i) Lower Production Capacity

Figure 19 reports the volumes produced and sold (per commodity) by Basia Platinum over its turnaround tenure.

Basia Platinum’s highest volume pusher is platinum, average 51% of total volumes sold over the years (Figure 19). In the 2015-2018 distress phase, the volumes remained mostly flat with platinum averaging 8 tons, palladium 4 tons and rhodium 1 ton (Figure 19). This was attributed to the firm’s low production capacity. This limited production capacity disabled the firm from boosting its revenue generation potential and contributed to its poor performance.

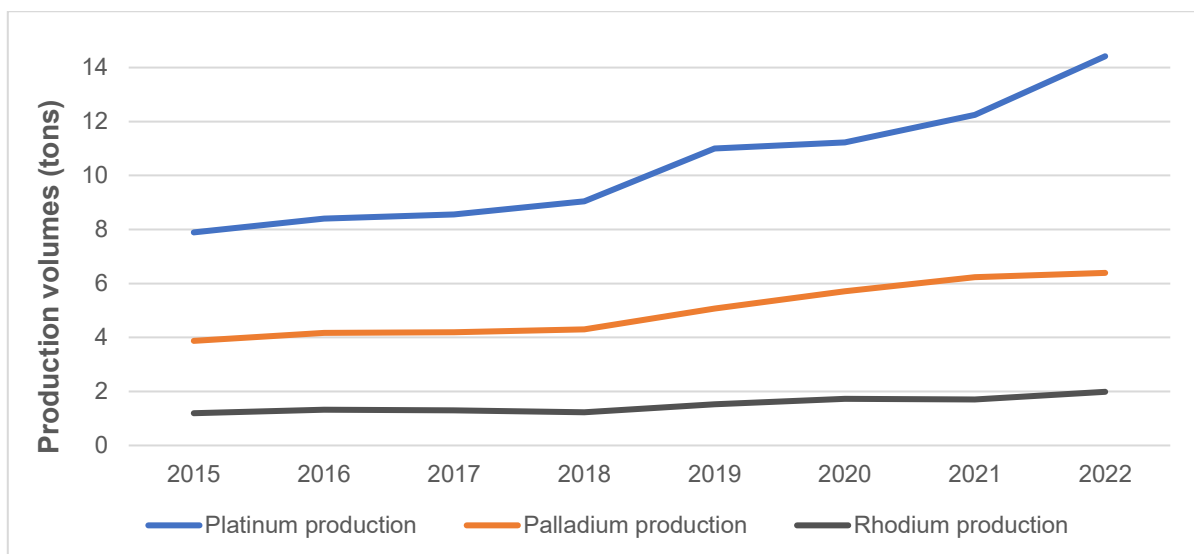


Figure 19: *Basia Platinum production levels per product*

With the expansion of existing assets and acquisition of new ones, most of which were commissioned in 2018-2019, the volumes produced increased during the recovery period (Figure 19). Platinum’s production volumes hit a record 14 tons in 2022, palladium increased to 6 tons and rhodium to 2 tons (Figure 19). This contributed to the improved revenues observed during the recovery phase in Figure 18, which reached a record of R34.1 billion in 2022.

(ii) High-Cost Structure – Operating Costs

Figure 20 exhibits the impact of revenue and cost of sales on the realised gross profit margin (GPM) of the firm from 2015 to 2022.

Basia Platinum had a high cost structure during its poor performance period in 2015-2018 (Figure 20). In this period, its gross profit margin averaged 8.8% (Figure 20). This implies that over 90% of Basia’s revenues were used to cover its cost of sales in this period. Specifically, the input operating costs, which account for over 80% of the firm’s cost of sales.

