Not about rules, but about good deals: The political economy of securing inclusive capital investment and transformation in South African mining

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Pas de règles, mais de bonnes accords : L'économie politique de la sécurisation de l'investissement en capital inclusif et de la transformation dans l'industrie minière Sud-Africaine

par

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Abstract

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This PhD studies the imperative of racially transforming South Africa's economy in a way that spurs the growth of capital investment that is socially and locally inclusive. Part I explores the role of bargains among elites ("deals") in facilitating investment. It studies deals as the basis of credible commitment and as the "arena of action" in the context of a relatively robust rule of law. What kind of deals produce capital investment and transformation, and what kind of deals produce predation and isomorphism? Using process tracing methodology, the research traces deals in platinum mining between 1994 and 2018. Part II examines the extent to which this investment is socially inclusive in alleviating local poverty, creating local employment, and reducing local inequality. This part relies on individual level census data of 20 million observations and geocoded mining data of over 400 mines to evaluate the local impact of mining investments on income poverty, employment, and inequality between 1996 and 2011.

The study finds compelling evidence that "deals are the basis of credible commitment" to securing investment. The rule of law alone is important but insufficient as it leaves "residual uncertainty" for investors. The evaluation of the impact of mining investments on local communities suggests a qualification, at the local level, of the "resource curse" hypothesis. Mining potentially brings benefits in terms of income poverty alleviation and employment. However, the high-low cycles of commodity price booms potentially create employment volatility and exacerbate inequality. Mining investments seemingly involve trade-offs that can be moved in net positive directions with good deals between business and the state, and local communities. The research thus contributes to the literature on property rights and investment, state-business relations and development, and natural resource governance for development.

Key words*:* deals, rules, credible commitment, transformation, investment, poverty, employment, state-business relations, natural resource governance

Résumé

Pas de règles, mais de bonnes accords : L'économie politique de la sécurisation de l'investissement en capital inclusif et de la transformation dans l'industrie minière Sud-Africaine

Musawenkosi (Musa) NXELE

Décembre 2022

Ce doctorat étudie l'impératif de la transformation raciale de l'économie sud-africaine de manière à stimuler la croissance des investissements en capital qui sont socialement et localement inclusifs. La première partie explore le rôle des marchandages entre élites ("accords") dans la facilitation des investissements. L'étude examine les accords en tant que base d'un engagement crédible et en tant que "terrain d'action" dans le contexte d'un état de droit relativement solide. Quels types de accords produisent des investissements en capital et des transformations, et quels types de accords produisent de la prédation et de l'isomorphisme ? En utilisant la méthodologie de traçage de processus, le processus de recherche retrace les accords dans l'exploitation minière du platine entre 1994 et 2018. La deuxième partie examine dans quelle mesure cet investissement est socialement inclusif en réduisant la pauvreté locale, en créant des emplois locaux et en réduisant les inégalités locales. Cette partie s'appuie sur les données de recensement au niveau individuel de 20 millions d'observations et sur les données minières géocodées de plus de 400 mines pour évaluer l'impact local des investissements miniers sur la pauvreté monétaire, l'emploi et les inégalités entre 1996 et 2011.

L'étude montre de manière convaincante que "les accords sont la base d'un engagement crédible" pour garantir l'investissement. L'État de droit seul est important mais insuffisant car il laisse une "incertitude résiduelle" aux investisseurs. L'évaluation de l'impact des investissements miniers sur les communautés locales suggère une qualification, au niveau local, de l'hypothèse de la "malédiction des ressources". L'exploitation minière apporte potentiellement des avantages en termes de réduction de la pauvreté et d'emploi. Toutefois, les cycles de hausse et de baisse des prix des matières premières peuvent créer une volatilité de l'emploi et exacerber les inégalités. Les investissements miniers semblent intrinsèquement impliquer des compromis qui peuvent être orientés vers des directions positives nettes grâce à de bons accords entre les entreprises, l'État et les communautés locales. La recherche contribue ainsi à la littérature sur les droits de propriété et l'investissement, les relations entre l'État et les entreprises et le développement, et la gouvernance des ressources naturelles pour le développement.

***Mots clés** : accords, règles, engagement crédible, transformation, investissement, pauvreté, emploi, relations entre l'État et les entreprises, gouvernance des ressources naturelles.*

Declaration

I, **Musawenkosi Nxele**, declare that this thesis is my own work and that the material included in this thesis is the result of new research, and other sources have been acknowledged through referencing. I also declare that this thesis is submitted for a joint-PhD degree to the University of Cape Town and the University of Paris 1 Pantheon Sorbonne.

Signed: Signed by Candidate

Musawenkosi (Musa) Nxele

Je, **Musawenkosi Nxele**, déclare que cette thèse est mon propre travail et que le matériel inclus dans cette thèse est le résultat d'une nouvelle recherche, et que les autres sources ont été reconnues par le biais de références. Je déclare également que cette thèse est soumise pour un doctorat conjoint à l'Université de Cape Town et à l'Université de Paris 1 Panthéon Sorbonne.

Signé : Signé par le candidat

Musawenkosi (Musa) Nxele

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With this work I have begun the faithful journey of studying God's social and economic world for the upliftment of His created people.

Having finished this, I know nothing else apart from Christ, and Him crucified.

To be found in Him, not having knowledge of my own.

But having the Spirit of knowledge and wisdom that I may know and see the hope

To which we have been called in Christ Jesus

So now Christ be magnified in my body, whether in life or in death

For Joy. For glory. For pleasure.

I dedicate this PhD to my parents:

my faithful and upstanding father,

Joachim Mfaniseni Nxele (1946-2021)

and

my loving and resilient mother,

Regina Ernestina Nxele (née Gwala)

Both of you gave me Christ, and now I live for joy and will die expectantly…

Nansi ke iPhD bazali. Asisebenzele umphakathi wethu nezwe lethu!

Summary of the structure of the overall joint-PhD

The overarching research question is (how) can racial class transformation be reconciled with growth of inclusive capital investment?

Part I (Chapter 1 to Chapter 11) of the overarching research question examines how *elite transformation* and capital investment (i.e., the creation and expansion of mines) can be reconciled in the mining sector. Racial class transformation is an important basis of the political settlement of 1994, coded in laws and policies such as the Black Economic Empowerment Act and the Mineral and Petroleum Resources Development Act. Part I evaluates the efforts to spur capital investment through processes that are interlocked or co-dependent with the creation of a new black capitalist class. The question is explored using two comparative case studies, each anchored on an incumbent mining firm.

Specifically, Part I of the research question surfaces a problem of elite class transformation as a process that creates an expropriation problem, because it tampers with the security of property rights. More broadly, it creates a set of rules that create uncertainty in the private sector, thus making the investor uncertain about the security of the investment, given the ambiguous and frequent iteration of rules by the state in order to effect racial class transformation. The expropriation risk is more pronounced in the mining sector because of the mining law that nationalised mineral rights as part of giving the state the power to effect elite class transformation by requiring incumbent mining firms to transfer a share of ownership to entrant historically disadvantaged elites.

The underlying problem of the expropriation risk associated with the elite class transformation project produces a credible commitment problem for incumbents or investors. The same government that is powerful enough to define and enforce property rights is also powerful enough to expropriate investment. The objective of effecting elite class transformation requires growth of investment, but the objective also contradicts the growth of investment by creating uncertainty even in a country with a relatively robust rule of law. (How) can racial elite class transformation be reconciled with capital investment growth? The study shows that it is at the level of deals where racial elite class transformation and investment growth is reconciled. In fact, the PhD argues that deals are the basis of credible commitment.

The study shows that contrary to the aggregate picture of low capital investment in mining during the commodity price boom of the 2000s, there is variation of success of investment at the level of deals. This variation is partly a function of "the capital spectrum": with patient capital/corporate strategy on one end, and predatory capital/corporate strategy at the other end. Successful deals are those that are able to materialise ongoing investment commitments through cooperation between the state and patient business, or cooperation between patient incumbents and patient BEE partners. Less successful or failed deals are those that are driven by predatory kind of corporate strategies that foster collusion or isomorphism, leading to low (subsequent) investment. Therefore, while the aggregate picture of the elite class transformation is associated with relatively low capital investment, there are pockets of excellence at the level of deals that reconcile transformation with investment. The PhD contributes to understanding why and how failure of investment deals happens, and why and how successes happen, by highlighting deals as the arena of action, as opposed to rules as the only way of effecting successful investment-inducing transformation. The study demonstrates that resolving the investment-transformation dilemma involves building cooperative deals between business and government, and cooperative deals between incumbents and BEE partners at the asset level.

The broad project of racial class transformation consists of class-based sub-bargains. While the elite sub-bargain was underpinned by changing the racial ownership structure of the economy, the incorporation of non-elites was envisaged to happen through public provision of services, and in the case of mining, through job creation and locally embedded mining practices such as local procurement of goods, and through mining-related windfalls that would translate into local upliftment.

Therefore, Part II of the PhD (Chapter 12 to Chapter 13) evaluates the local economic impact of mining investments, including the creation, the expansion, and the closure of mines in mining communities. To what extent are mining investments economically inclusive in a way that benefits local communities? This question is approached as an econometrics question, evaluated using a constructed panel dataset of 19 million individual observations across three census data waves between 1996 and 2011; data which includes the incomes, employment status, and the education levels of individuals, along with variables on community level social conditions within which each individual is located.

The three waves of census data are merged with collected mining data that include the location of mines, the type of commodity mined, and the world commodity prices. This geocoded dataset enables an exploration of the impact of mines in mining communities on poverty and employment. Part II produces findings and conclusions that directly address the socio-economic impacts of mining investment.

The overall conclusion to the joint-PhD reflects on the main question of reconciling the imperative of racial class transformation with inclusive capital investment.

Résumé de la structure de l'ensemble du doctorat en cotutelle

La question principale de la recherche est la suivante : (comment) la transformation de la classe raciale peut-elle être conciliée avec la croissance de l'investissement en capital inclusif ?

La première partie (chapitre 1 à chapitre 11) de la question de recherche primordiale examine comment la transformation des élites et l'investissement en capital (c'est-à-dire la création et l'expansion des mines) peuvent être conciliés dans le secteur minier. La transformation des classes raciales est une base importante du règlement politique de 1994, codifiée dans des lois et des politiques telles que la Black Economic Empowerment Act et la Mineral and Petroleum Resources Development Act. La première partie évalue les efforts visant à stimuler l'investissement en capital par le biais de processus qui sont imbriqués ou co-dépendants avec la création d'une nouvelle classe capitaliste noire. La question est explorée à l'aide de deux études de cas comparatives, chacune étant ancrée sur une entreprise minière en place.

Plus précisément, la première partie de la question de recherche soulève le problème de la transformation de la classe d'élite en tant que processus qui crée un problème d'expropriation, car il altère la sécurité des droits de propriété. Plus largement, il crée un ensemble de règles qui créent de l'incertitude dans le secteur privé, rendant ainsi l'investisseur incertain de la sécurité de son investissement, étant donné l'itération ambiguë et fréquente des règles par l'État afin d'effectuer la transformation de la classe raciale. Le risque d'expropriation est plus prononcé dans le secteur minier en raison de la loi sur l'exploitation minière qui a nationalisé les droits miniers dans le cadre de l'octroi à l'État du pouvoir d'opérer une transformation de la classe élitaire en exigeant des entreprises minières en place qu'elles transfèrent une part de propriété aux élites historiquement défavorisées entrantes.

Le problème sous-jacent du risque d'expropriation associé au projet de transformation de la classe d'élite produit un problème d'engagement crédible pour les titulaires ou les investisseurs. Le même gouvernement qui est assez puissant pour définir et faire respecter les droits de propriété est aussi assez puissant pour exproprier les investissements. L'objectif de transformation de la classe élitaire nécessite une croissance de l'investissement, mais l'objectif contredit également la croissance de l'investissement en créant de l'incertitude, même dans un pays où l'état de droit est relativement solide. (Comment) la transformation de la classe d'élite raciale peut-elle être conciliée avec la croissance de l'investissement ?

L'étude montre que c'est au niveau des accords que la transformation de la classe d'élite raciale et la croissance des investissements sont conciliables. En fait, le doctorat soutient que les accords sont la base d'un engagement crédible.

L'étude montre que, contrairement à l'image globale d'un faible investissement en capital dans le secteur minier pendant le boom des prix des matières premières des années 2000, il existe une variation du succès de l'investissement au niveau des accords. Cette variation est en partie fonction de "l'éventail des capitaux" : avec des capitaux patients/stratégie d'entreprise à une extrémité, et des capitaux prédateurs/stratégie d'entreprise à l'autre extrémité. Les opérations réussies sont celles qui parviennent à concrétiser des engagements d'investissement permanents grâce à la coopération entre l'État et les entreprises patientes, ou à la coopération entre les opérateurs historiques patients et les partenaires BEE patients. Les accords moins réussies ou qui échouent sont celles qui sont motivées par des stratégies d'entreprise de type prédateur qui favorisent la collusion ou l'isomorphisme, ce qui entraîne un faible investissement (ultérieur). Par conséquent, alors que l'image globale de la transformation de la classe d'élite est associée à un investissement en capital relativement faible, il existe des poches d'excellence au niveau des accords qui concilient transformation et investissement. Le doctorat contribue à comprendre pourquoi et comment les accords d'investissement échouent, et pourquoi et comment les succès se produisent, en mettant en évidence les accords en tant que domaine d'action, par opposition aux règles en tant que seul moyen de effectuer une transformation réussie induisant un investissement. L'étude démontre que la résolution du dilemme investissement-transformation implique la mise en place d'accords de coopération entre les entreprises et le gouvernement, et d'accords de coopération entre les opérateurs historiques et les partenaires BEE au niveau des actifs.

Le vaste projet de transformation de la classe raciale est constitué de sous-ententes basées sur la classe. Alors que le sous-ententes de l'élite était soutenu par la modification de la structure de propriété raciale de l'économie, l'incorporation des non-élites était envisagée par le biais de la prestation de services publics et, dans le cas de l'exploitation minière, par la création d'emplois et de pratiques minières ancrées localement, telles que l'achat local de biens, et par les retombées fiscales liées à l'exploitation minière qui se traduiraient par une amélioration de la situation locale.

Par conséquent, la partie II du doctorat (chapitre 12 et chapitre 13) évalue l'impact économique local des investissements miniers, y compris la création, l'expansion et la fermeture de mines dans les communautés minières. Dans quelle mesure les investissements miniers sont-ils économiquement inclusifs d'une manière qui profite aux communautés locales ? Cette question est abordée comme une question d'économétrie, évaluée à l'aide d'un ensemble de données de panel construit de 19 millions d'observations individuelles à travers trois vagues de données de recensement entre 1996 et 2011 ; les données qui comprennent les revenus, le statut d'emploi, et les niveaux d'éducation des individus, ainsi que des variables sur les conditions sociales au niveau de la communauté dans laquelle chaque individu est situé. Les trois vagues de données de recensement sont fusionnées avec des données minières collectées qui comprennent l'emplacement des mines, le type de produit extrait et les prix mondiaux des produits de base. Cet ensemble de données géocodées permet d'explorer l'impact des mines dans les communautés minières sur la pauvreté, l'emploi et l'inégalité. La partie II produit des résultats et des conclusions qui traitent directement des impacts socio-économiques des investissements miniers.

La conclusion générale du doctorat conjoint réfléchit à la question principale de la conciliation de l'impératif de transformation de la classe raciale avec l'investissement inclusif en capital.

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List of Acronyms, Abbreviations and Technical Terms

LIST OF ACRONYMS AND ABBREVIATIONS

Please note that in some areas, the author has decided to repeatedly restate the acronym in order to remind the reader and prevent confusion. Apologies if this repetition is unhelpful.

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PART I OF THE PHD. ELITE TRANSFORMATION AND CAPITAL INVESTMENT GROWTH

SECTION A. Introduction, theory, methodology, and case overview

CHAPTER 1 Racial class transformation and fixed investment

1.1. The purpose of the PhD, the hypothesis, and the argument

South Africa has been caught in a development dilemma of growing the economy through capital investment while simultaneously racially transforming the economy by using the policy of Black Economic Empowerment (BEE). Racial class transformation is at the heart of South Africa's political settlement that supported a peaceful transition and kept the country from derailing. It is equally true that to sustain the project of class transformation requires sustained fixed investments. This is because to accommodate an increasingly growing and broader elite and upper middle class requires a productive, dynamic economy. In introductory Economics terms, the policy of class transformation faces the problem of scarcity of resources, and it takes investments and productivity to stimulate growth that can sustain the ever-growing socio-economic demands of the South African political settlement.

From an implementation perspective, writing down rules of transformation, such as racially based business equity transfers to be implemented by the private sector, is the easier task than achieving transformation. There is no natural cause and effect that by outlining these rules, (1) investment follows, or (2) black owned productive enterprises or entrepreneurs are created. On the contrary, there is an underlying problem of credible commitment that is a binding constraint on investment. In other words, investors need to know that their investment will be protected from threats of present or future expropriation. Rules, or compliance with rules, are insufficient to meet the minimum requirement for investment. This is because government remains powerful enough to provide protection to a set of asset owners but can also use that power to abrogate those property rights. A universal robust rule of law – a striking feature of the South Africa case – is helpful, but insufficient Courts may rule on the law and provide clarity on policy, but government retains the prerogative to create policy, and therefore, policy is susceptible to the preferences and vicissitudes of ruling political actors. This creates the credible commitment problem from this residual uncertainty.

In relation to transformation, even if rules are made and followed, there is no guarantee that the result will be a productive entrepreneurial class crucial to a virtuous circle of creating wealth and sustaining growth. On the contrary, rules can be managed through predatory means by predatory actors for personal benefit in ways that undermine what was meant to be a programmatic

developmental project. Therefore, the process of transforming the economy and broadening opportunities through investment requires methods of building credible commitment that are compatible with investment and transformation. This means that the success of investment-led transformation, as this PhD argues, requires both a kind of incumbent capital that shares in the vision and is farsighted enough to embrace an adaptive corporate strategy, and a kind of black elite that is equally patient and productive rather than seeking quick personal enrichment. This study follows Andrew's (1997) definition of the concept:

> "Corporate strategy is the pattern of decisions in a company that determines and reveals its objectives, purposes, or goals, produces the principal policies and plans for achieving those goals, and defines the range of business the company is to pursue, the kind of economic and human organization it is or intends to be, and the nature of the economic and noneconomic contribution it intends to make to its shareholders, employees, customers, and communities".[1]

This definition captures a crucial part of the argument being developed, namely that large incumbent firms have corporate strategies which over time can reveal their preferences and interests in relation to country political economy issues, such as the project of elite transformation. Based on their corporate strategies, which can change over time, firms may decide to cooperate with social and developmental imperatives of the political economy, or they can act in short sighted ways.[2]

1.1.1. Research question and hypothesis

The overarching research question is: (How) can the policy objectives of expanding capital investment and fostering racial elite transformation be reconciled?

South Africa faces a problem of low capital investment and a highly unequal economy. The question of how to stimulate more investment in the country seemingly collides with the policy of BEE, which requires investors to undertake share-ownership deals with local black entrants. Typically, the argument is that this requirement is a significant deterrent to investment and in most instances, to productive transformation. The logic goes as follows. First, BEE is a deterrent to investment because it is riddled with the credible commitment problem. Once an investor

[1] For simplicity, the terms "corporate culture" and "corporate strategy" are used interchangeably. By corporate culture the study means the dispositions and multi-dimensional set of behaviours that align along the patient-predatory capital spectrum (outlined in Chapter 2). Insight into corporate culture comes from studying the history of the players, rather than working backwards from the specific outcome of specific deals (which would make the analysis tautological).

[2] That the corporate strategies of firms can be observed by careful study is empirically leveraged (used) by this PhD.

complies with the rules, the same state that makes the rules can later change those rules, further eroding value for investors. Second, BEE is a deterrent to productive transformation because it encourages a self-selection of predatory politically connected individuals who abuse the programme for self-enrichment, instead of building thriving enterprises compatible with national development.