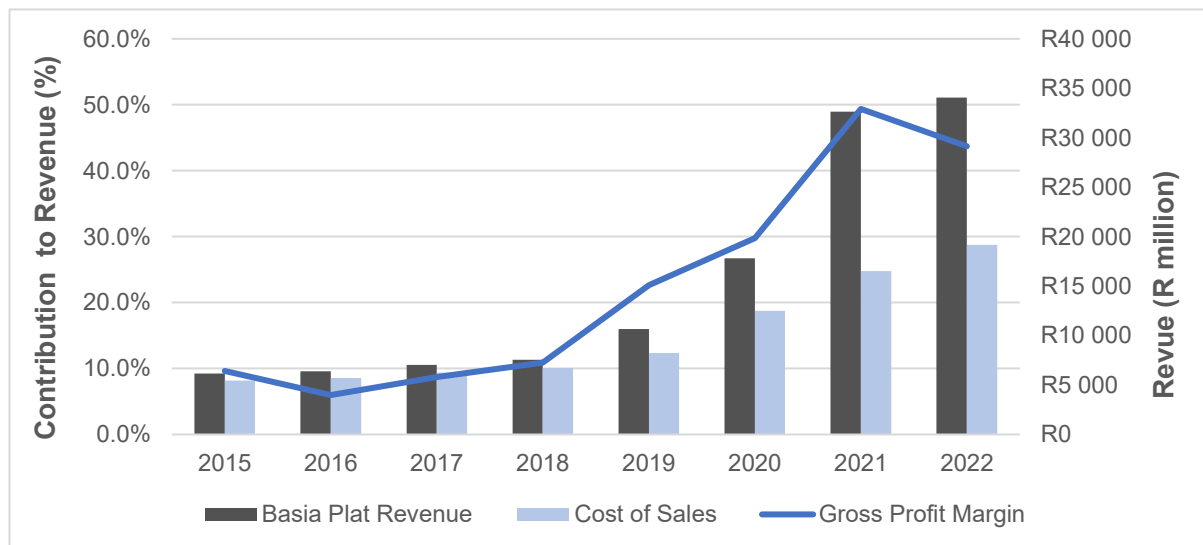


Figure 20: *Basia Platinum’s GPM vs Total Revenues generated*

Figure 21 exhibits the trend of Basia Platinum’s main operating costs which were labour, sundries & contractors, stores (inventory costs) and utilities (electricity and water). This enabled detailed analysis of the Basia Platinum’s cost structure.

Most of Basia Platinum’s operating costs were increasing y-o-y, including labour, stores and utilities costs. The increasing labour costs aligned with the higher levels of the firm’s hired labour, observed in Figure 17. The increasing stores and utilities costs also aligned with the higher production volume levels observed in Figure 19.