This PhD meets those arguments in two important ways. First, South Africa needs both capital investment growth, and transformation, in parallel. It is not politically viable to do away with the project of transformation. It is also not economically sustainable to do without investment growth. Transformation is imperative to the stability of the political settlement, while investment is imperative to economic growth and to the viability of the transformation project. How therefore might the two seemingly mutually exclusive imperatives meet in mutually reinforcing ways? Second, the PhD contends that looking beneath the generally dim picture of low growth in capital investment and failure of transformation policy, there have been successes and failures at the level of deals. What was the difference between deals that failed versus those that succeeded? All investors face the same requirements to undertake BEE deals along with the risks involved — and the investor strategy of co-opting politically connected entrants in BEE deals is ubiquitous. Some deals thrived in investment compatible ways, while others failed to attract or sustain subsequent investment. Therefore, the PhD argues that there are differences in the deals, where some deals could lock-in credible commitment while other deals failed to stabilise or be credible. The strong condition is that investment requires credible commitment. More importantly, sustained subsequent investment is buttressed by enduring credible commitment. If the deal deteriorates, investment wanes. This is a bigger question than once-off investment. It is about ongoing investment.

Taking the particular case of South Africa's large oligopoly-dominated economy in the 1990s as a point of departure, the hypothesis explored is that the basis of credible commitment is ultimately a deal. In turn, investment is highest and most sustainable when there are two conditions or levels of deals undertaken by incumbent capital.

(1) there is a tangible, continually reaffirmed deal of mutual cooperation on transformation rather than predation between incumbent capital and the ruling political elite or party or government.
(2) there is a durable, patient partnership that locks in credible commitment at the firm or asset level; while investment is lower when the deal is struck with a predatory partner.

In other words, in the context of BEE, investment is not driven by getting rules right, but driven by getting the deals right. A preoccupation in South Africa with getting rules right has historically led to uncertainty in rules, undermining investment and growth (Levy, Hirsch, Naidoo, and Nxele, 2021).[3] The necessary condition for investment comprises deals with credible politically influential parties. This study explores the ways in which credible commitment can be formed for continuing investments. The empirical strategy to unearth the dynamics of this tension consists of selected case studies of different partners and different patterns of BEE deals and their investment consequences in platinum mining.

The study will argue that, empirically, there are different ways of approaching the imperative of elite transformation, broadly ranging between farsighted patient capital on one end, and predatory capital on the other end. This variation in capital (i.e., the patient-predatory capital spectrum) empirically manifests in pockets of investment and transformation at one end, and predation and asset stripping at the other end. This reading of investment and transformation outcomes in the past three decades in South Africa contributes to learning about the processes that reconcile racial allocation of rents with investment growth, and the processes that lead to endemic uncertainty.

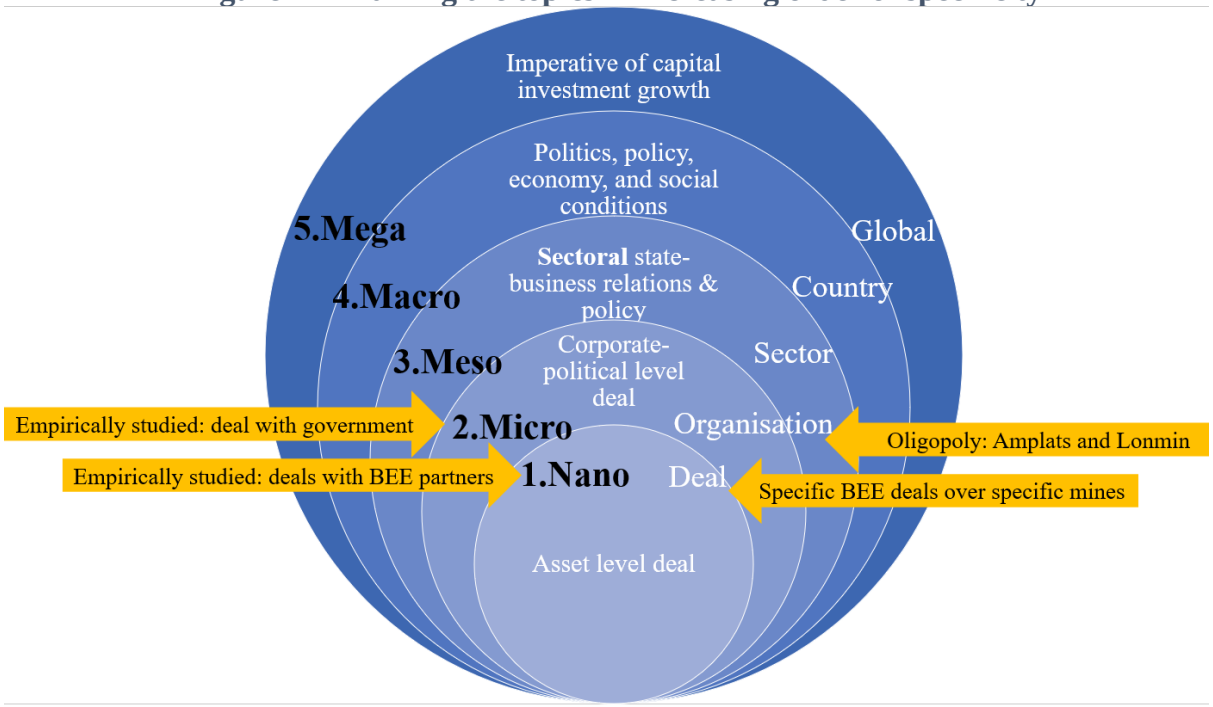
The research question and the hypothesis are framed within the literature on the political economy of state-business relations in developing countries, together with literature on political settlements, institutional economics or transaction economics, and the political determinants of investment. The question and the hypothesis have determined the scope and parameters of the project. While Part I of the PhD examines the role of deals or "elite bargains" between economic and political leadership in South Africa in the context of the elite transformation project, what the PhD does not do is to explore other determinants of investment or evaluate the broader political settlement of South Africa, including the role of powerful actors such as unions or civil society. Nor does it examine South Africa's industrial policy or BEE deals through alternative dimensions such as financing structures. The study is embedded in the action arena of BEE ownership deals in relation to their role in spurring investment and transformation on the one hand, and collusive rent-seeking and failures on the other hand. The study does not examine the broader policy elements of BEE.

[3] Attempting to cover every contingency with a rule is a very high transactions cost endeavour.

1.1.2. The context and the case study

Explaining the case study can be challenging because of multiple interrelated issues. To achieve clarity, this study arranges framing topics into overlapping levels, in increasing order of specificity, from the mega level to the nano level. The mega level pertains to issues that concern all countries, such as the need for capital investment growth. The macro level refers to country level or country specific issues or dynamics, such as South Africa's specific politics, policy such as BEE, and economic structure. The meso level refers to sector and industry issues or dynamics, such as the mining sector, or the platinum mining industry. The micro level refers to interactions at the organisational level, such as an interaction between one company and another, or with a government department (i.e., corporate-political level deals). Finally, the nano level refers to the asset level, the lowest level of the case study (i.e., asset level deals). This framing is visually presented in Figure 1 below, showing both the different levels and the overlap between the levels. The rest of this chapter, and the following theoretical framework chapter, use this organisation for coherence and clarity.

Figure 1 – Framing the topics in increasing order of specificity



Source: Author

Capital investment performance as well as elite transformation are overarching imperatives common across countries: these are the mega level issues. From a case study perspective, at the mega level, South Africa is a case that presents a country that has suffered from low capital investment for three decades into democracy, low economic growth rate averaging 2.42 per cent

per annum between 1994 and 2021 (World Bank, 2021), and is the most unequal country in the world in 2022 (World Bank, 2022).

More specifically, South Africa is an upper middle income country, with relatively robust universal rule of law, and good checks and balances (Levy, Hirsch & Woolard, 2014). Politically, it is a multi-party democracy that for the past three decades has been ruled by a dominant political party, the African National Congress (ANC) (Hirsch & Levy, 2018). The ANC has become increasingly fragmented, riddled by factional battles corresponding to differences in ideology, differences in relationship to business and property rights (i.e., cooperative versus collusive relationships), and fractures between developmental insiders and interests versus predatory insiders and interests (Levy, Hirsch, Naidoo, and Nxele, 2021). From an investment perspective, the credible commitment problem arises from residual political and bureaucratic uncertainty, despite the robust rule of law. This is one of the main arguments arising from the hypothesis.

Coming down to the meso level, the hypothesis is explored using the mining sector as a case study, which was the first and largest target of accumulation for elite transformation (Theobald et al., 2015). More specifically, the PhD isolates the platinum mining industry, which served as a new source of investment expansion and rent accumulation between 1994 and 2018.[4] This is because platinum mining is a sunrise industry in South Africa, relative to old and shrinking gold, diamond, and coal mining industries. By choosing the platinum mining industry, and focusing on one industry rather than two or more, the study manages to control for industry and type of commodity specific factors. Within platinum mining, 90 per cent of production is explained by four incumbent mining companies: Anglo American Platinum (Amplats), Impala Platinum (Implats), Lonmin, and Northam. The remaining 10 per cent is shared between several junior mining companies. This study will provide an overview of the entire platinum mining complex in Chapter 4. Thereafter, it will explore the hypothesis using the case studies of Amplats and Lonmin. Together, these two companies account for about 65 per cent of platinum mining during the period under study. The study will also show that these companies provide sufficient variation in corporate strategies, deals, investment, and transformation to provide an analytical platform for exploring Part I's hypotheses.[5]

[4] The period between 1994 and 2018 is the period under study. However, the research will refer to and discuss post 2018 details to keep the study updated as close to 2022 (the time of completion of this project) as possible.
[5] The full PhD included Northam as well. However, due to the limits on the number of words of the PhD, this case study has been reserved as a post-doctoral output. This point is repeated throughout the PhD, especially where the Northam case would have been a useful reference.

More specifically, the study drills down from the overall picture that South Africa has low capital investment (Fedderke, 2009) – for South Africa missed the 2000s commodity price boom (Morris, Kaplinsky & Kaplan, 2012) – to examine variation in mining performance at the company level and deal level. Each company dealt with the problem of credible commitment differently, crafted different legitimating deals with government and different deals with different BEE partners. Consequently, investment and transformation outcomes differed at the deal level of study (micro and nano level). Therefore, in terms of the units of analysis, there are two incumbent firms (I-firms or I-partners) studied: Amplats and Lonmin, each studied in Section B and Section C respectively (and Amplats/Communities in Section D). These I-firms differ in their corporate strategies, or in their orientation along a spectrum that ranges from patience to predation – the "patience-predation spectrum". As such, I-firms will differ in the deals they craft with government and with BEE partners. Government is assumed to be committed to transformation, but also fragmented in ways that make it possible for some I-firms to conclude transformative deals, and others to conclude collusive deals with government.[6] The lines between government and ruling party are also often blurred and therefore used synonymously. The second set of cases are the BEE partners (E-firms or E-partners) that are co-opted by each of the incumbent firms.

The BEE partners also differ in their corporate strategies along the patience-predation spectrum. Because each I-firm undertakes several deals to meet the demands of BEE, there are several BEE actors that feature in each of the two incumbent case studies of deals and investment performance. For each I-firm, there are two chapters. The first chapter provides an analytic historical narrative of the I-firm and of one prominent BEE partner. The purpose of this chapter is to surface the character and corporate strategy of the I-firm. Also, the purpose is to surface the character and corporate strategy of its most prominent BEE partner. The second chapter then delves into all the deals undertaken by the I-firm: first the deal with government that provides an overarching deal of cooperation, then the deals with different BEE partners. Therefore, the second chapter per I-firm provides variation of deals by the type of deal with government, and by the type of BEE partners. These case studies are summarised in Table 1, noting that Part I of the PhD is structured according to the incumbent firms.

[6] In other words, government is double faced. There are G-patient and G-predatory persons or groups within government, depending on who you access in government.

Table 1 – Platinum mining case studies

Section in PhD	I-firm	I-firm type of capital (finding)	E-firm and type of capital
Section B	**Amplats (Anglo)** **1.**What kind of capital is Amplats and how does its history of corporate strategies reveal this character? **2.Managing expropriation risk:** Empirically studying Amplats' deals, and evaluating outcomes of investment and transformation	Patient	**African Rainbow Minerals** (patient), **Pelawan** (opportunistic), **Khumama** (opportunistic)
Section C	**Lonmin (Lonrho)** **1.**What kind of capital is Lonmin and how does its history of corporate strategies reveal this character? **2. Managing expropriation risk:** Empirically studying Lonmin's deals, and evaluating outcomes of investment and transformation	Opportunistic	**Incwala** (extension of Lonmin), **Shanduka** (opportunistic)
Section D	**Amplats (Anglo) and Communities** **1.**Who are the Royal Bafokeng mining community and who are the Bakgatla ba Kgafela mining community and what kind of leadership presides over them from a commercial/capital spectrum perspective? **2. Managing expropriation risk:** Empirically studying Amplats' deals with the Bafokeng and the Bakgatla as BEE partners, and evaluating outcomes of investment and transformation	Patient	Communities: **Leadership of Royal Bafokeng** (patient) **Leadership of Bakgatla ba Kgafela** (opportunistic)

Source: Author. Note that under Section B, Amplats' deals with entrant international capital are also studied.

Mining is a particularly useful case study not only because of its importance to the historical and current economic development of South Africa, but because it is a case of contentious property rights and a case of large irreversible capital investment. Between 1998 and 2004, South Africa's ANC-led government issued legislation that entrenched BEE, and simultaneously gave effect to the nationalisation of mineral rights ownership (Capps, 2012). The aim was to facilitate the transfer of a quarter of ownership of mining houses to black elites (Capps & Mnwana, 2015). This nationalisation of mineral rights changed the system of property rights in mining insofar as it undermined the viability of mining incumbents at the time. This historical moment was the ANC's attempt to begin building a black business class that would ideologically be the patriotic drivers of industry. The inherent tension, however, was the need to attract large amounts of investment in an inherently capital-intensive industry to sustain the inclusion of an entrant elite (Nxele, 2022).

The nationalisation of mining rights, however, created a threat of expropriation, not just in the immediate, but also of different forms of expropriation in the future. Within the ANC there was a big debate and move towards the nationalisation of mining assets leading up to its 2012 conference. There have been several other issues such as the "once empowered, always empowered" problem, topical since 2014 when the government pushed for further rounds of black empowerment in the industry for companies whose BEE partners had cashed out of deals, leaving incumbent companies "uncompliant". This meant existing shareholders would need to

be further diluted, further raising uncertainty in the industry.[7] Overall, the question of variants of expropriation transmitted through rules remains a real threat to business, especially given the political problem of stubborn, racially based inequality in the private sector.

The micro-level cases explore how each of the I-firms managed expropriation risk in their relations with government. All the I-firms studied had to engage with government in the process of negotiating the security of tenure of their properties. Given the variation of the I-firms along a patient-predatory capital spectrum, what kind of deals were concluded with government that signalled cooperation and managed the risk of expropriation? Finally, the nano level cases include partnerships and deals at specific mines. These are sources of variation within I-firms, and between BEE partnerships in the platinum industry. Ultimately, the main outcome variables of interests are tangible shaft-sinking investments, and tangible transformation in the form of productive black owned enterprises.

Having clearly outlined the research purpose, the rest of this chapter elaborates the dynamics of racially transforming the elite class in South Africa: how this process is embedded in state-business relations, and how the process has unfolded in the mining sector. Following the multi-level framework, Section 1.2. discusses the South African specific problem necessitating elite transformation (the macro level). Thereafter, Section 1.3. reviews the literature of state-business relations at a country level in relation to elite bargains (also at macro level). Next, Section 1.4. moves to the sector level to discuss the process of implementing elite transformation in the mining sector (the meso level). Finally, Section 1.5. discusses the problem of investment and the commitment problem at the sector level (the mega and meso level). The chapter concludes by clearly outlining the structure of Part I of the PhD in Section 1.6.

[7] This issue is discussed further in Chapter 11.

1.2. Macro level 1. The problem necessitating elite transformation in South Africa. Overview from the 1990s to 2018

The problem necessitating elite transformation (and more broadly, racial class transformation) in South Africa is that the transition to democracy did not simultaneously dismantle extreme, racially based economic inequality. Specifically, the ownership of the commanding heights of the economy has remained overwhelmingly with the white economic leadership.[8] On the other hand, the political leadership is historically disadvantaged, representing a constituency of historically oppressed black people – constituting about 80 per cent of the population.

The South African Presidency described this disjuncture as follows.

> One of South Africa's characteristics … is the fact that the political leadership in government is quite distinct in terms of race, culture, background and lifestyle from the economic leadership. This has had some benefit in that the political leadership is not beholden to an established "Old Boys Club". The disadvantage is that the kind of trust needed between the economic and political "elites" for high levels of investment was missing post-1994 South Africa (The Presidency, 2003: 111).

This "disjuncture between, on the one hand, a shift of political power from a white minority to the majority of citizens within a constitutional democracy and, on the other, a continued monopolisation of wealth by the white minority, [is] politically untenable" (Hirsch & Levy, 2018: 22). Clearly, the ownership question had to be addressed, but not without confronting a seemingly intractable dilemma. While the ownership status quo was a recipe for later political conflict and instability, efforts to transform it risked unleashing destabilising influences of their own. There was the risk of uncertainty regarding future prospects of a kind which could undercut private investment (Tangri & Southall, 2008). Moreover, "there was the risk that, as political leaders and their allies jockeyed for access to economic assets, the discretionary use of political power could become the order of the day, weakening state institutions more broadly" (Hirsch & Levy, 2018: 22).

There are several contributions in the literature which suggest that economic growth creates the climate within which transformation can be realised without this "jockeying for access to assets"

[8] Overtime, the composition of "white economic leadership" has changed in South Africa. This is due to the unbundling of several large conglomerates in the late 1990s, and due to the increasing ownership of firms by institutional investors. This contemporary trend of ownership patterns is discussed in Chapter 11 and included as planned post-doctoral research output in Chapter 14.

in ways that undermine investment (Mbeki, 2009; Turok, 2016; Jonas, 2018). However, economic growth, by itself, is unlikely to transform racial economic inequality. Deputy Minister of Finance between 2014 and 2016, Mcebisi Jonas, argues that economic growth without transformation will

> …reproduce and exacerbate inequalities which will make growth unsustainable. Transformation without net growth in investment and output will see unemployment and poverty increase and will over time reduce the fiscal redistribution capacity of the state. Reduced wealth will also increase elite conflict, making consensus more difficult to manage (Jonas, 2018: 15).

Therefore, the degree to which economic growth is inclusive matters, especially in the case of highly unequal South Africa.

Faced with the imperative for direct state involvement to create a black capitalist class, the ANC initiated a process of formalising empowerment deals by creating an official policy and legislation that aimed to "programmatise" and impersonalise black economic empowerment (Freund, 2007; Levy, Hirsch, Naidoo, and Nxele, 2021). As noted by Freund, the state would supposedly be developmental insofar as it envisaged the emergence of a developmentally oriented elite, which would "straddle the boundaries between the management ranks in the private sector, [and] the established bureaucracy and politicians" (Freund, 2007: 663). Thus, the ANC – particularly its leader Thabo Mbeki[9] who led the transformation project from its inception – initially envisioned that this black business class would be productive, complementing the state's pursuit of economic growth and development (IOL, 1999; Gumede, 2007).

Initially, there was a critical mass of support for the "disciplining" dimensions of the transformation agenda. However, there was a weaker and progressively declining embrace of aspects of transformation that provided pro-active support for building the capabilities needed for global competitiveness (Hirsch & Levy, 2018). This view is supported by Nxele (2021a), who argues that there was no internal logic built into BEE to create wealth and build capabilities. There were no requirements or incentives to build productive enterprises compatible with an effective industrial policy of building firm capabilities, creating knowledge spill-overs, technological upgrading and demonstration effects (Sen, 2015). On the contrary, the transformation agenda emphasised crafting and enforcing rules of consumerist equity transfers

[9] Thabo Mbeki was deputy president of South Africa from 1994 and was president from 1999 until 2008.

that of themselves would provide few developmental benefits.[10] Moreover, the assumption was that the economic leadership would comply, that investment would continue, and the outcome would be a progressive restructuring of the economy run by an increasing share of productive black enterprises. Thus, there was an emphasis on more rules on paper with the hope that these would translate into transformation (Pityana, 2015).

In reality, the broad spectrum of policies addressing transformation, including BEE and labour laws, did not achieve the envisaged system of rules which would manage expectations. Instead, the process created uncertainty because there were frequent and increasingly serious disagreements between economic incumbents and the government about the content of policy to effect transformation. Further the uncertainty stemmed from the unpredictable and discretionary nature of when government would gazette the changing rules. This uncertainty, and the insider status of some entrant elites who could influence the process, created the conditions mainly for collusive deals and opportunism. This all unfolded in the shadow of a relatively robust rule of law. Consequently, instead of igniting a sustained virtuous circle of rising productivity and competitiveness, "South Africa's political economy became seemingly mired in a combination of economic stagnation and the strengthening over time of forces with interests antithetical to productivity-driven growth" (Hirsch & Levy, 2018: 4). In other words, the process of codifying empowerment deals led to unintended consequences antithetical to development (Williamson, 2009), such as increasing uncertainty and fractured business state relations.

The racial class transformation project consequently did not coincide with good-enough growth in investment (discussed below). Instead, the political economy became riddled with credible commitment problems. In other words, there was no sufficiently robust pact between the political elite and economic elite to collaborate on a set of mutually beneficial initiatives that would inject dynamism and growth over the medium to long term. This PhD departs from the "more rules" approach thus far pursued in South Africa. The hypothesis of this study is that in such an environment, the way forward is not merely crafting more rules, but complementing South Africa's "good-enough" framework of rules by crafting good deals. As this study will demonstrate, good deals can establish and sustain credible commitment around a set of investments which have better chances of creating black owned productive enterprises.

[10] The Black Economic Empowerment Act (of 2003) contains rules that not only deal with ownership, but also with racial representation at different levels of management, and other affirmative action rules. The focus of this present study is on elite deals: these mainly focus on the question of ownership, and secondarily on board representation.

1.3. Macro level 2. The literature on business state relations and deals versus rules

The preceding discussion suggests that the project of transformation – and the associated crafting of rules and deals – unfolds within state-business relations. At the heart of transformation are the relations between the ruling political coalition and government ("the state"), and business. The literature has extensively documented the important role of state-business relations in the process of reform, and the development consequences springing from this relationship (Pritchett & Werker, 2012; Sen, 2013b; Hallward-Driemeier & Pritchett, 2015; Sen, 2015; Schneider & Maxfield, 2018). The general agreement is that robust state-business relations can support a process of change and development through cooperation, coordination, and reciprocation (Kelsall, 2013; Hickey, Sen & Bukenya, 2017). However, where the relations are fragmented, this leads to defection from agreements and creates room for opportunism (Ramseyer, 1991).

Importantly for this study, the term "state-business relations" does not denote one coherent group of business, and one coherent government or ruling political party. In reality, there are fractures within these entities that enable different kinds of deals with different kinds of principals (Bai, Hsieh & Song, 2020). In turn, this presents two important sources of variation. First, this makes possible variation in interests of both the business and political leadership along a spectrum from developmental to predatory interests (Levy, 2014). Second, and therefore, this makes possible variation in the orientation or quality of deals vis-à-vis investment and transformation. Some deals may be crafted in ways that are compatible with the "spirit" of rules and transformation, while others circumvent or undermine those rules to serve short term gains. In other words, there are good state-business relations that are compatible with a growth-enhancing trajectory, and there are poor state-business relations that are incompatible with economic development. These varying state-business relations can exist within one country, making it possible to have "micro business climates" of investment performance and transformation by province, by sector, by firm, resulting in pockets of excellence within the overall low investment story (Levy, 2014; Hallward-Driemeier & Pritchett, 2015; Bai, Hsieh & Song, 2020).

There is evidence that good or effective state-business relations contribute to economic growth, increasing investment, and increasing productivity (te Velde, 2009, 2013; Sen, 2013b,a, 2015; Lemma & te Velde, 2017). For state-business relations to be characterised as robust, amongst other factors, they need to be underpinned by the state's credible commitment to policies, deals, or agreements (Sen, 2015). When state-business relations are collusive or predatory, they are

characterised by rent-seeking relations for personal gain at the cost of collective goals of economic development and transformation (Sen, 2015; Schneider & Maxfield, 2018). Even when there are agreements between state and business, either party can defect from said agreements. For example, the ruling political coalition or political party could either seek to transform business or seek to prey on business for its own private ends. Business, on the other hand, could seek to cooperate with the project of transformation as part of their corporate strategy, or may seek to evade the project, consistent with their corporate strategy. Therefore, political economies can have collusive, effective, or fractured state-business relations. The relative proportion of effective versus collusive state-business groupings has implications for policy and development outcomes.

The differences of one grouping or coalition from the other is related to the economic ideology of each group and the associated differences about how to achieve accumulation and transformation (Hickey, 2008; Mehta & Walton, 2014). Kohli (2012) and Chandra & Walton (2020) give the example of early 1980s India, where prime minister Indira Gandhi built an alliance between the political and economic elites around economic growth, with a strong emphasis on bringing into close relationship productive industrialists. This example demonstrates the crafting of state-business relations through a selective process, where the commitment to economic growth of the Gandhi-led coalition brought credibility to state-business agreements (Sen, 2015). The differences in state-business relations within a country or a sector are empirically exploitable for research purposes, to understand how these differences materialise in reality and importantly, to ascertain how to encourage productive state-business relations.

Where there are state-business relations, there are rules and there are deals that may be associated with rent creation and rent sharing on an explicit or implicit contractual basis (Chandra & Walton, 2020).[11] Sen (2015) argues that in low income countries or weak governance environments, regulatory reforms that stress the creation of formal "arms-length" relationships between the state and investors inhibit the emergence of effective state-business relations, when informal "hand-in-hand" relationships may be more effective. In other words, the stability of a deal, in such contexts, is not established by codifying rules, but by forming deals of mutual interest through relationship (Hallward-Driemeier & Pritchett, 2015). Narrow emphasis on rules might, on the contrary, have little impact on changing the *de facto* investment environment or

[11] This blend of rules and deals varies between countries, and there is heterogeneity of regulatory compliance by country and sector (Hallward-Driemeier & Pritchett, 2011).

alienate investors (Pritchett & Werker, 2012; Sen, 2015; Kar et al., 2019). Alternatively, the rules can create a space for "black market" type of deals that circumvent rules entirely (Stone, Levy & Paredes, 1992; Hallward-Driemeier, Khun-Jush & Pritchett, 2010).

How did the project of racial elite transformation get underway in the context of fragmented state-business relations in early democratic South Africa? The following subsection outlines this process and therefore lays the foundation for the rest of the research study.

1.4. Meso level. Elite transformation in mining

"*Transformation is not a zero-sum game.*" (National Treasury of South Africa, 2017: 2)

"*Transformation is not about compliance*." (Anglo American Corporation, 2019)

The early 1990s saw the beginnings of efforts to racially transform the upper echelons of the white dominated Minerals, Energy, and Finance complex (MEFC)[12]. The process was initiated by incumbent capital, such as finance and insurance house SANLAM, and mining house Anglo American Corporation. "In a common scenario, established elites would transfer (usually minority) shareholdings in large companies to a consortium of black investors, paid for with debt that would be wound down as dividends flowed in" (Levy, Hirsch, Naidoo, and Nxele, 2021: 23). However, the 1997 Asian financial crisis led to a stock market crash on the Johannesburg Stock Exchange in October 1997 that annihilated BEE deals, most of which had relied on dividends from those stocks to repay the debt (Nxele, 2022). In response, ANC-allied black organised business, led by Cyril Ramaphosa, formed the Black Economic Empowerment Commission (BEECom) in 1998.[13] Its aim was to systematically facilitate the entrance of black capital into business through the creation of state policies that would serve this purpose. The idea was to take control of the black economic empowerment process that was, up to that point, at the whim of economic incumbents. The initiative was strongly supported by the ANC. The commission reported on the status of participation of black people in the private sector, noting, among other things, the low ownership of the mining industry by black people. Consequently, one of the first and main outcomes of the commission's report was a resolution to be adopted by the government that

[12] The MEFC refers to a historical system of capital accumulation in South Africa that has concentrated around mining, energy, and finance (Fine & Rustomjee, 2019).
[13] At the time of writing, Cyril Ramaphosa is the president of South Africa and the president of the ruling national party, the ANC. The research presents Ramaphosa as a case study in Section C (Chapter 7 and 8).

> …the state is seeking the return of private mineral rights to the government, in line with the rest of the world. Government's long-term objective is for all mineral rights to [vest] in the State for the benefit of and on behalf of all the people in South Africa…. The right to prospect and to mine for all minerals will vest in the State (BEECom, 2001: 65).

In 1998, the cabinet approved the White Paper on Minerals and Mining Policy for South Africa, published as the Mineral and Petroleum Resources Development Act (MPRDA) in 2002 and accompanied by iterative mining industry charters. Since 2004, these charters have set out the framework, targets and timetables for transforming the ownership of the industry. This new development eradicated the system of old order rights that enabled the private ownership of mineral rights. In essence, the state was nationalising the mineral rights and setting out new rules of the game for securing mineral rights. In addition, government published the Broad-based Black Economic Empowerment Act 53 of 2003 (BEE Act) that formalised transformation requirements in the private sector.

From an incumbent mining capital perspective, rule-based empowerment did not resolve the underlying problem of insecure mineral rights. The nationalisation of mineral rights created the need for predictable government decisions relating to mining policy. In other words, "formalism alone could not be a sufficient condition for success: rules cannot be written to cover every contingency" (Levy, Hirsch, Naidoo, and Nxele, 2021: 22). Therefore, incumbent capital was facing a major problem of uncertainty even with rules on paper. The economic elite could not know with any degree of certainty the content of government policies in the future – including the discretionary power of granting and revoking mineral rights. In addition, the economic elite could not underestimate the incentive of the political elite to revisit and revise the nationalisation experiment in its favour.

As will be seen throughout this study, the formalisation of the black empowerment process not only created uncertainty, but also created opportunities for dealmaking with varying outcomes in investment and transformation success. Specifically, deals with the entrant black capitalist class became the locus of action. Just as the economic elite were not homogenous in their corporate strategy and their devotion to patient investment and transformation in South Africa, so too were "the black capital class" a fractured class with differing motives. In a spectrum from developmental to predatory, some entrants had the resolve to become productive black entrepreneurs who would build productive enterprises, while others wanted to accumulate personal riches without developing productive capabilities (Jordan, 2014; Turok, 2016;

Motlanthe, 2017). These differences in motives translated into differing deals delivering varying degrees of credible commitment between business and the state. Pritchett, Sen & Werker (2017) refer to this variation in deals as the difference between ordered deals and disordered deals deals (See Chapter 2).

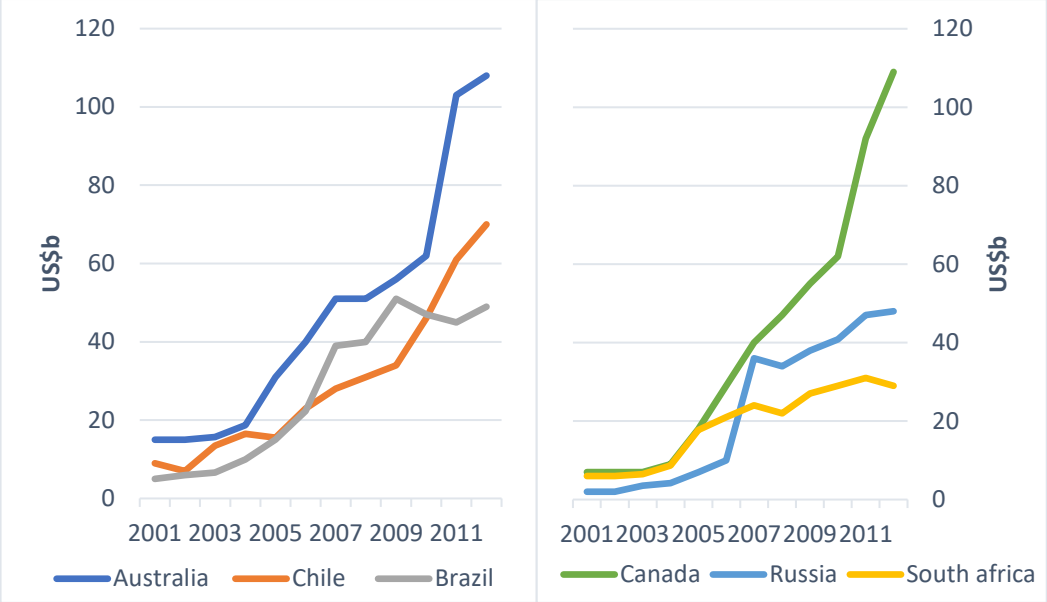
Variation in the patience and method of accumulation of capitalists created divergent paths to elite transformation. On the patient-predatory spectrum, predatory capital is shortsighted, and lacks the wherewithal to craft deals that can create productive enterprises able to compete in the market economy. Patient capital can create robust partnerships that resolve the credible commitment problem by crafting deals that can reconcile interests with a bottom line of successful, profitable investment. This spectrum is at the heart of the rules-deals hypothesis.

What did this dilemma of rules and deals mean for investment performance? The following section discusses how the rules-deals game played out in terms of investment at the aggregate sectoral level.

1.5. Mega and Meso level. Investment and the commitment problem. The case of mining

In the mining sector the economic consequences of the process of elite transformation have been unambiguous. Efforts to introduce BEE ratcheted up uncertainty, with the result that "between 2001 and 2008, the longest sustained commodity boom in recent history, South Africa's mining industry [GDP] contracted at a rate of 1% per year, while its closest competitors grew at an average rate of 5% per year" (Rossouw & Baxter, 2011: 511). This poor outcome happened despite a 2010 valuation by Citigroup of South Africa's proven mineral resource wealth at US$2.5 trillion, the largest in the world. Comparable countries, in descending order of mineral value, are Russia (US$1.65 trillion), Australia (US$1.6 trillion), Canada (US$1 trillion), Brazil (US$0.70 trillion), China (US$0.68 trillion), and Chile (US$0.65 trillion) (Mintek & Jones, 2017).

Figure 2 – Mineral investment projects in major mining countries, 2001-2012



Source: Nedbank Group Economic Unit (2017)

Figure 2 shows that between 2001 and 2012 – the period of the commodity price boom – South Africa evidently failed to attract investment projects proportional to its mineral value size and diversity of mineral resources. This underperformance in investment directly explains the annual average contraction in mining's contribution to GDP.

Figure 3 – On the media: Rules, Deals, Investment

Sources: Creamer (2018a), Makhanya (2018), McKay (2018), Ryan (2018), Whitfield (2018), Mathews (2019).

The process of converting "old order" to "new order" mineral rights proved to be rife with ambiguity and scope for ministerial discretion as to what entailed a BEE-compliant conversion. This created confusion and an environment of uncertainty, captured in the local media as presented by Figure 3. This had direct implications for investment. Transactions in mining happen over many years, and as stated by North, the inherent risk of opportunistic behaviour to expropriate looms large (North, 1981). This dilemma describes the basic problem called the "obsolescing bargain" first introduced by Vernon (1971) in the business school literature, or the "credible commitment" problem described in transaction cost economics literature (North, 1981; Haber, Razo & Maurer, 2003). The more an investor sinks capital in developing or expanding a mine, the more the investor becomes captive to the government. Government, in turn, has discretion in policymaking, even in the context of a relatively robust universal rule of law.

Every investor could comply with the rules – and indeed there was compliance with the rules – but solving the credible commitment problem boiled down to deals: the quality of the deals over time in a multi-rounds game of BEE. Thus, even if the overall picture of "South Africa missed the commodity boom" is accurate, this still does not account for the variation in performance at the firm and mine level.

Having surfaced the issues and reviewed the literature on the problem and necessity of reconciling capital investment growth with elite transformation, Part I of the PhD progresses to the theory and empirical case studies. The flow of the structure is outlined below.

1.6. Structure of Part I of the PhD

Part I of the PhD is structured in five Sections. Section A consists of four chapters. Chapter 1 is the introduction. Chapter 2 develops the theoretical framework. Chapter 3 outlines the research methodology and methods. Chapter 4 provides an overview of the platinum mining industry and the empirical patterns of deals and investments that form the basis of the hypothesis and inquiry.

Section B is the case study of Amplats (and its parent, Anglo) as a patient I-firm, consisting of Chapter 5 and 6. Chapter 5 is an analytic historical narrative that traces the corporate strategies of Amplats and its prominent BEE partner, African Rainbow Minerals (ARM). An important output of this chapter is the differentiation of Amplats and ARM along the patient-predatory capital spectrum in terms of their observable corporate strategies. Having surfaced the type of capital that Amplats is, Chapter 6 investigates the nature and evolution of Amplats' deals to manage expropriation risk, first with the government to signal cooperation, then with black entrant firms at the asset level. For each of the deals, this chapter presents and evaluates the direct outcomes of capital investment and transformation over time.

In Section C, Chapters 7 and 8 comprise the case study of Lonmin (and its parent, Lonrho) as an opportunistic I-firm. The structure is similar to Section B. Chapter 7 is an analytic narrative of the corporate strategy of Lonmin and its prominent BEE partner, Shanduka. Having characterised the two firms, Chapter 8 investigates Lonmin's deals at the firm-government level, then at the level of assets. The outcomes in terms of investment and transformation in the opportunistic world are presented and evaluated.

Section D (Chapter 9 and 10) is the case study of platinum-rich land-owning communities, the Royal Bafokeng and the Bakgatla ba Kgafela. This is an extension of the Amplats section but separated to surface the stories of corporatised mining communities in BEE deals. The leadership of the communities differs along the patient-predatory capital spectrum. Chapter 9 documents the history and evolution of the two communities to the present day BEE partners they have become. Chapter 10 documents their deals with Amplats and traces the investment and transformation outcomes.

Section E (Chapter 11) is the discussion of findings of Part I. The chapter reflects on the hypothesis in relation to how it helps explain investment performance and transformation in South Africa's mining industry from 1994 to 2018. The chapter reflects on the project of elite transformation through the question: "what are the concrete possibilities to build investment, given the findings?"

CHAPTER 2 Theoretical framework of the political economy of private irreversible investment and elite transformation

This chapter adopts the multi-level framework introduced in Chapter 1 to develop the theoretical framework. The chapter begins with a summary of the story.

Summary of the process or game being theorised

The purpose of Part I is to study variation in fixed investment performance and variation in elite transformation at the level of deals. A deal is ultimately an institutional arrangement that varies in its strength to "structure human interaction" based on the key ingredients that make up a deal: the partners and the robustness of the deal. This is directly linked to the theory of credible commitment, which is the underlying purpose of institutional arrangements: investors seek to secure some certainty in the transaction, so they seek to establish some predictability in the rules and the behaviours of counterparts (North, 1993). The study also relates to the theory of irreversible investment under uncertainty, which emphasises the impact of uncertainty on investment and capital-stock accumulation.

The main idea is that empowerment deals are responses by incumbent white capital (incumbents or I-firms) to a game that requires them to strike deals and maximise their economic objective: secure assets and appropriate returns under some credible certainty. In playing this game, the incumbent could be playing a long game – patient capital, or an opportunistic game – opportunistic or predatory capital. Depending on this orientation of the I-firm, it will seek to strike a deal on two levels. First, it will seek a deal with government, referred to as the corporate-political level deal or I-firm-government deal. The deal sought would either be a collusive deal if the I-firm is predatory, or a developmental, transformative deal if the I-firm is patient. This is possible because government has both developmental and predatory leaders. Second, it will seek deals with a suite of politically influential black elites at the asset level. The asset level deals constitute empowerment transactions. This structure of the two-level deals arises from South Africa's governance framework, as follows. First, the government or ruling political party is the political power, thus I-firms ordinarily seek to craft explicit deals with the government that signal cooperation. Second, the rule of law and the rule by law creates a level of rules that I-firms need to manage by using BEE deals strategically.

In turn, black elites (entrants or E-firms) – mainly politically connected – have an incentive to get into deals to accumulate wealth and will self-select themselves systematically to incumbents compatible with their maximising strategy. That is, entrants also fall on the capital spectrum as patient on one end, and predatory at the other extreme. Thus, each incumbent faces a decision to partner with an entrant they best believe will be compatible with their corporate strategy of "playing the game". Each entrant will seek an incumbent that will correspond to their preferred means of accumulation: productive joint ventures (JVs) versus speculative, frontloaded deals. Therefore, the partnerships will tend to be non-random.

Additional reasons for this non-randomness include political factions within the ruling party. In a personalised, elitist political settlement such as South Africa, ruling party personalities matter, creating an "insider" and "outsider" typology of access to state favours such as protections and enforcement. If this is the case, partnerships that rely heavily on factional changes within the ruling party will be more fragile than partnerships that are arm's length but which the ruling party deems legitimate on other criteria such as race, community stakeholder, influential union, and organised black business that supports the ruling party.