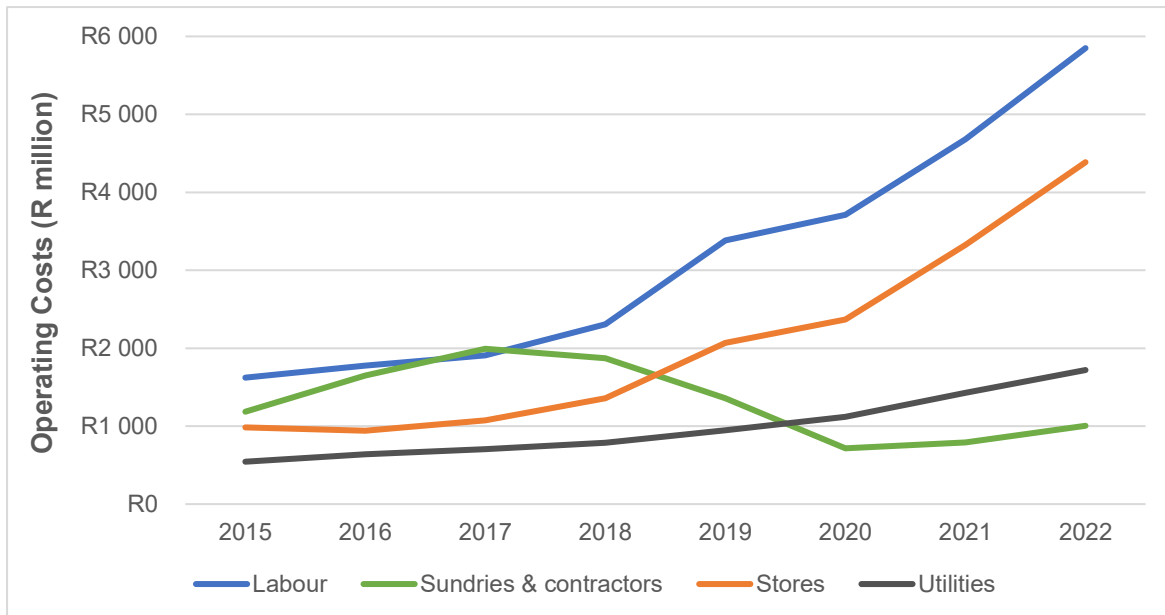


Figure 21: *Basia Platinum Operating Costs per Category*

Sundries & contractors costs are the only operating costs that decreased during Basia Platinum’s turnaround tenure. This signifies that these costs played a significant role in the turnaround of Basia.

During the poor performance phase in 2015-2018, sundries & contractors were on average, the second highest operating costs compared to labour costs (Figure 21). In 2017, sundries & contractors were the highest operating costs, exceeding the labor costs by R86 million (Figure 21). These high sundries & contractors costs coincide with the low GPM observed during this time (Figure 20). Therefore, high sundries & contractors costs contributed significantly to Basia’s poor performance.

With the decrease in sundries & contractors costs from 2019, the GPM of Basia improved by a significant 36.4% (Figure 20). In total, the sundries and contractors costs decreased by 42.2% from a R1.7 billion average during the decline phase, to a reduced R968 million average during the recovery phase (Figure 21).

4.4.2 Findings & Analysis on Basia Platinum’s Turnaround Strategy

Basia Platinum employed an integrated strategy to turnaround its performance. This included cost-control measures in the short to medium term, in their strategic intent to become the lowest cost PGMs producer in South Africa. The firm implemented the persevering strategy medium term. The firm also innovatively expanded its asset base to grow its production capacity to accommodate the growing demand in the long term:

A.1 Retrenchment Turnaround Strategy – Cost Control

Basia's core focus in the short term was to reduce its operating costs to improve its profitability. This is evident in the sharp decline in sundries & contractors costs from 2019 (Figure 21). One of the measures Basia put in place to reduce these costs was to substitute contractors by employing more permanent employees. Expectedly, this increased the labour costs. However, this action also strategically decreased the sundries & contractors costs.

In 2017, the firm spent more on sundries & contractors costs than internal labour costs (Figure 21). Hence the firm's strategy to convert outsourced skills (contractors), to internal capabilities. Overall, the sundries & contractors costs declined from being the second largest operating cost in 2015-2018, to the lowest operating cost from 2020.

This resulted in utilities, made up of 97% electricity costs, becoming the third largest operating cost. To reduce power costs and reliance on Eskom, while aligning to the long-term strategy to decarbonise, Basia commissioned a 1.25 MW solar farm in 2022. Additionally, Basia launched two new 20MW and 80MW solar energy projects in 2023, expected to be commissioned by end of 2026. This additional renewable energy capacity will replace 58% of Basia's power needs from Eskom. Additional to utility costs savings, the firm will save on diesel costs incurred during power curtailments (diesel costs are part of *stores costs*). Moreover, the firm is currently investigating the viability of installing a 140MW wind farm.

A.2 Retrenchment Turnaround Strategy – Disinvestments from Assets

In 2022, Basia made a 34.5% acquisition in a low-cost PGMs mine with over 30 years LoM. Due to the subsequent drop in PGMs prices, particularly rhodium, the firm decided to disinvest in this asset in 2023. The disinvestment was strategically constructed to evade large impairment losses. Contrarily, the firm strengthened its liquidity and balance sheet through the cash offer received from selling the asset.