In this game, deals are dynamic because political factions and market conditions change over time, and partnerships can thus be revised based on deals that collapse versus deals that remain robust. Therefore, this is an iterative game with multiple rounds where partners have the option to remain in a deal or to exit. The expectation is that deals that are robust over time, mainly because they are structured in a way that reflects farsightedness and patience, will result in high and sustained investment. Deals that are fragile because they lean on speculative short-sighted strategies will either result in collapsed deals, or at best, result in poor performance in fixed investment. Given that South Africa displayed significantly less than its potential for fixed investment through the commodity boom period, the expectation is that there will be variation of success of deals, with more deals reflecting poor partnerships and failed deals. These poor partnerships, by definition, reflect poor quality deals.

2.1. Mega theory (global). Fixed capital accumulation and credible commitment

The investment rate in the physical capital stock has been documented in the literature as a core determinant of long-run economic growth (Fedderke, 2005). This includes classical theories of economic growth such as Solow (1956) and modern endogenous theories of economic growth such as Romer (1986, 1990). Empirical research confirms the centrality of the investment rate in physical capital as the key engine of long-run gains in per capita real output (Levine & Renelt, 1992; Fedderke, 2004, 2005). Fedderke (2005) found that in the South African context, the contribution of capital was the dominant source of economic growth in the 1970-80 period, and the second most important source in the 1990s, after total factor productivity. Moreover, he found that the decline in the overall growth rate of real output is associated with the observed decline in the importance of capital as a factor of growth. Fedderke concluded by suggesting that a more in-depth look at investments in physical capital is needed for a fuller understanding of the growth puzzle of South Africa.

There are several drivers of investment in general, and in South Africa. These include stability of property rights, real GDP growth, increases in government investment, improvements in financial intermediation, rule of law, and infrastructure (Wai & Wong, 1982; Porter & Stern, 2001; Fedderke & Luiz, 2008). However, the modern theory of capital expenditure has focused on the impact of irreversibility and uncertainty (Abel & Eberly, 1999; Carruth, Dickerson & Henley, 2000; Arve, 2016). "Irreversibility…prevents the firm from divesting itself of capital stock, [so] that it may pay to wait before investing, since irreversibility attaches an opportunity cost to undertaking the investment expenditure now rather than in the future" (Fedderke & Luiz, 2005: 4). Irreversibility is a prominent feature of mining investment, which, combined with incomplete contracting, creates a pronounced credible commitment problem. The logic creating the problem is that sunk mining investment creates *ex post* quasi-rents (or returns) that need to be protected through *ex ante* contracting. Unless complete and enforceable contracts are available, the sunk investment may be appropriated by opportunists, such as government or other powerful actors (Rodrik & Zeckhauser, 1988; Rodrik, 2000; Wells, 2003). This problem of appropriability as relating to government opportunism or other political actors, in a partial-equilibrium setting (i.e., mining sector, *ceteris paribus*), leads to underinvestment in mining (Caballero & Hammour, 1996). The contracting problem is a micro and nano economic problem and will be outlined more carefully below.

Fedderke and Luiz (2005) develop a theoretical model of a firm's decision to invest under uncertainty and irreversibility. The authors show in their model that the firm will actively try to influence the variables and parameters that reduce uncertainty. Empirically, the authors find that net change in investment depends on a firms' ability to reduce the frictions associated with uncertainty. This research project uses a similar logic. According to the proposition in this PhD (Part I), the net change in investment will depend on the extent to which "good deals" outnumber "bad deals" both in number of deals and size of absolute investment. This is because differences in the quality of deals means differences in the degree to which uncertainty is managed. Considering the I-firms as the initial investors (they enter the "scene" first), the problem of uncertainty is confronted, empirically, through deals with (seemingly) strategic partners at that point in time. Thus, the methodology of the study is organised around collecting and analytically tracing the deals and their associated investment over time.

2.2. Macro theory (country). Political settlements, personalised institutions, and credible commitment

Investment, and the game of elite transformation, happens within a particular institutional and political configuration. These configurations are crucial in structuring incentives of the elite and influencing different trajectories of development (Kelsall et al., 2022). At a country level, a point of departure for developing a framework around which to study the interactions between elites and the consequent decisions on policy, investment, and transformation, lies in weaving together the conceptual frameworks of political settlements, institutions, rents, and rent-seeking and credible commitment. Together, these dimensions combine into a typological framework of different contexts, incentives, and distribution of rents (See Levy, 2014).[14] Following North, Wallis and Weingast (2009) and Levy (2014), the focus here is on how power and institutions interact with one another to produce varying platforms of micro and nano deals.

[14] There is a distinction between power and institutions (Kelsall & vom Hau, 2020). Kelsall et al. (2022) give detailed attention to the "power" aspects of political settlements. (Their work clarifies this distinction through questions such as: How broad is the social foundation of "insider" interests? How coherent is the exercise of power?). The theory of political settlements frames this work precisely because it surfaces the role of politics, enables a clear reading and application of the social foundations of societies (whether they are mainly elitist or participatory inclusive), and whether power is concentrated or dispersed, and among which actors or groups power is located, how much of that power, and how this might translate to rent appropriation and distribution. While the present formulation of the theoretical framework builds on earlier work in the literature, it is heavily guided by the thinking and logic of political settlements. Therefore, the theoretical framework in this work, and the empirical work, goes beyond the role of institutions to the role of power relations, but mainly within the narrow inter-elite sphere.

Institutions provide the framework within which human beings interact. They establish the cooperative and competitive relationships which constitute a society and more specifically an economic order (North, 1981). According to Acemoglu, Johnson & Robinson (2005), institutions can generally be split between economic institutions and political institutions. Economic institutions determine the incentives of and the constraints on economic actors, and shape economic outcomes. Because different groups and individuals typically benefit from different economic institutions, there is generally a conflict over choices of economic institutions, ultimately resolved in favour of groups with greater political power. The distribution of political power in society is in turn determined by political institutions and the distribution of resources. Political institutions allocate *de jure* political power, while groups with greater economic wherewithal typically possess greater *de facto* political power (Acemoglu, Johnson & Robinson, 2005). It is *de facto* power that is often essential for the determination of economic policies and the distribution of economic resources. This *de facto* power is possessed by groups as a result of their wealth, weapons, or the ability to solve the collective action problem (Williamson, 1994; Acemoglu & Robinson, 2008). Therefore, Acemoglu and Robinson argue, changes in political institutions do not necessarily lead to changes in economic institutions. In reality, elites have an incentive to invest in *de facto* political power to influence politics and policy. This means that economic institutions may persist even when political institutions change (Amsden, DiCaprio & Robinson, 2012).

In what political context, or social order, is this bargaining taking place between economic actors and political actors? North, Wallis & Weingast (2009) characterise developing countries as limited access orders (LAOs), where rents are maintained by insider elites who limit access by outsider organisations that can compete away the rents. The system not only permits rent seeking but requires it: "Limiting the ability to form contractual organisations only to members of the coalition ties the interests of powerful elites directly to the survival of the coalition, thus ensuring their continued cooperation within the coalition" (p. 17). The achievement of cooperation is predicated on internal balance of interests – what they call the double balance – between political power and economic power. This stability, or peace, is created by the rent-creation process. In the case of South Africa, the coalition between powerful political actors and powerful economic actors exemplifies this double balance. [15]

[15] The LAO framework has its limitations, which are addressed by the literature on political settlements, such as Khan, 2010; Kelsall, 2013; an Kelsall et al., 2022. A recent example of the limitation of the LAO framework is

Furthermore, LAOs are characterised by personal relationships, who one is and who one knows. This forms the basis of social organisation and constitutes the arena for individual interaction, particularly personal relationships among powerful individuals (North, Wallis & Weingast, 2009: 13). This personalised elite order becomes the basis of deal-making to secure property rights. That is, property rights can be specified and enforced as private goods. As summarised by Levy: "…property rights are not necessarily a public good, dependent on the full panoply of a justice system. Rather, they can be constructed in an *ad hoc*, targeted way – that is, they can be "privatised" (Levy, 2014: 184).

There is large variation across countries and over time in the extent to which property rights are privatised. In a classic study of early twentieth century Mexico, Haber et al. (2003) explore a context where property rights were wholly privatised; formal rule-boundedness was almost entirely absent. The commitment problem, in this case, is essentially a problem of deal *enforcement*. Specifically, in cases where the government is party to the deal, and because government does not have capacity for a universal enforcement of rules, the risk arises because "the government…will only enforce [selected property] rights when it is in its interest to do so" (Haber, Razo & Maurer, 2003: 18). In this case, credible commitment is ultimately about selective enforcement of property rights where the government and other sufficiently powerful actors have an interest. This argument by Haber et al. (2003) is based on the following four assumptions:

- Rather than provide universal enforcement of property rights, indiscriminate to the identity of asset holder, governments may instead choose to *enforce* property rights as a private good – selectively to specified groups – or may manipulate the level of enforcement to fit their needs
- Asset holders do not demand that the government protect everyone's property rights. In fact, asset holders care first and foremost about their own property rights
- Asset holders do not make binary choices between production and no production. They will tolerate a certain level of predation risk as long as they expect some positive level of profits in compensation

Ethiopia, where credible selective enforcement of property rights commitments (for national and international investors) helped stoke political upheaval because of the failure to enforce property rights commitments to non-elites (and at least where the ability of rival elites to threaten the prevailing political settlement owed a lot to their links to wider non-elites). Therefore, the approach is applied because of its power to surface the role of elite bargains, which are directly useful for a study on elite transformation. This is only part of the story, as exemplified by the Ethiopian example.

- There exist information asymmetries, as the private sector cannot perfectly monitor the impact of government's actions on their property rights

The argument by Haber et al. (2003) provides one way of privatising pockets of property rights that may provide a platform for economic activity in a weak governance setting. Important in this setting is that crafting political deals with powerful actors can provide a "good-enough" basis for securing property rights and investment, as is the case in early twentieth century Mexico. Haber et al.'s analysis of political level deals for the purpose of securing property rights will be instructive for this study, as will be explained shortly.

Contrary to early twentieth century Mexico, South Africa is not a case of a weak governance setting but is largely characterised by an enforceable specification of *de jure* property rights. However, even in such a context, the specification and allocation of property rights can be an insufficient basis for investment. Rules cannot be written to cover every contingency. Therefore, although the universal rule of law is important and helpful, it does not eliminate the discretion of government in making and changing rules relating to or directly affecting the security of property rights. This discretion creates the *ex post* risk: once an investor complies with all the rules, what eliminates the risk that government will change the rules again, rendering the investor uncompliant? This *ex post* risk, in the case of South Africa, arises within a personalised political settlement, where identities of the political leadership matter for protection against adverse actions of government. In this instance, the Haber et al. (2003) argument applies to the South African case in so far as it suggests that where there is residual political uncertainty arising from rules as incomplete contracts, there remains space for crafting investment seeking deals, deals that are the basis for credible commitment because they protect the property rights in question.

Even when deals are made at the political-corporate level, there remain *ex post* risks linked to opportunistic behaviour or changes in the configuration of political power (Williamson, 1999). This PhD argues that in the South African context with its strong rule of law, there remains *ex post* risk that is not resolved by the elaborate *de jure* rules framework. To complement this framework of rules, political-corporate level deals that signal cooperation with the objectives of the political leadership play an important role in building the confidence of asset holders – noting that the point of departure is South Africa's mining industry in the 1990s owned by a few large firms.[16] However, even this level of political deals may be insufficient to eliminate opportunism.

[16] Indeed, this feature is arguably applicable to the rest of South Africa's economy during this period (Fine & Rustomjee, 2019).

Therefore, a second level of deals that arises directly from the existence of a robust rule of law are deals at the asset level with politically influential partners. The political level deals can signal cooperation and win the investor space for existence, but they are not durable because politics is volatile. Getting closer to a state of "a complete contract" involves crafting asset-level deals that combine the commercial interests of investors with those of the politically connected entrant class.

Having established a distinction at the levels of deals, a further step is qualifying that deals can vary in their quality in terms of the extent to which a deal delivers credible commitment. Moreover, some deals can be crafted in ways that are compatible with social goals such as transformation, while some can be based on predation. In other words, it is not just about closing a deal, but about crafting good deals. Good political-corporate level deals lean towards cooperating on investment and transformation. Good deals at asset level involve a process of seeking "good" partners and entering into collaborative, risk-sharing deals. As argued by Williamson (1999), ultimately the mechanisms of cooperation rely on careful processes of crafting these arrangements, while courts intervene as a last resort. Therefore, this PhD builds on the South African case where, in the presence of a universal rule of law, pervasive uncertainty coupled with a personalised political settlement provide a platform for crafting selective deals that limit *ex post* risk and buttress continuous investment. In other words, this is a study of the potency of deals in the shadow of the law.

Finally, having built a country-level theoretical framework that analytically conjures the arena of action within which elite bargaining takes place, these "bargainings" can lead to different development trajectories that are either compatible with growth and development, or lead to stagnation. This depends on the nature of the bargaining process – the process of rent-seeking whereby resources are spent to secure economic rights that underpin rents. This process of rent-seeking, as outlined by Khan & Jomo (2000), varies in its methods and produces varying types of rents. The authors' study of Malaysia's racial elite transformation argues that the development story has involved a mix of value-enhancing rents and value-reducing rents.[17] The government intervention to redistribute wealth and create new opportunities for wealth accumulation produced a mixed corporate sector. There was a type of rentier-elite specialised in appropriating rents without any real production, and there was another type of rentier-elite which, though politically connected and economically powerful, was competent in production. The new Malay

[17] The PhD proposal included an overview of the Malaysian case. Due to word-count constraints, this overview was not included.

business community, in turn, includes a mix of those who have since developed independence from the state (towards market competition), and those who continue to cultivate and rely on political connections.

The above framework therefore sets up the contextual "arena of action" and its parameters. It explains how, theoretically, different paths of accumulation strategies can lead to a set of robust bargains compatible with investment or can follow the alternative path of stagnation or collapse. Moreover, the paths taken are themselves crafted or chosen systematically by the type of capital (patient versus predatory). But what might be these corporate strategies at the sector or company level, and what might individual level partnerships and deals look like? The last two subsections build on the mega and macro framework to construct a micro-nano framework to be operationalised in this research study.

2.3. Meso-micro theory (sector and oligopolies). Corporate strategies. How incumbent oligopolies manage credible commitment and investment in a changing, uncertain rules of transformation environment

"It is the corporate actors, the organisations that draw their power from persons and employ that power to corporate ends, that are the primary actors in the social structure of modern society" - Coleman, 1974, p. 49; in North, Wallis, & Weingast, 2009:1

The action or game of bargaining between established white economic actors and entrant political actors begins in the 1990s. All the incumbents – the white oligopoly companies – face the same political economy environment, including the rules for effecting elite transformation as described in the preceding sections. The empirical variation lies in the different corporate strategies of each I-firm, as first movers in the game (BEE partners, or E-firms, are discussed later). Specifically, corporate strategies respond on two levels to manage expropriation risk. The first level is the "big picture" political engagement with the ruling political class or party (i.e., broad signal of cooperation with new power). The second level is the rules, made implicitly and explicitly by the ruling political class (i.e., BEE level objectives). In these two levels resides the action of different deals, partnerships, and outcomes. This is the arena in which this study undertakes its empirical investigation. This subsection outlines the first level (engagement with the ruling political party, or meso-micro), while the next subsection outlines the second level (managing rules, or micro-nano).

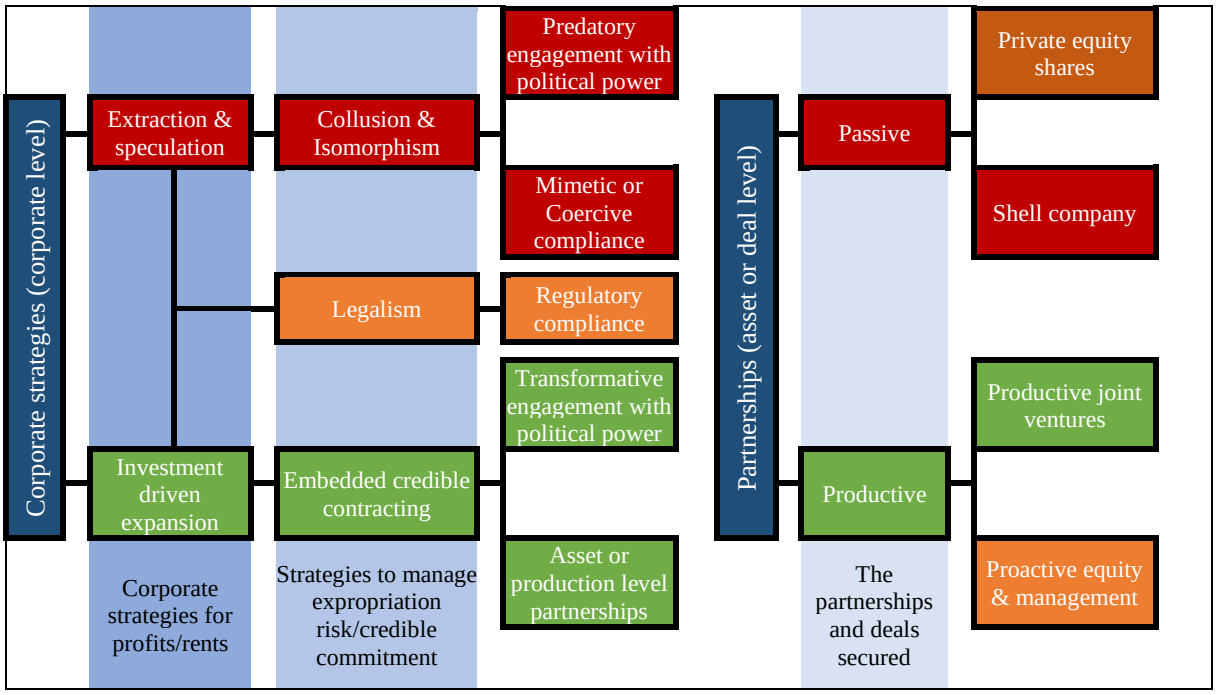
The South African economic structure in the 1990s was characterised by oligopolies: large conglomerates with significant power in the country. These companies each needed to craft corporate responses of interaction or engagement with the newly installed political ruling party which itself was a party with prominent personalities or insiders, and over time, factions. King et al., (2015) argue that the transition created a legitimisation process to which corporate entities responded through variants of isomorphism. This isomorphism entailed the restructuring of companies to attain legitimacy with the state, the new global corporate world, and society. When corporates are driven by political pressure, restructuring decisions such as unbundling to accommodate a black partner is coercive isomorphism (Scott, 2013; King et al., 2015).[18] When corporates are mainly driven by uncertainty and are concerned with restructuring to look like other legitimate corporations in the new institutional environment, they are engaging in mimetic isomorphism (Scott, 2013; King et al., 2015).[19]

This research adopts and extends this conceptual framework by distinguishing between isomorphism and transformation. In this study, transformation is defined as the process of building racially inclusive productive economic opportunities. This definition is consistent with the National Treasury's definition of transformation as a process that creates new resources and mobilises investment (National Treasury of South Africa, 2017: 1). Contrary to isomorphism as a reactive process of compliance or "fronting", transformation is a proactive process of internalising and/or institutionalising socio-economic redress in the corporate strategy and production process.[20]

The distinctions described above provide a typology that broadly differentiates between firms in terms of their (1) corporate strategies for appropriating rents or profits, and (2) strategies for managing expropriation risk. As will be shown, these differences matter in terms of whether the elite transformation game unfolds into investment and racially changing productive activity, or it turns out to be largely a game of rent-seeking collusive deals with little investment and transformation.

[18] "Coercive isomorphism relates to formal and informal pressures as a result of the legal and cultural expectations of the society in which an organisation operates that influence organisational behaviour and structure" (King et al., 2015: 339–340).
[19] "Mimetic isomorphism results from organisations modelling themselves on other organisations when there is environmental uncertainty. This relates to the cognitive legitimacy of comparable organisations providing templates for what is acceptable"(King et al., 2015: 340).
[20] "Fronting means a deliberate circumvention or attempted circumvention of the B-BBEE Act and the Codes. Fronting commonly involves reliance on data or claims of compliance based on misrepresentations of facts, whether made by the party claiming compliance or by any other person" (Department of Trade and Industry, n.d.).

Figure 4 – TYPOLOGY A: Variation of Corporate strategies and partnerships through time



Source: Author

Note: As discussed in the preceding section, the above diagram is embedded in a political and institutional environment.

Figure 4 (TYPOLOGY A) captures the typology of corporate strategies that are available to I-firms and lead to distinct or divergent trajectories. An I-firm has a corporate strategy for maximising profits/rents either through investment-driven expansion, or through extraction and speculation.[21] On the basis of that overarching strategy, I-firms craft their own approaches to manage expropriation risk.

(a) Investment-driven I-firms (patient by orientation) will craft engagements that resolve the commitment problem through "embedded credible contracting", and by implanting themselves in the changing political economy. This would mean undertaking both transformative engagement with political power and asset specific partnerships. If the I-firms only focus on engagement with the political class, this would make the deal vulnerable to changes in factions, similar to the condition described by Pritchett, Sen and Werker (2017) (See next section). If the I-firm only focuses on asset level partnerships, that may result in sufficiently stable deals for those assets in the context of a "good enough" rule of law, but not for broader expansion that requires a proactive signal of

[21] Extraction and speculation of the kind referred to by the literature as opportunistic and value-reducing (Khan & Jomo, 2000; Acemoglu & Robinson, 2008). For discussion on the rise of speculative activity (at the cost of productive activity) in South Africa, see (Karwowski, 2015, 2016).

cooperation. As will be detailed in Section B (Chapters 5 and 6), the empirical case of a patient, investment-driven firm is Amplats.

(b) Extraction and speculative I-firms (predatory by orientation) will resort to collusive political level deals and mimetic or coercive isomorphism in relation to rules.

   a. Collusive political deals essentially evade the imperative of investment and transformation by locking into personalised rent-seeking deals with equally opportunistic insider members of a political party or such similar arrangements. In terms of managing BEE rules, the predatory I-firm resorts to mimetic isomorphism at worst, and coercive isomorphism at best.
   b. Mimetic isomorphism mainly involves fronting – crafting ways to look transformed. This can entail almost a complete evasion of rules. In addition, this method does not require restructuring, because "window dressing" is sufficient and is linked to co-opted political principals or government officials.
   c. Coercive isomorphism is a corporate response of restructuring a business disingenuously to meet requirements technically, but not genuinely. This is an "artful engineering". As will be detailed in Section C (Chapter 7 and 8), an empirical case of this kind of I-firm is Lonmin, which split itself into two parts. Three quarters of itself was named Lonmin (the I-firm). One quarter of itself was named Incwala, supposedly the BEE partner. It then "bought" a substantial share of Incwala, and co-opted BEE beneficiaries to be part of Incwala. On paper, this method met the rules and Lonmin was internationally acclaimed for its transformation.

There is a third, "middle" route that an I-firm can take, which this study calls legalism. This is an inferior route to take for the investment driven I-firm, but an improves on the predatory I-firm.

(c) Legalism is a corporate response that focuses on regulatory compliance. The I-firm focuses only on the rules on paper and undertakes a tick-box exercise as sufficient for managing expropriation risk.[22]

Legalism or rule compliance is insufficient because rules are incomplete contracts. Rules are not self-formulating, self-determining, or self-enforcing (Ostrom, 2005). Ordinarily, investors would

[22] An empirical example is Gold Fields South Africa (Northam). As noted in Chapter 1 by footnote, the case study was omitted in consideration of the number of words of the PhD, reserved as a post-PhD publication.

thus seek to influence this process in ways that protect their investments, such as striking deals. The stability of rule-ordered relationships depends upon enforcement. Because enforcement is a moving target, there remains a gap to structure relationships around specific assets or transactions for mutual gain (i.e., deals). Transaction costs economics supports this conclusion.[23]

In summary, farsighted patient capital will respond transformatively through good deals with political power and like-minded business BEE partners at asset level. The middle range on the capital spectrum is an incumbent who, though might be investment driven, is unable to figure out the deals environment and focuses on regulatory compliance as sufficient to keep predation at bay. Finally, predatory capital can only respond collusively and isomorphically.

The expected outcomes of these corporate strategies (a, b, and c) are as follows:

(i) Collusion and isomorphism route

a. Unstable/vulnerable deals
b. The unstable deals are a function of changing political factions and opportunistic BEE partners; the I-firm is likely to attract opportunistic partners, either intentionally or unintentionally
c. Therefore, the result is likely a non-sustainable BEE trajectory, and may possibly turn to a predatory BEE trajectory, e.g., abusing state resources in the name of black empowerment
d. As a result, there will be low investment and poor transformation outcomes

(ii) **Transformative route**

a. Stable robust deals
b. The stable deals are a function of a good political-corporate deal that supports the aims of transformation, and are a function of good partners at asset levels, i.e., patient E-firms
c. Outcomes are therefore likely to be either (1) thriving or (2) good enough for credible commitment
d. This is a path of durable transformation

(iii) **Rules compliance route**

[23] Transaction cost economics concedes that comprehensive contracting is not a feasible option (by reason of bounded rationality), yet it maintains that many economic agents have the capacities both to learn and to look ahead, perceive hazards, and factor these back into the contractual relation, and thereafter to devise responsive institutions. In effect, transaction cost economics emphasises private ordering over legal centralism, and thus pushes contract law into the institutional background (Williamson, 1999; Ostrom, 2005).

a. Retaining reputation of illegitimacy
b. Ever incomplete rule compliance in the eyes of political leadership
c. Risks of co-opting opportunistic partners to comply with BEE, because of lack of interest in managing transformation as a long-term, credibility-building opportunity
d. Result is unresolved expropriation risk and below-potential investment if not low investment

In sum, Typology A generates theoretical characterisations or classifications of capital. It also generates behaviours that spring from this characterisation. Typology B in Section 2.4.3 below generates theoretical outcomes at the deal level. Before introducing Typology B, it is necessary to complete the framework by introducing the BEE-partners (the E-firms).

2.4. Micro-nano theory (corporate-political and mine-level partnership and deals). Variation in quality of deals and partnerships

"Contracts are meant to enshrine agreements in something like stone. But contracts covering long-term infrastructure investments in emerging markets are written in something closer to sand."(Orr, 2006)

The meso-micro level of the theoretical framework generated empirically leverageable I-firm corporate strategies to managing expropriation risk (with Typology A as a key output). The task at the micro level is to concretise the characterisation of the players and deals in empirically researchable ways. So far, both the hypothesis and the entire build-up of the theoretical framework has pointed to deals as the basis of credible commitment. In theorising on the development process of the developing world, Pritchett, Sen & Werker (2017) conjure this to be a game of deals where politically organised actors meet powerful economic actors to bargain on policies and rents – the deals space. These deals could either be ordered or disordered, depending on the stability of the political settlement.[24] In other words, whether deals are classified as ordered or disordered depends on the political settlement's ability to offer credible commitment to a set of deals. This study extends the work on deals with the hypothesis that deals are also the basis of credible commitment in a context of a robust rule of law, yet the deals suffer from residual *ex post* risk. Weaker deals are more susceptible to the instability of the political settlement because they are hollow at the level of partnerships and joint-asset ownership. South Africa's formal legal framework creates the space for the nano/mine-level deal variations, which can be the basis of stability or credible commitment. The quality of an asset level deal relies on

[24] See Nxele (2021b) for a published review of the book.

the orientation of the partners and the strategic crafting of the deal. However, in settings with weaker impersonal institutions, the two-level deal distinction may matter less.[25] What makes this study's application powerful is its broad applicability: confronting *ex post* contracting problems created by residual political uncertainty in the shadow of a relatively strong rule of law.

2.4.1. Variations in types or orientation of capital. The capital spectrum and associated incentives

Capital is not homogenous. Pritchett, Sen & Werker (2017) categorise capital according to source of profits and degree of market competition.[26] The present work goes further by postulating that capitalists (incumbents and entrants) are not homogenous. There are *ex-ante* characteristics that shape the behaviour of investors.[27] This behaviour varies along the patient-predatory capital spectrum[28].

In their review in 2011 of South Africa's *mining* sector, Pwc summarised patient capital as follows: "Patient capital" drives [its] decision making process by looking beyond quick financial returns to a more holistic return across a longer period of time (Pwc, 2011). The role of patient capital is also recognised by South Africa's national treasury. Its study of economic transformation in South Africa repeatedly emphasises the need for patient rather than speculative short-term capital(ists) (National Treasury, 2019).

Following a review of the literature and drawing on the author's experience of working with mining companies as an investment banker, the following crystallises the characterisation of patient capital in mining on the patient-predatory spectrum. These characteristics are used to build the capital spectrum instrument. It is important to note that the characteristics of patient capital in mining are drawn from the literature, and in later chapters companies will be placed along the capital spectrum by studying the companies over time and rated according to the capital spectrum instrument.[29] See Table 2 below.

Incentives or behaviour of patient capital in mining

[25] That is, the (1) mine-level (partnership level) deal and the (2) overall firm-government deal.
[26] The authors build a typology that categorises capital as follows. "Rentiers" and "magicians" target the export market, but rentiers are natural resource firms, while magicians operate in competitive markets. "Powerbrokers" and "workhorses" are domestically oriented, but powerbrokers operate in regulated industries, while workhorses rely on competition.
[27] First, in relation to Pritchett, Sen & Werker (2017)'s work, this means that even rentiers are not homogenous, but differ along the capital spectrum. Second, the idea of different types of partners or entrepreneurs already exists in literature (Foss et al., 2002; Calza & Goedhuys, 2016).
[28] More specifically, the idea of heterogeneity of entrepreneurs on the basis of their patience has been explored in literature; for example, Uras (2013) and Ivashina & Lerner, (2019).
[29] This should alleviate concerns about "tautology" bias.

Patient capital behaves in the following ways:

1. engages with the political leadership with a shared objective of transformation (Hirsch & Levy, 2018).
2. wants to own and manage mining operations, thus taking on the full risks of production and competition. As such, the focus is on fixed investment, production and skills (Morris, Kaplinsky & Kaplan, 2012; Christianson, 2017a).
3. invests in *exploration* and *mine development*, and/or seeks joint ventures to develop this pipeline of projects. Appetite for exploration shows farsighted interests and plans to expand locally (De Beers, 2016).
4. creates a pipeline of fixed investment projects (expansions, new mines) (Deloitte, 2020).
5. invests in infrastructure (Deloitte, 2020).
6. invests in some manufacturing activity, such as smelting and refining operations (Deloitte, 2020).
7. cultivates long-term supply relationships with customers (Raymond, Wilson & Clifford, 2020).
8. deploys its own balance sheet capital to domestic investment (Ivashina & Lerner, 2019).
9. patient capital, or its corporate strategy, sits above political factions. This means that investment plans are not significantly sensitive or shaped by factional politics within the ANC (Nxele, 2022).
10. deals with commodity busts by restructuring and protecting investment, rather than disinvesting (Deloitte, 2020).
11. generally, the majority of revenue comes from sales of produced goods and services, rather than a balance sheet of speculative activity.

The above provides the basis for a capital spectrum that can be deployed to characterise a firm as patient or predatory through a system of scoring. In Table 2, the maximum score a firm can achieve is 27 points. The extreme on the predatory end is zero points. This method of building a spectrum, though informed by literature, has its limitations of subjectivity and can be susceptible to confirmation bias. The hope is that the analytic narratives of the firms in Section B to D will enable readers to apply their own judgement.

Table 2 – INSTRUMENT 1 – The patient-predatory capital spectrum

Attributes	Company types: Patient/Producer company *(far-sighted)**	Investment-holding company	Opportunistic	Predatory
Incentives or behaviour				
Transformative engagement with political power	+++	++	+	0
Focus is on fixed investment, production, and skills	+++	++	+	0
Patient capital invests in exploration and mine development	+++	++	+	0
Patient capital creates a pipeline of fixed investment projects	+++	++	+	0
Patient capital seeks for patient JV partners	+++	++	+	0
Patient capital seeks long-term production-based deals with partners	+++	++	+	0
Patient capital deploys its own balance sheet capital to domestic investment	+++	++	+	0
Patient capital, or its corporate strategy, sits above political factions	+++	++	+	0
Majority of revenue comes from sales of produced goods and services	+++	++	+	0
Maximum score	27	18	9	0

Source: Author

While Table 2 (Instrument 1) captures the characteristics of capital that would apply not only to I-firms, but to E-firms as well, more is needed to describe E-firms. Entrants or E-firms enter the game not necessarily as companies with corporate strategies, but as individuals or consortia of individuals with objectives and *ex-ante* characteristics, as follows.

A. General objectives

(a) Wealth accumulation

B. Differentiating objectives

(a) Pursue quick cash through asset stripping, or

(b) Pursue quick cash through securing mineral rights for bartering, or

(c) Build a thriving investment-holding business, or

(d) Build a thriving, mining operating business enterprise

Various BEE actors will weigh these objectives differently. That is, while all entrants seek to accumulate wealth, their objectives in relation to development policy will differ.[30]

Taking the above proposition that there is variation in capitalists along a patient-predatory spectrum, the next proposition (flowing from Typology A) is that each I-firm will play the BEE game by either (1) concluding political-corporate level deals, and/or (2) concluding asset level deals, and/or (3) going through a mere rules-compliance exercise. This necessitates building two further instruments to characterise the two-level deals, outlined in the following subsections.

2.4.2. Corporate-level deals. Transformative versus collusive corporate-political level deals

What is a transformative/collaborative corporate-political deal (or I-firm-government deal), how does it differ from a collusive deal, and how can this study make the distinction? This subsection accounts theoretically for the variation of corporate-political level deals. The output will be an instrument that can be deployed to generate results that can be analysed using Typology A.

It has already been established that political-corporate level deals are agreements of cooperation with the political leadership. These are not legally enforceable, but they are broadly informal by nature (Ramseyer, 1991). They are closely related to the deals described by Pritchett et al. (2017): deals connected to the political settlement.[31]

In general, corporate-political level deals can either be transformative or collusive (per Typology A). Both types are about being close to the state. Which type is concluded heavily depends on

[30] Additional salient *ex-ante* characteristics of BEE partners include (1) the extent to which a BEE partner is connected to ANC political factions, (2) the extent to which a BEE partner has some general business experience, and (3) the extent to which a BEE partner has some mining experience. These characteristics matter in so far as the more the BEE partner desires genuine entrepreneurial involvement and upgrading, the better the chances of evolving towards the patient end of the capital spectrum.

[31] Deals at the asset level are more formal, and legally enforceable. Indeed, where they have gone wrong in South Africa, courts have been effective third parties.

the time horizon of capital. Several scholars assert that when productive entrepreneurs form close relations with the ruling elite on the basis of mutual productive interest, relations are likely to enhance growth (Abdel-Latif and Schmitz 2010; Whitfield and Therkildsen 2011, in Sen 2015; Maxfield and Schneider 1997; Khan 2010). Indeed, the literature has gone on to attribute variation in development success in the developing world to the extent to which countries or sectors are able to build "growth coalitions" as opposed to "collusive coalitions" (Sen, 2013a, 2015).[32] On the other hand, when corporate-political deals are concluded on the basis of short-run rent-seeking, they generally are unproductive, and without social benefits. Sen (2015) notes that "collaborative state-business relations can turn collusive if economic and political elites find larger gains in short-run rent-seeking, rather than through cooperation and coordination that delivers increased growth, innovation and capability development only in the long term" (p. 6). Therefore, corporate-level deals can also evolve over time, depending on the orientation of the economic and political leadership.

The framing or oversight role of the apex political leader also matters in signalling or clarifying the objectives of the political project. In other words, beyond the written rules, does the *de facto* definition of transformation sought by the political leadership foster transformative deals or is it an invitation for collusive deals? While a political party will have mixed "insiders" with varying intentions, the apex leader might influence this balance. Broadly, the ideology of key political actors, and whether they communicate a vision of growth oriented policies among rival political parties matters more than the type of political regime (Leftwich 2009, in Sen 2015).

Thus, political elites vary from one another. This suggests that the *de facto* definition of transformation might change depending on which leader or faction is ruling. Possible objectives of the political leader or leadership in relation to transformation might consist of the following in relation to the mining industry:

1. Investment in mining
2. Favourable rent-sharing arrangements (limiting share of rents that go to big capital)
3. Fostering emergence of new, black capitalist class
4. Other political alliance and/or self-enrichment objectives

Different political leaders will assign different weights to these social objectives. The role of the political leader in framing state-business relations and policy objectives is also outlined in Sen

[32] Sen (2015) cites examples of growth coalitions in Botswana, Ghana, and Mauritius.

(2015). Sen emphasises that "the long-term commitment of ruling elites to stable informal relations with economic actors is a precondition for collaborative state-business relations" (p. 15). Change in the political leadership (at political party level) along with a change in preference of transformative versus collusive deals is thus expected to reflect partly in the types of entrant elite that enter the BEE deals game at moments of leadership or factional changes. That said, as this study will show, outcomes in investment performance are also significantly driven by the firm- and asset-level deals (the BEE partnership level).

The description of transformative versus collusive deals is used below to develop an instrument (Instrument 2) to classify corporate-political level deals along the transformative-collusive spectrum.[33]

Table 3 – INSTRUMENT 2: The corporate-political deal spectrum

	Transformative deal	Score range (0-3)	Collusive deal	Score range (-3-0)	No deal	Full score
i	Unlocking/unbundling assets for resourcing BEE	0 to 3	Closed party-funding focused deals	-3 to 0	No deal	0
ii	Commitment to continuing investment	0 to 3	Rent-sharing arrangements, no commitment to investment	-3 to 0	No deal	0
iii	Commitment to racially transforming company	0 to 3	Isomorphism tactics rather than transformation	-3 to 0	No deal	0
	Total score	9		-9		0

Source: Author

Instrument 2 is a corporate-political deals spectrum that can be deployed empirically. Using the research methods of analytic narratives and process tracing outlined in Chapter 3, this instrument provides a basis for assessing whether firms do pursue a deal with the state, and if so, whether the deal leans towards the transformative or the collusive side. A deal can score a maximum of nine points if it is transformative, and negative nine points if it is collusive. Those firms that take the rules route receive zero points. The data sources to surface these attributes include extensive media reports – including investigative journalism reports, audited company reports, academic articles, and individual and company biographies. This instrument suffers from the same limitations of subjectivity and confirmation bias as Instrument 1. However, the strength of Instrument 2 is that it is built using authoritative literature on state-business relations and the reader can use it in conjunction with the empirical research to be presented in subsequent chapters.

[33] The classification system could be viewed as binary, but to allow the empirical detail to inform the classification, the term "spectrum" is intentionally used.

Having extended the theoretical construct of the corporate-political level deal, and built an instrument to evaluate such deals, the last step in building the framework is considering the asset level partnerships and deals. This is discussed in the following subsection.

2.4.3. Asset-level deals. Matching partners and crafting deals at asset level

The study proposes that each I-firm will search for a complementary partner that mirrors the orientation and corporate strategy of the I-firm (and vice versa in cases where entrants are engaged in seeking). Finding a "good partner" is not a new idea. It features in search frictions in physical capital markets literature (See Kurmann and Petrosky-Nadeau, 2007).[34]

Using a patient I-firm as a point of departure, such a player would seek a good E-partner that falls on the patient side of the spectrum, because this partner would complement the incumbent's corporate strategy. This match would constitute a good partnership (and vice versa). That firms undertake deals with partners and are interested in differentiating good partners from bad partners *ex ante*, is suggested by Ramseyer (1991). The idea, and the predictions, are as follows:[35]

1. The I-firm, as a minimum, will seek partners with enough political influence to solicit favourable treatment by the state. All incumbents share this minimum incentive.
2. Production or speculation? Firm/partner level production functions are different. A producing firm will have a production function with capital stock as part of the profit function. This introduces direct risks associated with irreversibility and sunk investment. On the other hand, a speculative firm or partner with no interest in production will have a maximisation function that depends on the speculative activity related to equity stocks (e.g., exiting at peak stock price). Therefore, this firm's maximisation function will be similar to a speculative investor in stock markets. At best, in cases where an E-partner holds passive shares to the medium term, they would resemble an institutional investor's maximisation function.
3. Even when a firm is a producing firm, it matters whether the corporate strategy mainly depends on rent-seeking, or instead depends on productivity and innovation. This affects both the time horizons of the firm, and the search for partners that share a similar outlook

[34] By "partner", this study means the instance where one company comes into a contractual agreement with another company. The partnership can either be about equity transfer, or co-managing a mine. The latter case is also referred to as "joint ventures".
[35] Some of these predictions are reinterpretations using Fedderke & Luiz's (2005) mathematical model on uncertainty and irreversible investment.

on wealth accumulation. Practically, if an I-firm is opportunistic and merely extractive, the I-firm will prefer similarly opportunistic E-partners.