B. Persevering Turnaround Strategy – PGMs Prices Recovery

Similar to Platinum South, Basia Platinum persevered until the PGMs prices recovered, specifically palladium and rhodium prices (Figure 13). This was reflected in rhodium's sharp increase in contribution to total Basia Platinum revenues during the recovery period. Rhodium maintained its position as the dominant revenue generator

during Basia's performance turnaround. Its contribution levels grew significantly, reaching 37% in 2020 and peaking at a record 54% in 2021 (Figure 18).

C. Innovating Turnaround Strategy – Expansion and Diversification of Assets

For its long-term sustainability, Basia focussed on its 10-year growth strategy starting in 2015. Basia focussed on innovatively expanding existing assets, acquiring new assets, diversifying product mix and diversifying geographically in the following ways:

2016: expanded one of the two existing PGMs mine in South Africa by acquiring an adjacent mine that was owned by a competitor. This increased the LoM by 30 years.

2017: expanded its smelting plant capacity by installing a new furnace with 20MW capacity. This increased Basia Platinum's smelting capacity to 35MW.

2017: deepened one of its South African mines to increase the mine's PGMs production capacity by an additional 6.72 tons per annum.

2017: acquired a PGMs recycling plant in Pennsylvania (United States) to expand geographically (part of strategy). This facility enables production of PGMs from recycled material (a growing segment) and enabled Basia to increase its production of by-products such as nickel.

2018: acquired a new PGMs mine in South Africa with capacity to produce 4.96 tons per annum (>30 years LoM). Acquired from a copper and cobalt producer.

2022: acquired and commissioned 2 new recycling furnaces at existing mine operations in South Africa.

It is due to these projects that Basia's production levels increased significantly from 2019 (Figure 19). Currently, Basia is capable of producing over 30 tons of PGMs per annum, a considerable growth from the 15 tons capacity in 2015.

Although there is uncertainty in the future demand of PGMs in electric vehicles manufacture, there is a clear future demand of PGMs for the hydrogen economy (Minerals Council South Africa, 2024a). PGMs are vital catalysts in the manufacture of hydrogen fuel cells, a growing segment as many industries and countries implement their decarbonisation goals (Minerals Council South Africa, 2024a). Therefore, Platinum South and Basia Platinum, equipped with higher production capacities, will be well positioned to supply this growing demand.

Chapter 5 – Conclusions, Recommendations & Future Research

5.1 Summary of Findings

Table 4 is a Thematic Summary of the findings, analysis and interpretation of the three turnaround cases studied in Chapter 4. This followed the recommended thematic analysis discussed in [3.7](#). The conclusion in [5.2](#), details the summary reported in Table 3.

Table 3: Thematic Summary of Cases studied

Criteria		Borwa Gold	Platinum South	Basia Platinum
Firm/Industry type.		Gold (growing the silver and copper portfolio)	PGMs	PGMs
Founded		1950 (75 years)	1966 (59 years)	1986 (39 years)
Number of Employees		45 546	70 000	21 152
Asset Portfolio		8 underground mines; 5 open pit operations; 4 surface operations (includes waste management operations) and 2 developing copper projects.	9 PGMs mines	4 PGMs mines (3 wholly owned, 1 joint ventures); 5 concentrators; 2 smelting furnaces and 1 PGMs recycling facility
Key Contributors to Decline	External factors	Lower gold prices	* Low PGMs prices * Strong/low R/\$ exchange rate	
	Internal Factors	High COS – high impairment losses	* Limited production capacity * High COS - high impairment losses	* Limited production capacity * High COS – sundries & contractors costs
Turnaround Point	Trigger	Increase in gold prices	PGMs prices sharp increase from 2019 (palladium and rhodium)	
Turnaround Strategy		Integrated Turnaround Strategy implemented in all three cases (with various short-, medium- and long-term actions)		
Short Term Strategy Implemented		Cost curtailment: * Retrenched a total of 3 539 employees.	Cost curtailment: * Retrenched 1 175 employees.	Cost curtailment: * Retrenched sundries & contractors costs.

			* Disinvested in PGMs mine joint venture.
Medium Term Strategy Implemented	<ul style="list-style-type: none"> * Persevered until increase in gold prices and weakening of exchange rate. * Improved grade quality produced. 	* Persevered until palladium and rhodium prices recovered.	<ul style="list-style-type: none"> * Reduced electricity and diesel costs through renewable energy projects * Persevered until palladium and rhodium prices recovered.
Long Term Strategy Implemented	<ul style="list-style-type: none"> * Innovating – acquired 3 high-quality gold mines, one with silver reserves. * Diversified into other countries (Papua New Guinea and Australia) * Developing copper mining projects (diversify product mix). 	<ul style="list-style-type: none"> * Innovating - acquired a palladium mine. Grew low-cost high-margin palladium product capacity. Capitalised on high palladium prices. 	<ul style="list-style-type: none"> * Innovating – expanded PGMs reserves and increased smelting (processing) capacity. * Diversified operations – acquired PGMs recycling plant. * Diversified to other countries (US).
Current Firm Performance (2023 latest performance)	<ul style="list-style-type: none"> * 2023 Revenue = R49 billion (24.6% increase). * 15% gold price increase to R1 032 646/kg. * <u>1% decrease in sales volume</u> (45.7 tons). * Record GPM of 19.8%. * 6 fatalities in 2023, 7 fatalities less compared to 2022. 	<ul style="list-style-type: none"> * R106 billion in revenue (<u>9.9% decrease</u>). * <u>Decline in palladium (-27.1%) and rhodium (-51.1%) prices</u>; 53% of revenues combined. * <u>4% sales volume decrease</u> to 81 tons. * <u>13.9% decrease in GPM</u> (2023: 21.0%). * <u>16 fatalities</u> in 2023 vs 7 fatalities in 2022. 	<ul style="list-style-type: none"> * R39.5 billion revenue (16.1% increase). * Platinum prices increased by 14.3%; accounts for 51% of revenues. * Supplied record 27 tons (19.9% increase). * <u>4.6% decrease in GPM</u> (2023: 39.1%). * <u>3 fatalities</u> vs 2 fatalities in 2022.
Current Firm Strategy (2024/2025 onwards)	<ul style="list-style-type: none"> * Diversify asset and skills base to include silver and copper production. * Diversify to other countries. * Improve costs and produce higher-grade gold. * Leadership change - appointed new CEO in 2025. * Decarbonisation drive towards 2045 net carbon zero target (30MW solar power commissioned). 	<ul style="list-style-type: none"> * Grow existing asset portfolio (competitive edge) of more profitable products. * Stabilise production and increase output. * Focus on growing supply in “green” PGMs segments, e.g. H₂ fuel cell manufacturing. * Energy security through renewables. * Zero fatalities (per annum) target by 2028. 	<ul style="list-style-type: none"> * Grow and diversify asset base (reduce risk) through recycling plant. * Diversify to other countries (US). * Optimise operating costs and become lowest cost PGMs producer. * Decarbonise through pipeline renewable energy projects (240MW worth in projects). * Improve health and safety of employees.

5.2 Conclusions

The findings of this research contribute to the understanding of the key causes of performance decline in the mining and metals sector, and the effective turnaround strategies implemented to improve performance.