4. The matching process between the different kinds of firms, therefore, will likely involve matching the firm's underlying type of maximisation function, as follows: (1) patient I-firms will prefer productionist E-partners or patient institutional-like E-partners, while (2) predatory speculative I-firms will prefer similarly organised E-partners.

The next step is crafting the asset-level deal.

Williamson (1999) highlights that a common assumption is that the legal system enforces promises in a knowledgeable, sophisticated, and low-cost way. This is not consistent with the data and has led to additional or alternative modes of governance arrangements between parties. The main method parties pursue is what Williamson calls "private ordering", which arises to solve the problem of credible commitment stemming from incomplete contracting, even in the shadow of the law (i.e., not simply a "Haberian" institutional substitute). This PhD refers to this "private ordering" as "mine-level" deals.

In addition to profiling each other along the capital spectrum, parties will be concerned with how to forge functional relationships that can align (and continuously realign) interests under changing exogenous political economy and market conditions. In other words, how does one structure deals that are credible? Parties will take the following into consideration when crafting a deal:

(i) How does one mitigate *ex post* opportunism (i.e., expropriation risk) by crafting *ex ante* safeguards? For instance, incumbents might consider that mining level joint ventures (JVs) share risks more so than passive shareholders that can (and likely will) exit when profitable to do so. Moreover, mining JVs are likely crucial to mitigating *ex post* opportunism at the political party level.

(ii) To mitigate opportunism, parties need to both give and receive "credible commitments". This entails crafting deals that align interests and possess superior adaptive properties, e.g., JVs align objectives and interests.

(iii) Passive equity transfers will be less robust because they reduce time horizons, preferring front-loading over long term investment.[36] What happens when BEE deals reach their compliance maturity stage?

[36] This is expected regardless of financing source of BEE partner (e.g., debt).

- Passive equity shares will likely always be subject to *ex post* opportunism, unless appropriate safeguards can be devised *ex ante*.

These different types of firm/asset-level deals (productive versus passive) are captured in Typology A (the right-hand side of the typology). The productive deals are either joint ventures or proactive shareholding. Joint venture deals are those where an I-firm and an E-firm partner build and/or operate a producing mine. In so doing, the partners come into an enforceable contract of mutual productive interest. An alternative variant under the productive deal is when an E-firm holds active shares in an I-firm, including participating in the management of the I-firm. On the opposite end are passive deals. These are deals where either an I-firm allocates a passive share to an active E-firm, or a transaction where an I-firm allocates shares to a shell, often once-off rent-transfer transactions.

The ultimate question is what are the investment implications of these different deals crafted by different I-firm types and E-firm types? The asset-level deal has two key dimensions: (1) the type of partner (patient vs predatory), and (2) the type of deal (production vs passive). The theoretical prediction is that good deals will yield the highest investment – where both partners are patient and enter into investment-driven joint ventures. Bad deals will fail to secure credible commitment and will remain uncertain and opportunistic.

This hypothesis and its predictions can be demonstrated in Typology B below.

Figure 5 – TYPOLOGY B: Theoretical investment outcomes in I-patient and I-predatory world

Theoretical investment outcomes in I-patient world

Type of deal	Type of BEE Partner: E-patient partner	Type of BEE Partner: E-predatory partner
Production deal	High investment	Empirically unlikely (Impatient E partner) OR low investment
Passive equity deal	Moderate to high investment	Low investment

Theoretical investment outcomes in I-predatory world

Type of deal	Type of BEE Partner: E-patient partner	Type of BEE Partner: E-predatory partner
Production deal	Empirically unlikely (I-Impatient firm)	Low Investment
Passive equity deal	Moderate investment	Low investment or deal collapse

Source: Author

Typology B essentially shows that different types of partners can combine at the firm/asset level to close deals that systematically yield different investment and transformation outcomes. Apart from the binary high-low investment outcome, the hypothesis supposes that the behaviour of patient capital will be continuous large investments over the life of the deal. In contrast, a predatory firm will have low subsequent investment in the deal, on the basis of low credible commitment, and an incentive to sweat assets.

Finally, to operationalise this typology empirically, the question is how to empirically rate different investment outcomes in relation to the extent of success or failure? This leads to the construction of Instrument 3: the firm/asset-level deal success spectrum.

Table 4 – INSTRUMENT 3: firm/asset level deal success spectrum

	Investment outcome	**Transformation outcomes**	
	y=size of investment	*z=stability of deal*	*t= transformation result*
Ranking	(relative to project)	(failure to realise development policy goal)	Deal develops into productive BEE enterprise (success)
First Tier	**High investment** = deal with multiple rounds of large investment	z=1 if deal remains stagnant; z= 2 if deal eventually crumbles	t=1 if *productive BEE firm*, 0 otherwise
Second Tier	**Medium investment** = (a) deal with one large investment or (b) deal with multiple rounds of modest investment	z=1 if deal remains stagnant; z= 2 if deal eventually crumbles	t=1 if *productive BEE firm*, 0 otherwise
Third Tier	**Low investment** = (a) deal with one round of low investment or (b) deal with one round of modest investment	z=1 if deal remains stagnant; z= 2 if deal eventually crumbles	t=1 if *productive BEE firm*, 0 otherwise
Fourth Tier	**No investment** = (a) deal but no subsequent investment or (b) negotiation but no deal	z=1 if deal remains stagnant; z= 2 if deal eventually crumbles	t=1 if *productive BEE firm*, 0 otherwise

Source: Author.

Instrument 3 enables this research to assess the extent to which firm or asset level deals resulted in investment and transformation. The instrument generates different empirical results. For example, a deal that results in high subsequent investment will be classified as first tier investment. A deal that also produces, in the process, a separate, productive BEE company will be classified as first-tier + t=1 investment. Consistent with Typology B, there are theoretically unlikely combinations, such as a fourth-tier investment that also results in a productive BEE firm. Instrument 3 is the final output of the theoretical framework. This framework is applied in the methodology that is outlined in the chapter 3.

2.5. Conclusion to the theoretical framework

This chapter outlined a theoretical framework that generates possible paths to investment outcomes and transformation outcomes in the mining sector, in relation to the research question and hypothesis. The theoretical framework was organised in increasing order of specificity to finally arrive at an empirically adoptable framework for studying the relationship between deals and investment/transformation outcomes.

The next immediate task is placing this theoretical framework within a methodology that fits the research question and the hypothesis. This is outlined in the following chapter.

CHAPTER 3 Paradigm, methodology and methods

This chapter builds on Chapters 1 and 2 to outline the general strategy through which Part I of the research was undertaken to explore the rules-deals hypothesis. Chapter 3 primarily outlines the methodology and research methods adopted. It also discusses the rigour of the process in relation to the hypothesis. In so doing, it shows how the research explanations were developed.

3.1. What is the research about? The process of identifying a research area

This subsection briefly outlines the process of identifying the research hypothesis and sub-hypotheses that structure Part I. In so doing, it highlights the process travelled from the question to the hypothesis to a suitable research strategy and methods.

Guided by the methodology outlined below in Section 3.2, the project began with a specific question about the rent-transfer strategy underlying the project of elite transformation. The research then asked the following theoretical questions in relation to the strategy: What are the incentives if (1) the outcome was to be a successful reconciliation of rent transfer and investment or (2) if the outcome was to be strongly negative from the perspective of investment?

The result of the above questioning process yielded the following:

Rent-transfer initiative: Require new investments in mining to meet robust requirements for inclusion of BEE partners.

i. causal logic if it works: credible commitment via a deal at corporate-political level and at asset level;
ii. causal logic if it fails: endemic uncertainty

The above process (and further refinements throughout the research) yielded a hypothesis that investment is highest and most sustainable when (1) there is a tangible deal of mutual cooperation with the ruling political elite or party in relation to transformation rather than in relation to predation and (2) there is a durable, patient partnership locking-in credible commitment at the asset level. When the deals are collusive or struck with a predatory partner, investment will be lower.

This provided an analytic structure in the form of the rules-deals and investment framework for making sense of South Africa's transformation of mining capital, and mining sector investment performance. The focus on mining is explained below in Section 3.3.

3.2. Approaching the research question

What informs the journey from the research question to undertaking the research? The researcher's research paradigm leans on pragmatism, where reality is continually interpreted and renegotiated against the backdrop of new and unpredictable situations. As such, the philosophy applied in the research depends on the research question. Pragmatists believe that the optimal research methods are those that most successfully answer the research question. Therefore, the researcher distances himself from epistemological and ontological camps in the pursuit of deploying relevant methods to investigate different components of the research problem (Kaushik & Walsh, 2019).

Therefore, on the basis of the rules-deals and investment framework developed systematically in Chapter 2, the methodology of examining "what happened and why?" in relation to the question is a combination of exploration and interpretation supported by sound empirical data. The emphasis is on an iterative approach, moving between theory, literature, and cases. This approach relied primarily on the "analytic narratives" research approach, and the related process tracing method.

Bates, Greif, Levi, Rosenthal, & Weingast (1998) and Levi and Weingast (2016) propose the analytic narratives approach specifically for problems in development policy and practice. The analytic narratives approach involves selecting a problem or puzzle, then building a model to explicate the logic of an explanation for the puzzle, using a case study. The methodology is characterised by the following aspects:

1. *Generating theory.* Initially the theory is formed from the data; it is selected because it appears to offer a good fit. Rendered explicit, the theory then becomes vulnerable; it can be subjected both to logical appraisal and to empirical testing.
2. *Disciplining the narrative.* Theory places constraints upon the narrative; the account is constrained by the logic of the theory.
3. *Modifying theory.* The cases derive implications from theory; but when the case materials do not confirm their expectations, the authors respond by reformulating their models and by altering the way in which they think about the problem.

4. *Postdiction.* When models highlight features of the data that hitherto have escaped attention; when they can be contradicted by the evidence; and when they predict relationships that must hold, if their equilibria capture the processes that generate the phenomena of concern – then 'we' are well beyond mere exercises in "curve fitting".

Bates, Greif, Levi, Rosenthal, & Weingast (1998) argue that analytic narratives

> …blur the conventional distinction between deduction and induction….The construction is an iterative process… [and] departs from conventional notions of hypothesis testing. The dominant response to disconfirmation is reformulation not falsification…. We move back and forth between interpretation and case materials, modifying the explanation in light of the data, which itself is viewed in new ways, given our evolving understanding …[so that] in the end we achieve a match between theory and case materials (p. 16-17).

This captures the process by which Part I, and the case studies, were formulated, structured, and organised. This is discussed explicitly below in Section 3.3.

The analytic narratives methodology also applies rational choice theory, to move from description to explanation. The aim is to highlight and focus upon the logic of the processes that generate the phenomena being studied. In this sense, game theoretic models are particularly useful ways of exploring the validity of narrative accounts, so that the construction of games provides the link between the prominent features of the narrative and its outcome. Furthermore, this approach seeks to

> …account for outcomes by identifying and exploring the mechanisms that generate them….By reading documents, labouring through archives, interviewing, and surveying the secondary literature, we seek to understand the actors' preferences, their perceptions, their evaluation of alternatives, the information they possess, the expectations they form, the strategies they adopt, and the constraints that limit their actions. We seek to cut deeply into the specifics of a time and place, and to locate and trace the processes that generate the outcome of interest" (Ibid., p. 11-12).

This underlying rational choice theory helped organise the case studies in ways that actors could be studied in their decisions, actions, and interactions, to emerge with a better understanding of the deals they make.

To further strengthen the agility and causal narrative nature of the study, the method of process tracing is a useful complement. Process tracing is the analysis of evidence on the processes, sequences, and conjectures of events within a case for the purposes of either developing or testing hypotheses about causal mechanisms that might causally explain a case. It is an approach that brings together pieces of research material that include disparate, qualitative fragments of evidence about context, process, or mechanism (Bennett & Checkel, 2014). Process tracing is similar to the analytic narratives approach but emphasises key variables rather than the key actors, their interaction, and their strategies (Levi and Weingast, 2016).

3.3. Selecting cases to explore the hypothesis

From the analytic narratives approach, the criteria for case selection includes the following:

i. Cases in which key actors interact strategically
ii. Cases affording opportunity to get at an important process or mechanism not easily accessible through other means (e.g., credible commitment mechanisms)
iii. It must be possible to generalise the causal mechanism and the structures or relationships to other cases under specifiable conditions

To concretise the research into specific cases, the research selected the mining sector as a primary sector of primitive accumulation in the history of elite transformation in South Africa. To further narrow the case, the process isolated the platinum industry as the next frontier of rent accumulation.

3.3.1. Specific case studies in platinum mining

The research began by studying and profiling the entire universe of platinum projects and mines located in what is called the Bushveld Igneous Complex or the platinum belt. This is a belt of platinum intrusion running across Limpopo, North West, and Mpumalanga provinces. The profiling entailed building a comprehensive dataset of all mines, researching when they started, who owns them, what BEE deals underpin the mine, and whether the project or mine materialised into shaft-sinking investment over time. On the basis of this overview, presented in Chapter 4, the research could home in on the major actors in the industry that make up a significant share of production, but vary in relation to the hypothesis.

How was it known that there is behavioural variation in the actors along the patient-predatory spectrum? This emerged during the next critical step of the research process, which was to

comprehensively study the history of mining in South Africa, with a special focus on the Anglo American Corporation, and Lonrho. The history surfaced differences in corporate behaviour which, studied along the present pattern of the aforementioned analysis of the platinum belt, suggested systematic connections between historical corporate behaviour and present investment patterns. Therefore the process moved from the data to modifying the theory of how "we think about the problem" (Bates et al., 1998). The historical study also suggested that the story is more than the sets of asset-level deals observed in the platinum belt, but a corporate-political engagement which buys room for asset-level deals. Therefore, the selection process was not selecting on the dependent variable, but an overview was critical as a step to sort out the patterns of deals over time as an initial step to exploring the usefulness of the hypothesis.

Following this process, three anchoring cases were chosen from an I-firm perspective that provided variation of incumbents by origin, ownership, corporate strategy, and partnerships, as follows[37]:

Rent-transfer case 1: Anglo American Platinum (Amplats) and BEE partners (Section B and Section D)

Rent-transfer case 2: Lonmin and BEE partners (Section C)

In turn, both of these I-firms provide variation in E-partners through different deals over time. Amplats alone accounts for about 50 per cent upward of platinum production, and similar ratio in quantum of empowerment deals, during the period under study.

3.3.2. Specific case study level questions and sub-hypotheses

The specific cases of the I-firms, researched in conjunction with the theoretical framework and emerging data, narrowed the case level question as follows:

Case level question: In the post-apartheid environment, with black empowerment at the forefront of the transformation agenda, how did Amplats mitigate expropriation risk in a way that supported sustained investment in platinum? That is, how did Amplats manage the challenge of locking-in credible commitment in a new and uncertain political environment? Similarly, the question guided the investigation on Lonmin.

What sub-hypotheses follow?

[37] Rent-transfer case 3: Northam and BEE partners. Mentioned by way of footnotes in Chapters 1 and 2, Northam was omitted to fit into the word limit of the PhD.

Following from the initial research process outlined above, the following sub-hypotheses surfaced as a disaggregation of the overarching hypothesis.

a. Variation in investment

Variation in subsequent investment is driven by the nature of the deals

i. Level and quality of company-wide investment is a function of the quality of the corporate-political deal.

ii. Level and quality of asset-specific investment is a function of the quality of BEE deals. Good deals successfully reconcile rent transfers and investment

b. **Quality of deal**

The quality of a deal is gauged by the extent to which it can foster and sustain credible commitment in the face of uncertainty, at two levels

i. First, at the corporate political level in a way that signals cooperation with the political class on the basis of transformation rather than predation

ii. Second, a deal with a patient partner at mine level that anchors on capability-building as a way to win and sustain space over time, namely deals that are robust to changes in political factions, but are themselves supported by the robust rule of law

c. Type of partner

i. A patient I-firm is an investment-driven producer with a strategy to master the deals environment in a developmental/transformative way, while a predatory I-firm pursues collusive deals.

ii. A “good” BEE partner is one inclined to becoming a producer (looking to get involved in operations) and is distanced from political factions, while a “bad” BEE partner exploits BEE for unproductive wealth accumulation.

iii. Communities as BEE partner: Deals with a corporatised and organised/harmonious traditional authority are more stable than deals with a less organised traditional authority. This is a question of the leadership of each community.

a) When it works: deals on communally owned land give firms improved community relations and land access, with local elites helping secure the operating environment

The following section outlines how the hypotheses were implemented in the research project.

3.4. Turning the hypotheses into action

3.4.1. The unit of analysis and the object of analysis as the arena of action

The empirical detail to be researched lies within the case studies, and the deals and partnerships over time.[38] The level of analysis is primarily at the meso-micro and micro-nano level – corporate and asset level, as described in Chapter 2. The unit of analysis will move narratively between actor and deal within the case studies, seeking to understand the different arrangements (deals) and how these yield varying risk mitigation outcomes.[39] The object of analysis is the mines/mining projects. The "black box" to be uncovered through process tracing is how actors construct different deals and partnerships. This entails asking and understanding what the principal dimensions are with respect to which transactions differ (types of deals with political elite and specific mine-level deals), and whether they support investment.[40]

3.4.2. Periodising the waves of empowerment deals for analytic structure

The process of elite transformation happens over multiple periods, where actors learn and evolve in their strategy and partnerships, either confirming their characterisation along the capital spectrum, or evolving towards a different end of the spectrum. The following is a general timeline of the game from an incumbent and rules perspective:

Time/Round 0 – pre 1994, mainly covering historical evolution of corporate strategies and the Afrikaner empowerment experience[41]

Time/Round 1 – 1994-2001, period of signalling proactive cooperation and legitimacy

Time/Round 2 – 2002-2007, run up to reaching 15 per cent black ownership empowerment deadline, and end of Mbeki era in 2007

Time/Round 3 – 2008-2014, new ANC faction, run-up to reaching 26 per cent of black ownership empowerment deadline, and end of commodity boom in 2014

Time/Round 4 – 2015-2018, industry consolidation, mining community upheaval pressures, and state capture pressures

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[38] In other words, the mechanisms of *ex post* governance are where the main action of economic organisation resides. *Ex post* means, once the deal happens, what happens next that either supports investment or does not?

[39] This is consistent with the theory of transaction costs, encapsulated in Oliver Williamson's work as outlined in Chapter 2. Transaction cost economics asks what the attributes are on which governance structures (e.g., types of overall deals) differ that have hazard mitigation consequences. It asks why one form of organisation (e.g., joint venture deal to co-operate a mine) is unable to replicate the mechanisms found to be efficacious in another (e.g., passive minority share transfer). Simply put, how does one differentiate between good deals and bad deals?

[40] Transactions differ in their attributes in a discriminating, transaction cost economising way (Williamson, 1999).

[41] In 1948 the Afrikaner-led National Party came into power and installed Apartheid as policy. Between 1948 and the late 1980s, this period entailed a process of economic empowerment in favour of the white Afrikaner people (mainly). See Section B of the research.

These are broad guiding and framing timelines, from an incumbent's perspective. However, in a specific case, the timelines may differ. They certainly differ for entrants, who did not enter the game simultaneously and reach critical moments of re-strategising at different times.

The periods themselves have different political economy dynamics that are kept in mind in how they might influence outcomes. For example, deals might arguably be embedded in a coherent empowerment alliance of Round 1, while the next rounds of deals occur in a context of competing interests and increased differentiation within the black business class (see Nxele, 2022).

3.4.3. What is the empirical strategy for testing the 'rules-deals' hypothesis?

The empirical strategy for testing the rules-deals hypothesis does not simply work backwards from the outcome. Logically, it would identify *ex ante* characteristics of one or both of I-type firms or E-type firms, explore/demonstrate whether or not these characteristics prevailed, and then account for variation in the quality of the deals. This process, outlined below, helped create the capital spectrum.

i. What are the characteristics of "investment-supporting" versus non-investment-supporting BEE partners? Specify a variety of possible specific characteristics – and describe the hypothesised causal mechanism between each specific characteristic and its possible impact on development.
ii. Are some mine-owners "better-owners" in the sense that they are more committed to attracting "good" BEE partners? Specify the characteristics of different types of mine-owners in terms of their propensities.

The tools above were then actioned, as outlined below.