The three cases studied include one gold producer, Borwa Gold, and two PGMs producers, Platinum South and Basia Platinum. These firms went through their respective turnaround processes between 2015-2023. Their mining experience ranges from 39 to 75 years, making them good case studies to research as their mining experiences reflect resilience and expertise in their industries. By size, Platinum South is the largest employer (70 000 employees), however, Borwa Gold holds the largest asset portfolio (17 assets). By production volumes and revenues, Platinum South is twice the size of Borwa Gold and three times the size of Basia Platinum.

Key Causes of Performance Decline in the Mining and Metals Sector

From the findings, the principal external contributor to a mining firm's decline in performance is commodity prices. There is a strong correlation between a mining firm's performance and the trends in commodity prices. In all three cases, decline in performance was primarily due to low commodity prices. Hence, the trigger point for performance turnaround in all cases, was the increase in commodity prices.

This proves [Proposition 1](#) correct, as the primary cause of decline in all cases was industry-specific (commodity prices). This was reflected in the gold and PGMs industries' contraction rates, which were worse than the decline of the individual firms.

Internally, the principal contributor to performance decline was high cost structures, specifically, high cost of sales. In all cases, the GPMs were low due to high cost of sales during the decline phase. The primary costs contributing to cost of sales were impairment losses, labour and sundries costs. Furthermore, low production volumes contributed to performance decline. In all cases, the firms expanded their production capacities to grow production volumes and consequently, grow revenues generated.

Effective Turnaround Strategies in the Mining and Metals Sector

All firms studied employed an integrated turnaround strategy comprised of short-term, medium-term and long-term strategies. In the short term, the firms implemented the retrenchment strategy. Borwa Gold and Platinum South focused on retrenching labour, a conventional strategy in the Mining and Metals sector when markets contract.

However, Basia focussed on retrenching other operating costs and disinvesting from an unprofitable asset, instead of retrenching employees. This was strategic for the firm as it had the least workforce (2019: 15 358 employees) and needed all its human capital to implement its long-term turnaround strategies. The impact of the retrenchment strategy was reduction in operating costs for all firms.

The medium-term strategy implemented in all three cases was the persevering turnaround strategy, particularly with uncontrollable external factors such as commodity prices. All firms maintained the status quo until the commodity prices increased. This strategy enabled the firms to reach record revenue levels when prices reached peak levels, making it the most impactful strategy during the turnarounds.

In the long term, in all cases, the innovating turnaround strategy was implemented. The firms strategically expanded their production capacities through new acquisitions and expansion of existing assets. This enabled the firms to achieve record production levels and sales volumes levels during their recovery periods. High production volumes in a high commodity prices climate enabled these firms to maximise their earnings during their recovery periods.

Therefore, these findings prove [Proposition 2](#) correct, *an integrated turnaround strategy was more effective in all the cases and was dominated by retrenchments in the short term, persevering in the medium term and innovating in the long term.*

5.3 Recommendations

A high correlation was observed between the short-, medium- and long-term strategies implemented by the three firms studied, regardless of industry type. From the findings of this investigation, it is recommended that for a firm in the Mining and Metals sector to turnaround its performance and recover from performance decline, an integrated turnaround strategy must be implemented. This integrated turnaround strategy should be comprised of the retrenchment strategy in the short term, the persevering strategy in the medium term and the innovating strategy in the long term.

A small and/or medium sized firm by number of employees (1-30 000 employees), should opt for retrenchment of costs and unprofitable assets rather than labour as it has limited labour capacity. However, a larger firm of >30 000 employees, could leverage the retrenchment of some of its employees to reduce its labour operating costs in the short term. The long-term innovating strategy at minimum must include

the expansion of existing assets, acquisition of new assets and diversification of product portfolio to diversify revenue streams (derisk from volatile commodity prices).

5.4 Future Research and Limitations of the research

A repetition of this study using both secondary data and primary data through interviews with the leadership of the various firms, is highly encouraged for future research. This is to explore the necessary understanding behind leadership decisions and dynamics during turnarounds and conducting interviews would provide this insight. Furthermore, this study may be conducted in the context of other markets with large mining and metals sectors such as Australia, Brazil, China and the United States in order to benchmark the findings of this research.

The findings in this report are only relevant to the Mining and Metals sector. Therefore, a similar study is recommended for future research in other capital-intensive sectors such as the energy (oil and gas) and automotive sectors. This is encouraged so that the findings of this investigation can be tested in other sectors and other types of turnaround strategies explored.

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Appendix A

Verification of Turnaround Criteria per Firm (3 examples)

Firms	Ratios	IS/BS Value	Unit	2015	2016	2017	2018	2019	2020	2021	2022	2023	
Firm 1	ROCE	EBIT	Rm	-4 976	1 855	86	-4 377	-2 171	66	7 404	-340	7 600	
		Total Assets	Rm	36 137	37 030	38 883	39 523	36 736	44 692	49 498	46 808	57 240	
		Current Liabilities	Rm	1 661	2 031	3 844	3 599	3 234	7 560	5 758	4 975	6 867	
	ROCE Total		Rm	-0.144	0.053	0.002	-0.122	-0.065	0.002	0.169	-0.008	0.151	
	Net debt-to-EBITDA	Total Liabilities	Rm	9 384	8 851	9 592	14 141	14 122	21 317	17 818	16 691	22 360	
		Cash & Cash Equivalents	Rm	1 067	1 256	1 246	706	993	6 357	2 819	2 448	2 867	
		EBITDA	Rm	-3 618	5 084	4 452	5 368	6 588	7 197	11 959	9 546	14 409	
	Net debt-to-EBITDA Total		Rm	-2.299	1.494	1.875	2.503	1.993	2.079	1.254	1.492	1.353	
	Altman's Z-score	Total Assets	Rm	36 137	37 030	38 883	39 523	36 736	44 692	49 498	46 808	57 240	
		Current Assets	Rm	3 151	3 469	4 935	4 181	4 377	10 166	8 551	7 494	8 678	
		Current Liabilities	Rm	1661	2031	3844	3599	3234	7560	5758	4975	6867	
		Retained Earnings	Rm	-5 358	-4 409	-4 486	-9 103	-11 710	-12 583	-7 707	-9 639	-4 955	
		EBIT	Rm	-4 976	1 855	86	-4 377	-2 171	66	7 404	-340	7 600	
		Stock Price	R/share	27	35	44	24	26	52	88	63	67	
		Total Outstanding Shares	#	436 187 133	437 299 479	439 957 199	500 251 751	539 841 195	603 142 706	616 052 197	616 525 702	618 071 972	
		Total Liabilities	Rm	9 384	8 851	9 592	14 141	14 122	21 317	17 818	16 691	22 360	
		Sales	Rm	15 435	18 334	19 264	20 359	26 912	29 245	41 733	42 645	49 275	
	Altman's Z-score Total			0.565	1.590	1.577	0.355	0.733	1.218	3.021	2.065	2.325	
	Firm 2	ROCE	EBIT	Rm	-3 937	105	-9 877	-11 991	4 435	24 185	68 866	45 801	10 402
			Total Assets	Rm	77 215	85 016	73 481	66 168	66 954	95 855	126 475	156 087	169 386
Current Liabilities			Rm	7 510	7 746	8 798	11 605	10 283	12 500	17 793	16 587	17 672	
ROCE Total		Rm	-0.056	0.001	-0.153	-0.220	0.078	0.290	0.634	0.328	0.069		
Net debt-to-EBITDA		Total Liabilities	Rm	24 853	26 560	24 249	26 575	25 874	31 309	35 799	36 796	43 351	
		Cash & Cash Equivalents	Rm	2 597	6 788	7 839	3 705	8 242	13 331	23 474	26 505	26 820	
	EBITDA	Rm	1 243	453	337	813	6 463	21 779	51 494	40 846	4 371		