3.4.4. The empirical task: data collection and analysis

The empirical task was to account for variation in investment performance based on variation of quality of deals. This involved the following systematic steps:

i. Develop the capital spectrum using literature, which organises the case studies along the spectrum (laid out in Chapter 2)
ii. Work out the corporate strategies through analytic narrative and process tracing (laid out in Chapters 5, 7, and 9)

iii. Study the deals and partnerships through analytic narrative and process tracing and analyse variation in investment and transformation by corroborating variation in investment outcomes with i to ii above (laid out in Chapters 6, 8, and 10).

Figure 6 – Tracing deals and investments overtime

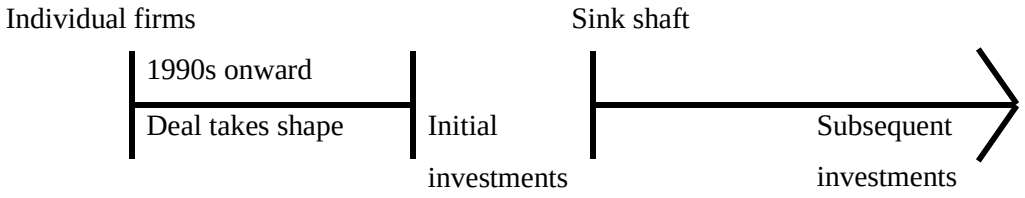


Figure 6 above diagrammatically shows the method of tracing deals and subsequent investments based on the hypothesis. This entailed understanding the individual firms, their corporate strategies, the partnerships and deals over time, as well as their investments over time.

The criteria for investment success, post deal, asked the following questions:

i. Did the investment happen?
ii. Post investment, was there a thriving high productivity mine, including ongoing investment
iii. Post deal – what happened to the BEE partnership/partner?

As suggested above, the data collection was extensive, including a comprehensive dataset of all mines and projects in the platinum belt, extensive information of the stories of each of the actors over time in relation to their way of doing business/accumulating rents, as well as exhaustive information on investments over time. The data sources mainly comprised audited company annual reports, biographies, investigative journalism articles, historical archives of various types, including newspapers, reports, and memoires. The process triangulated multiple sources to increase the validity and reliability of the data. The use of narrative approaches accompanied by quantitative investment data further strengthened the work. The theoretical framework outlined in Chapter 2, as well as the analytic narrative and process tracing methods were used to analyse and interpret the data.

In summary, the process entailed the tracing of a deal, the partnership, and investment over time. The research process made it possible to see how the political credibility-seeking and compliance-seeking activities led to successful or failed investments. Thereafter, guided by the hypothesis and judged against alternative explanations, the research process could assess what made some deals successful and some not, discussed in Chapter 11.

3.5. Decisions and Limitations

This section discusses the limitations of this study, particularly arising from the research and writing process.

(a) Structuring and sequencing the study in a way that leans on the strengths of the methodology but also communicates the story coherently

The research process outlined in the preceding sections of this chapter presented a challenge of how best to organise the research to tell the story, but without compromising the integrity of the research methodology that was used. For example, at some point in the research, it surfaced that I-firms differ in their orientation towards patience versus predation. The challenge has been to demonstrate that this characterisation is an outcome of the research process, rather than a decision taken going into the research.

(b) Data limitations

Part I suffers from limitations in the data. The first concern is that in collecting sources to craft the corporate histories that ultimately inform the characterisation of each firm, this published material is itself biased. Part of this limitation in this study is that this material was not complemented with interviews, which could have challenged the material. Despite the broad sources of data, the omission of interviews remains a limitation, which is not fully resolved by corroborating with audited investment data.

There are two main reasons for the exclusion of interviews. First, this study was undertaken during the Covid-19 pandemic, making travel and interviews more difficult. Second, there was a trade-off between breadth and depth. The study could have focused only on Anglo/Amplats and explored variations among its E-firms, but that would have sacrificed the conceptual and empirical distinction between patient and predatory I-firms. Alternatively, the study could have focused only on the I-firms, but that would have sacrificed important sources of variation among E-firms.

3.6. Conclusion

The purpose of this chapter was to outline the research approach and process undertaken to produce this study. The aim was also to surface the decisions taken, both to make the study

replicable by other researchers, and to reveal the limitations and constraints within which the study and findings must be read.

The following final chapter of Section A provides an overview of the investments in the platinum belt.

CHAPTER 4 Overview of platinum mining deals and investments

The purpose of this chapter is twofold. First, the chapter provides an overview of the platinum mining industry in relation to investment performance over time. Second, this chapter sorts out the patterns of platinum investment by partnerships, and by the extent of capital investment associated with each partnership. In so doing, the chapter lays the foundation to the exploration of the ways in which credible commitment can be formed for continuing investments, the institutional changes needed to enable emergence of productive black capitalists, and the study of how this tension plays out empirically – and why.

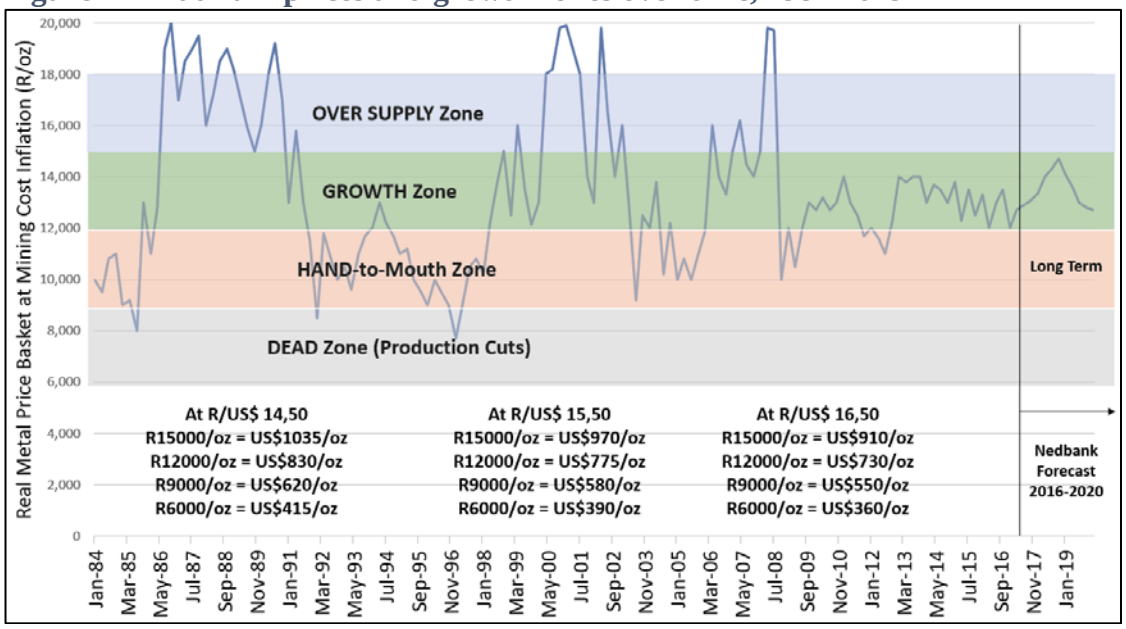
4.1. The mining investment problem. "South Africa missed the commodity price boom"

In spite of having the world's largest *in situ* mineral resources by value, the South African mining sector has underperformed in recent years. In the 15-year commodities boom from 2000 to 2014, the world's top-20 mining countries achieved an average mining GDP growth rate of about 5 per cent a year. In the same period South Africa's mining sector GDP shrank by 1 per cent a year (Fauconnier, 2011). Focusing on platinum, South Africa's platinum producers failed to capitalise on boom times. Production peaked at 5.3 million ounces in 2006, up from 4 million ounces in 2001, and has since struggled to recover. The institutional environment has been riddled with regulatory and legislative uncertainty and the threat of nationalisation. This contributed to delays and halting of capital expansion plans (Esterhuizen, 2011). The *Business Live* newspaper in June 2013 reported that several sources confirmed that the platinum industry has been constantly suffering from under-investment (Seccombe, 2013). This is supported by leading platinum analysts van Graan and Esterhuizen (2016), and van Graan (2019) whose research concludes that the industry has been undercapitalised over the 2000s period, leading to declining production.[42]

Has this general underperformance been driven by low prices?

[42] See the *Financial Mail* (2018) top ranking of analysts 2018.

Figure 7 – Platinum prices and growth zones over time, 1984-2019



Source: van Graan and Esterhuizen (2016)

Figure 7 clearly shows that mineral and metals prices are not the problem. The platinum prices have largely remained in the growth zone during the 2000s commodity boom. As demonstrated by van Graan and Esterhuizen (2016) in their platinum report, both the platinum prices and currency exchange rates have not been sufficient arguments to explain the poor investment performance.

This invites examination of the political economy context. A major contextual "problem" is that the transition to a new political regime in 1994 also necessitated the transformation of South Africa's economic elite from exclusively white to a racially inclusive ownership structure. To that end, the new post-1994 government nationalised mining rights in South Africa. This institutional change gave government the discretion to allocate mining rights to "suitable parties". This has also been accompanied by several iterations and tightening of licence requirements. These changes led to uncertainty, risk of arbitrary intervention by bureaucrats, and overall lack of credibility. The process unfolded under a difficult economic context characterised by slow economic growth, generally turning the process into a zero-sum game, between incumbent and emerging elites, also among competing aspirant emerging elites. The result was a turning away from rule-based effort at BEE to an increasingly personalised contestation. The consequences included uncertainty *vis-à-vis* the rules of the game governing property rights. In turn, this led to a slowdown in private investment. Moreover, political struggles within the ANC became centred in significant part around contestation among rival aspirant business factions

(Levy, Hirsch & Woolard, 2014). The argument and basis of this study is that this process and contestation partly plays out empirically in BEE deals.

Having discussed the context of the platinum mining investment story, the following section provides a picture of the major producers of platinum, as well as a map constructed by the author to show where in the platinum belt the most prominent producers have assets.

4.2. Brief overview of the platinum sector

Platinum production has historically been dominated by subsidiaries of three South African apartheid-era conglomerate firms namely, Anglo American Corporation (specifically its offshoot, Anglo American Platinum – Amplats), Gencor (specifically its offshoot, Impala Platinum) and Gold Fields of South Africa (specifically its offshoot, Northam). A fourth dominant platinum producer is Lonmin, which represents the British conglomerate, Lonrho.

Table 5 - Comparative production of top four platinum producers in South Africa, 1995-2019

1995	Amplats	Implats	Lonmin	Northam	**Total**	**Amplats%**	**Lonmin%**
Platinum (000 oz)	1632.8	994	no data	97.975	2724.775	59.92%	
Palladium	784.7	495	no data	45.627	1325.327	59.21%	
Rhodium	119.8	134	no data	7.817	261.617	45.79%	
	2537.3	**1623**	**1,030**	**151.4**	**5341.719**	**47.50%**	**19.28%**
1998	Amplats	Implats	Lonmin	Northam			
Platinum	1861	1052	627.514	185.98	3726.494	49.94%	16.84%
Palladium	930.9	557	291.085	83.626	1862.611	49.98%	15.63%
Rhodium	176.7	112	88.185	14.797	391.682	45.11%	22.51%
	2968.6	**1721**	**1006.8**	**284.4**	5980.787	**49.64%**	**16.83%**
2001	Amplats	Implats	Lonmin	Northam			
Platinum	2109.2	1291	717	168.294	4285.191	49.22%	16.73%
Palladium	1049	681	324	79.558	2133.283	49.17%	15.19%
Rhodium	200.4	164	102	13.295	479.576	41.79%	21.27%
	3358.6	**2136**	**1142.3**	**261.1**	6898.05	**48.69%**	**16.56%**
2014	Amplats	Implats	Lonmin	Northam			
Platinum	1,890	1178	436.184	241.831	3745.515	50.45%	11.65%
Palladium	1,225	710	210.521	117.305	2263.226	54.14%	9.30%
Rhodium	229	157	78.486	31.007	495.893	46.26%	15.83%
	3344.3	**2045**	**725.2**	**390.1**	6504.634	**51.41%**	**11.15%**
2019	Amplats	Implats	Lonmin	Northam			
Platinum	2,485	683.3	666	351.916	4185.601	59.36%	15.91%
Palladium	1,611	332	310	162.217	2414.746	66.71%	12.84%
Rhodium	317	86.9	102	48.835	555.014	57.19%	18.38%
	4412.9	**1102.2**	**1077.3**	**563**	7155.361	**61.67%**	**15.06%**

Source: Author, compiled using company annual reports, 1995-2019

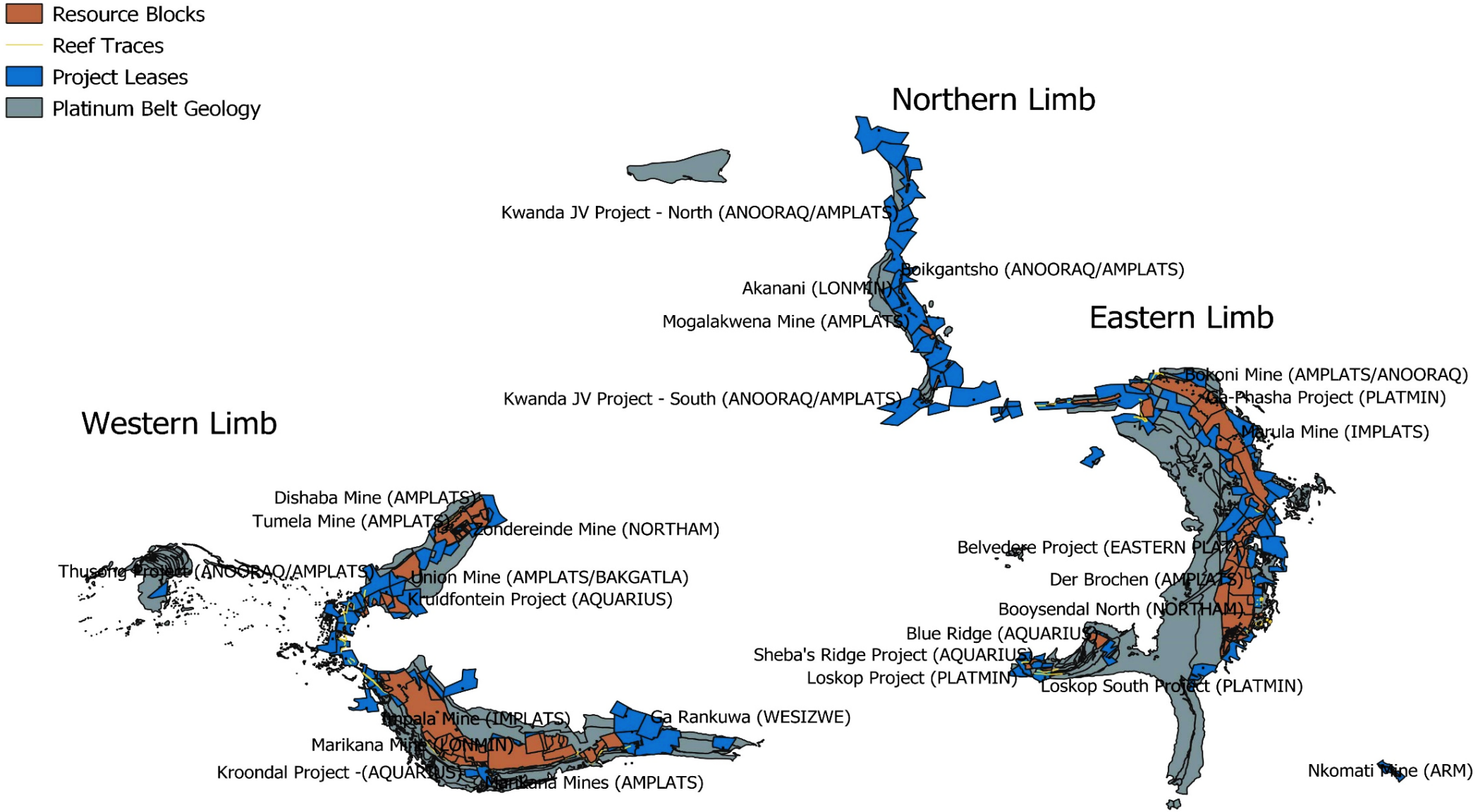
Table 5 above documents the production shares over time of the leading platinum incumbents. The table shows that Amplats is overwhelmingly the biggest producer of platinum, followed by

Implats, Lonmin, and Northam in descending order. In turn, these producers explain the majority of deals in the platinum belt. Two of the four producers are covered in the case studies.[43] The producers shown above are also shown spatially below in Figure 8 in terms of their mines.

The platinum mines shown below are stories of deals. Therefore, the following section outlines the different combinations of partnerships or deals that form part of meeting BEE requirements.

[43] Implats was omitted because of its similarities to Amplats, both in strategy and in choice of BEE partners (i.e., African Rainbow Minerals and the Royal Bafokeng). As noted by way of footnotes in Chapters 1 to 3, Northam was completed but omitted due to the word count limit of the PhD.

Figure 8 - Platinum belt, universe of mines

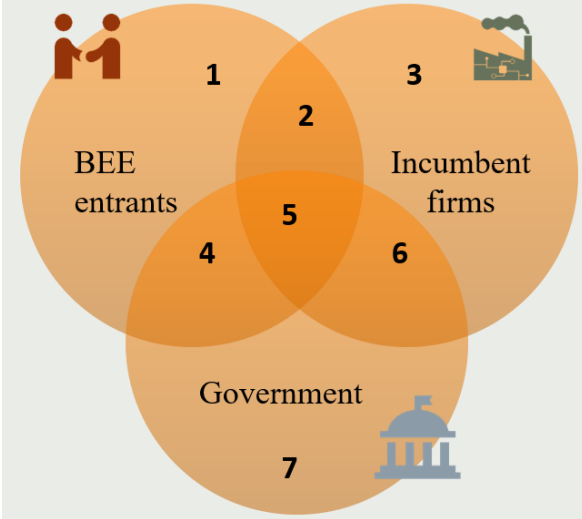


Source: Author, using QGIS. GIS Data from Zientek et al., (2014)

4.3. A broad stroke of the patterns of BEE deals and trends

The story of black economic empowerment involves three main groups of actors. The first group is the government, which in this case is used broadly to mean the actor that sets the BEE rules, and in many instances represents the ruling political party. The second group consists of the BEE entrants, who are overwhelmingly from the ruling political party, black organised business, and government itself. This is the case even though the policy is *de jure* open to every person classified as historically disadvantaged. The third group is made up of incumbents.[44] These three actors come together to generate different patterns or options of BEE deals, shown by Figure 9.

Figure 9 – Patterns of deals: Does the type of BEE make a difference to investment?



1. Market-funded BEE entity buys equity stakes at competitive rates
2. BEE entity active in a form of BEE deal with incumbent: either joint-venture or discounted equity transfer
3. "No deal" at mine-level: parent retains 100% ownership of asset
4. Government-funded BEE entity develops a mining project
5. Government co-opted/funded BEE entity enters deal with incumbent firm
6. Deal between incumbent and government
7. Government as equity investor (e.g. IDC)

BEE entrants: could be an individual, company, community, employees

Source: Author.

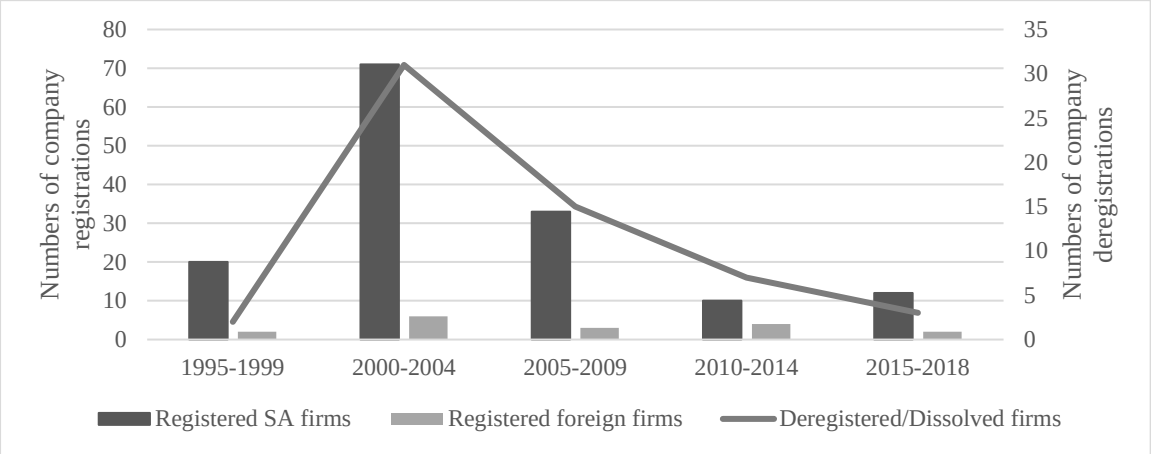
Figure 9 shows the various possible combinations of deals between the three actors. The most common deals happen between I-firms and BEE entrants (combination 2), between I-firms and government (combination 6), and a three-way deal where the BEE entrant is sponsored by government either with mineral rights or funding in order to facilitate a deal with an I-firm (combination 5). There are also several mines that remain 100 per cent owned by I-firms

[44] International entrants are also treated as "incumbents" by government.