Net debt-to-EBITDA Total		Rm	17.905	43.647	48.694	28.130	2.728	0.825	0.239	0.252	3.782
Altman's Z-score	Total Assets	Rm	77 215	85 016	73 481	66 168	66 954	95 855	126 475	156 087	169 386
	Current Assets	Rm	15 256	19 728	21 177	20 586	24 251	38 941	56 672	60 180	67 762
	Current Liabilities	Rm	7510	7746	8798	11605	10283	12500	17793	16587	17672
	Retained Earnings	Rm	31 271	31 200	22 982	12 302	13 773	28 854	59 661	81 336	74 175
	EBIT	Rm	-3 937	105	-9 877	-11 991	4 435	24 185	68 866	45 801	10 402
	Stock Price	R/share	54.0	47.0	54.2	44.6	45.9	51.0	85.1	173.3	125.3
	Total Outstanding Shares	#	632 214	734 778	734 778	734 778	734 778	799 034	817 255	850 702	866 401
	Total Liabilities	Rm	24 853	26 560	24 249	26 575	25 874	31 309	35 799	36 796	43 351
Sales	Rm	32 477	35 932	36 841	35 854	48 629	69 851	129 575	118 332	106 594	
Altman's Z-score Total			0.941	1.110	0.699	0.368	1.484	2.315	3.852	2.794	1.801
ROCE	EBIT	Rm	-622 389	-231 735	-352 737	-404 544	885 974	4 236 257	14 437 730	15 260 180	-
	Total Assets	Rm	19 151 336	18 977 863	19 636 112	23 824 034	26 944 663	30 667 505	37 950 860	57 351 141	-
	Current Liabilities	Rm	2 624 158	1 177 700	1 614 386	3 605 088	2 617 050	4 378 087	8 563 910	11 678 404	-
ROCE Total		Rm	-0.038	-0.013	-0.020	-0.020	0.036	0.161	0.491	0.334	-
Net debt-to-EBITDA	Total Liabilities	Rm	9 934 911	10 249 879	11 544 071	16 437 355	19 487 863	21 017 190	18 935 541	27 617 059	-
	Cash & Cash Equivalents	Rm	4 138 189	3 105 080	1 786 865	388 702	950 315	2 160 956	3 877 208	1 175 225	-
	EBITDA	Rm	935 762	786 893	1 066 569	1 265 179	2 897 190	5 927 140	16 951 739	15 817 698	-
Net debt-to-EBITDA Total		Rm	6.195	9.080	9.148	12.685	6.398	3.181	0.888	1.672	-
Altman's Z-score	Total Assets	Rm	19 151 336	18 977 863	19 636 112	23 824 034	26 944 663	30 667 505	37 950 860	57 351 141	-
	Current Assets	Rm	5 784 288	4 867 779	4 103 337	4 715 090	5 340 449	6 367 790	10 563 033	8 153 531	-
	Current Liabilities	Rm	2624158	1177700	1614386	3605088	2617050	4378087	8563910	11678404	-
	Retained Earnings	Rm	1 139 808	631 545	-4 398	-709 396	-650 629	1 518 555	10 901 513	21 621 765	-
	EBIT	Rm	-622 389	-231 735	-352 737	-404 544	885 974	4 236 257	14 437 730	15 260 180	-
	Stock Price	R/share	40	43	40	37	59	116	217	171	-
	Total Outstanding Shares	#	509 781 212	509 781 212	509 781 212	509 781 212	509 781 212	509 781 212	509 781 212	396 615 878	-
	Total Liabilities	Rm	9 934 911	10 249 879	11 544 071	16 437 355	19 487 863	21 017 190	18 935 541	27 617 059	-
Sales	Rm	6 173 618	6 404 641	7 051 337	7 552 181	10 649 506	17 811 971	32 626 918	34 064 270	-	
Altman's Z-score Total			0.498	0.578	0.453	0.276	0.592	1.186	2.584	1.928	-