(combination 3); an important phenomenon that is explained in the study as itself an outcome of deals. The rarer instances are BEE entrants funding themselves at market prices, or BEE entrants sponsored by government establishing their own mining project.

The enactment of the BEE law in the early 2000s stimulated a large number of mainly BEE entrants into the platinum mining industry. This was an achievement for the policy in so far as it aimed to open the industry to a broader set of investors and BEE entrants. However, as shown by Figure 10 below, the sharp increase in the rise of number of registrations of platinum companies in the 2000 to 2004 period was not sustained in the later periods. While the majority of these registration translated to BEE deals in the form of equity transfers, the majority of these deals did not materialise into investment. This is discussed further below. Another notable observation from the figure is that the number of registered foreign firms remained low. There was no flurry of investors flooding the platinum belt to seize the release of new mineral rights by the government. Therefore, from an overview perspective, there appears to be a strong correlation between the enactment of BEE and domestically registered firms, but there appears to be a weaker correlation between these registrations and investment in the platinum belt.

Figure 10 – Company registrations and de-registrations in platinum, 1995-2018



Source: Author. Data source: Who owns Whom database. (Sic Code:24240)

In other words, although there were several entrants (mainly BEE) in the platinum belt, the majority of the deals either failed, or produced different levels of success in terms of capital investments. These different deals over the study period were collected from the Nedbank Group Economic Unit (2017), listed platinum company annual reports, and several mining media sources, and sorted according to levels of success using the tier schema presented in Chapter 2 as Instrument 3. The results are presented in Figure 11 below.

Summary of patterns of the universe of platinum projects and mines between 1994 and 2018

Figure 11 – Organising the deals-investment patterns: Phases by time when deal happened

			1st Tranche of rights		2nd and 3rd Tranche of rights		
		Round 0	Round 1 (1994-2001)		Round 2 (2002-2007)	Round 3 (2008 -2014)	Of these, which ultimately failed by 2018?
Degree of investment ↑	**1st tier deal/high investment** **[quality of deal/quality of partner]**	Unbundling results in large, focused mining houses and opportunities for entry	**Rustenburg** (Amplats 100%) **Union** (Amplats 100%, then 85%) **Mogalakwena** (Amplats 100%) **Dishaba**(Amplats 100%) **Impala** (Implats 100%) **Marikana** (Lonmin 100%) **Zondereinde** (Northam 100%) **Modikwa** (Amplats +ARM 50/50 JV)	Mining Law 2002	**Two Rivers** (Implats +ARM 50/50 JV) **Nkomati** (ARM 100%) **Bafokeng-Rasimone** (Impala/RBR JV Mine)	None	None
	2nd tier deal/medium investment		**Kroondal Project - Kroondal block** (Aquarius + Savannah)		**Der Brochen Project** (Amplats) **Twickenham** (Amplats 100%) **Tumela** (Amplats 100%) **Bokoni** (Amplats + Anooraq JV) **Mototolo** (Amplats 100%)	**Northam2.0** (Northam + Zambezi) **Platreef** (Ivanhoe + Platreef BEE) **Kalplats Prospect** (ARM 100%)	Bokoni Mine
	3rd tier deal/low investment		**Blue Ridge** (Aquarius + Savannah) **Crocodile River – Maroelabult** (Eastern Platinum + Gubevu) **Crocodile River - Zandfontein** (Eastern Plat + Gubevu)		**Marikana** (NOT the Lonmin Marikana) (Amplats) **Kroondal - Townlands** (Aquarius + Savannah) **Everest** (Aquarius + Savannah) **Limpopo Project** (Lonmin) **Leeuwkop** (Implats + Mogopa)	**Kruidfontein Project** (Aquarius + Savannah) **Magazynskraal Project** (Platmin + Boynton) **Bakubung** (Wesizwe + Micawber)	**Blue Ridge** (Aquarius + Savannah) **Crocodile River Project - Maroelabult** (Eastern Platinum + Gubevu) **Kruidfontein Project** (Aquarius + Savannah) **Magazynskraal Project** (Platmin + Boynton)
	4th tier: "didn't work out"		9 projects		51 projects	39 projects	All

Note: Phases according to timing of deals. Success rate between 1994 and 2014 = 21 per cent

Figure 11 presents the deals by tiers of success over time. Focusing on round 1 column (1994-2001), the first-tier investments are mostly the core assets already established and owned by incumbent firms. During this period, there was only one BEE deal that sank a shaft, a deal between Amplats and ARM. This is covered in Section B. The majority of other deals fall on the third and fourth tier of investment. In round 2, most of the mines are developed under deals with BEE partners, with few good investments in the first two tiers, but the number of fourth-tier deals jumps from nine projects in the previous period to 51 projects, explaining the majority of deals undertaken during the period. In round 3 (2008-2014), the BEE deals space in mining reduces considerably, with few brownfield deals in the second tier, but once again, most deals end up in the fourth tier. The final column of Figure 11 shows which of the investments ultimately failed by 2018. None of the first-tier investments failed. The one second tier investment that failed (i.e., Bokoni mine) is studied in Section B, Chapter 6. The majority of failed deals are in the third tier, while the fourth tier is by definition those deals that never took off in terms of sinking capital investment.

There are several questions about these patterns. For instance, which BEE deals are in the first and second tier, and why might they be successful? Who are the players behind these deals? What stands out about the low/failed investments in terms of the BEE partners involved? How do new partners emerge in the game? All these questions structured the case studies which follow.

4.4. Conclusion

The purpose of this chapter was to provide an overview and context of platinum mining, and an overview of patterns of deals. The chapter's contribution is that beyond the general "big picture" of less-than-potential capital investment in the platinum mining sector, there are several investments of varying success, each supported by some form of deal. This descriptive data provides the basis for the exploration undertaken in the following chapters.

This chapter concludes Section A of the research project. The following section, Section B, is a case study of Anglo American that focuses on the I-firm's strategy, deals, and investment performance. For every case study that follows, it sheds light on the reasons why some investments happen and become successful, and why others do not, in the context of the elite transformation project.

SECTION B. The strategies, deals and investment outcomes of patient capital

Section B provides the first of three case studies and is separated into two chapters. Chapter 5 is a *meso-micro level* study: it is meso-micro in terms of the theoretical framework outlined in Chapter 2.[45] Its aim is to surface the corporate strategy of Anglo American Corporation (or "Anglo") and its offshoot, Anglo American Platinum (or "Amplats"). Chapter 6 deals with the *micro and nano levels*, tracing the various corporate and asset level deals and associated subsequent investments over time.

Chapter 6 follows with an empirical study of (1) what happened with the deals themselves, (2) what happened with subsequent investment, and (3) how the outcomes might be understood in relation to the hypothesis and the theory laid out in Section A. Stated differently, Chapter 6 undertakes the investigation of the deals and investment performance, on the basis that Amplats is patient capital. The variation in Chapter 6 comes from two sources. The first source is the nature of the deal with government, and how this deal translates to investment. How this deal compares to a predatory I-firm will become clearer after reading Section C. The second source of variation in investment performance stems from the heterogenous characteristics of the BEE partners. The variations are explored in Chapter 6.

[45] That is, studying the organisation or oligopoly as the unit of analysis.

CHAPTER 5 Tracing the corporate strategy of the Anglo Group and the emergence of African Rainbow Minerals

Abstract

This chapter surfaces the corporate strategies of Anglo American and African Rainbow Minerals through a structured, empirically grounded narrative. It uses several scholarly, archival, and documentary sources to construct an original contribution of how to analytically understand the emergence, growth, and influence of these companies in the political economy of South Africa and, importantly, in the formation and success of the black economic empowerment policy. By constructing a "game" in which one can observe Anglo and ARM in action over multiple rounds, the study learns empirically the behaviour of patient capital, and how this behaviour has an agential role in the trajectory of capital accumulation and state-business relations in South Africa. The chapter highlights the importance of differences in corporate strategies in so far as, ultimately, corporate strategies interact with and affect sectoral and national development. Chapter 6 will advance these findings by studying their implications for capital investment, accumulation, and transformation.

Résumé

Ce chapitre présente les stratégies d'entreprise d'Anglo American et d'African Rainbow Minerals à travers un récit structuré et empirique. Il utilise plusieurs sources académiques, archivistiques et documentaires pour construire une contribution originale sur la manière de comprendre analytiquement l'émergence, la croissance et l'influence de ces entreprises dans l'économie politique de l'Afrique du Sud et, surtout, dans la formation et le succès de la politique d'autonomisation économique des Noirs.

En construisant un "jeu" dans lequel on peut observer Anglo et ARM en action sur plusieurs tours, l'étude apprend empiriquement le comportement du capital patient, et comment ce comportement a un rôle agentiel dans la trajectoire de l'accumulation du capital et des relations entre l'Etat et les entreprises en Afrique du Sud. Le chapitre souligne l'importance des différences dans les stratégies des entreprises dans la mesure où, en fin de compte, les stratégies des entreprises interagissent avec le développement sectoriel et national et

l'affectent. Le chapitre 6 approfondira ces résultats en étudiant leurs implications pour l'investissement, l'accumulation et la transformation du capital.

5.1. Introduction

How and why have economically important firms, Amplats and ARM, mitigated expropriation risk in a way that has supported sustained investment in platinum, despite generally low levels of investment and failing BEE companies industrywide? If one delves below the overall uninspiring surface narrative of the process of investment and transformation, one finds a more nuanced story of successes and failures and the schematic processes that produce these outcomes. The significance of this study, especially in the context of the post-apartheid transformation process, is that researchers, policymakers and business can (1) appreciate and therefore foreground the concept of credible commitment when designing investment-related policy, (2) learn what kind of arrangements or partnerships can provide confidence in and longevity to private enterprise, and (3) how and why these arrangements can be compatible with the objective of real racial elite transformation.

5.2. The Anglo American Corporation in the economy, the development, and the transformation of South Africa

The Anglo American Corporation – a South African company – has played a central role in the history of mining in South Africa[46]. With a combined market capitalisation of approximately R770 billion (circa US$90 billion), representing 18 per cent of the value of JSE top 100 companies in 2010, the company is a significant investor, committing approximately R148 billion (circa US$21.1 billion) in capital expenditure in South Africa between 1999 and 2010. This is approximately 3.5 per cent of South Africa's total GDP in 2010, compared to 8.6 per cent to GDP contribution by the total mining sector in 2010. The company is also one of the largest contributors to the South African fiscus, paying approximately R14.3 billion (circa US$1.95 billion) in direct and indirect taxes in 2010. Furthermore, the company generated export revenues of approximately R105 billion (circa US$14.3 billion) in 2010, and had about 91,500 employees in South Africa (Gomwe & Zikhali, 2011).

[46] Not to be confused with a foreign multinational company operating in South Africa. From inception, the company was domiciled in South Africa. This partly makes it distinct from peers such as JCI, Consolidated Gold Fields of South Africa, and Lonrho, that were domiciled in London, even though founded in Southern Africa.

By 2010, Anglo had evolved into an international enterprise, with several strategic assets remaining in South Africa that constituted 43 per cent of its business. These assets consist of platinum, iron, coal, diamond, and manganese. The first notable asset is Anglo American Platinum, the world's leading platinum producer, 79 per cent owned by Anglo. The second notable asset is the world's fourth largest iron ore producer, Kumba Iron Ore, circa 65 per cent owned by Anglo. The third notable asset is one of the world's largest private sector coal producers and exporters, Thermal Coal, 100 per cent owned by Anglo. The fourth notable asset is the world's leading diamond business, De Beers, 45 per cent owned by Anglo. Other notable assets include Samancor Manganese (40 per cent owned) and Exxaro (9.7 per cent owned) (Anglo American & *City Press*, 2017). Through Amplats, Anglo held several black empowerment joint ventures, including ventures with African Rainbow Minerals (Patrice Motsepe), Royal Bafokeng Platinum (the Bafokeng), and Mvelaphanda (Tokyo Sexwale). These partnerships constitute some of the leading black empowerment deals and are studied in subsequent chapters.

The company was founded in 1917 by Ernest Oppenheimer, with initial capital from UK and US sources providing the "Anglo" and the "American" to the company name (Hall, 2021). Between the mid-1800's to the mid-1900's, significant discoveries of diamond and gold led to the founding of several notable mining companies, including De Beers, Gold Fields South Africa (GFSA), Rand Mines, Johannesburg Consolidated Investments (JCI), General Mining-Union Corporation, and Anglovaal. Anglo grew to be the largest of these mining houses and would have considerable influence in most of these companies (Lewinsohn, 1938; Gregory, 1977; Innes, 1984). In 1962 it had majority participation in 22 investment companies, 13 gold mines, 15 coal mines, five copper mines, seven other mining companies, and 29 companies (Schmeisser, 1989). In 1968 Anglo was producing 40 per cent of the country's gold output and nearly 31 per cent of the non-Communist world supply (Hammond, Cooper & van Staden, 2017). By 1989, Anglo accounted for more than 50 per cent of the stocks traded on the JSE, permeating every corner of the South African marketplace: iron and steel production, engineering and heavy construction, automobiles and paper products, distilleries, and slaughterhouses (Schmeisser, 1989).

Through the changing political landscape in middle of 20th century South Africa, Anglo had grown large enough to play a central role in accommodating politically connected Afrikaner elites when they came into political power in 1948. This period became the origin of Anglo's learning the game of empowerment deals as one way to protect its corporate strategy of

sustained market-lead through capital-driven expansion. In other words, this was Anglo's "Round Zero".

Anglo would apply its experience of empowerment deal-making in the mid-1990s, when the company began to accommodate politically influential black elites connected to the ruling political party, the ANC. This period of the empowerment game was Anglo's "Round One". At the heart of Anglo's strategy was thriving through the changing political landscape and learning how to play politics in ways that protected its investment and market position.

So significant is the size of Anglo, that a focus on its role is almost sufficient to tell the overall story of black economic empowerment in mining in South Africa. On its own, Anglo is large enough to explain R60 billion of black empowerment deals between 1994 and 2004 compared to R100 billion committed by the mining industry as a whole (Southall, 2004), and large enough to explain the leading black empowerment enterprises or personalities in mining in South Africa (PMG, 2011).

5.3. Anglo American Platinum. Origins, evolution, and role in BEE

Amplats is the key player in platinum, and the main I-firm of Section B and Section D. The purpose of this section is to provide a brief overview of the I-firm, to make apparent its importance and, therefore, to give meaning to the rest of the chapter that covers Anglo American as a whole.

5.3.1. Anglo American Platinum in the present

Amplats is the world's leading primary producer of platinum group metals (PGMs or platinum), with a market capitalisation on the JSE of around R318 billion (US$18,33 billion) in 2022. Throughout the period of study, above 70 per cent of the issued share capital of the company is retained by Anglo (78 per cent in 2021).[47] The company undertakes a wide range of activities across the mining value chain, including exploration, mining, concentrating, smelting, refining, and marketing. The company has a long history of investing in research and development, creating markets for platinum by leading research on possible uses of platinum, as well as developing global supply chains focused on platinum (Amplats, 2022).[48]

[47] Source: Amplats (2021a).
[48] Common uses of PGMs include jewellery, auto catalytic converters, fuel cells, air and water purification units, heart pacemakers, computer screens, hard disks, and fertilisers. In recent years the high value of PGMs has seen platinum become a prime investment commodity alongside gold (Amplats, 2022).

Between 1994 and 2019, the four largest platinum producers, collectively about 90 per cent of total platinum production in South Africa, were Amplats, Implats, Lonmin, and Northam. During this period, Amplats explains 52 per cent of this production, Implats explains 27 per cent, Lonmin explains 15 per cent, and Northam explains 5 per cent. In 2018, Amplats employed 23,000 people directly, even after significant downsizing by shedding assets (Amplats, 2018a). In terms of share of BEE deals, the 2015 Intellidex report on the value of BEE deals shows that by 2014, Amplats had undertaken roughly R25 billion worth of BEE deals, by far the highest among its peers (Theobald et al., 2015).

5.3.2. The origins of platinum mining and Anglo American Platinum

To understand Amplats, it is necessary to outline some history, which involves both Anglo and the Johannesburg Consolidated Investments (JCI or Johnnies). In brief, Anglo acquired JCI and spun off its platinum assets to create Amplats.

Platinum was discovered in South Africa by Andries Lombaard and Hans Merensky in 1924. In response, several small companies were formed to exploit the discovery.[49] Most of these properties were brought under the controlling interest of JCI, making the company the leading platinum mining owner in the world (Sander, 2000). In 1963, Anglo acquired JCI in a determined bid to preserve control over the diamond, platinum, and gold interests that JCI had accumulated (Sander, 2000: 351). JCI later became the vehicle through which Anglo American would become the world's top platinum mining company.

JCI was unbundled in 1995 by Anglo into three parts, in the interests of black economic empowerment. First, the platinum assets were grouped together to form a new Johannesburg Stock Exchange-listed company called Anglo American Platinum (Amplats). From the onset, Amplats was the world's largest producer of platinum (Nxele, 2022). Second, industrial assets were spun off into Johnnic. Third, some gold assets were grouped for disposal under a smaller JCI.

A history of Anglo will detail how JCI would prove to be an important asset to Anglo's navigation of South Africa's changing political context. But first, the following provides a brief overview of the centrality of Amplats in the BEE deals space.

[49] These companies included Premier Rustenburg Platinum, Eerstegeluk Platinum Mines, and the Rustenburg Platinum Company – created by Gold Fields (Nxele, 2022).

5.3.3. Overview of Anglo Platinum's BEE deals and the expropriation risk

Amplats-specific deals began at the close of the late 1990s – Round One – under increasing uncertainty of the rules of the game pertaining to the security of mining rights. At the time, a commission to formalise BEE had just been established in May 1998 under the auspices of the Black Business Council, a large group of organised business allied to the ANC (O'Malley, 2004). Soon after its formation, one of the main outcomes of the commission was a resolution to transform the ownership of the mining sector by nationalising the mineral rights (as discussed in Chapter 1). For the first time, Amplats included a discussion of mining rights in its 1999 report, alluding to its concern over mining and mineral rights ownership. It emphasised the massive investments it had injected into the industry, arguing that "the growth and stability of the South African platinum industry depends on the long-term commitment of all stakeholders...Amplats' ability and willingness to sustain these developmental activities … are of necessity predicated on security of tenure of its mineral rights" (1999: 18).

Between 1999 and 2002, and with the benefit of having learned from Anglo's experience, Amplats concluded empowerment deals valued at more than R8 billion. This constituted the greater part of the 15 per cent empowerment target set by government for five years' time from the issue of the Act (Amplats, 2002a). The deals differed in form and extended to empowerment partners spread across three important groups: the organised black business, the ANC, and platinum land-owning communities. First, Patrice Motsepe was a member of the influential black business group NAFCOC.[50] He was invited into a 50/50 joint venture partnership with Amplats. Second, Tokyo Sexwale was a prominent ANC insider, given shares by Amplats in Northam platinum. Third, the Royal Bafokeng community held platinum rich land around Amplats' operations.

In 2002, after intense interactions with the Department of Mineral Resources (DMR), Amplats gave up several mining rights in return for keeping some strategic rights. It also agreed to undertake some partnerships with DMR chosen partners, such as Khumama platinum and Pelawan Investments, both ANC connected. All these deals are covered in detail in Chapter 6. It is sufficient to highlight that Amplats explains a significant share of empowerment deals in platinum.

[50] NAFCOC is the National African Federated Chamber of Commerce, is the oldest and largest black business chamber, historically close to the ANC.

Round Zero (1948-1994): Afrikaner Empowerment and Anglo's corporate strategy in action

Now that both Anglo and Amplats have been introduced, the rest of this chapter delves into the rounds of Anglo's corporate strategy, starting during the Apartheid regime.

5.4. Afrikaner empowerment and Anglo's corporate strategy in action

The purpose of this subsection is two-fold. First, it surfaces Anglo's corporate strategy in the mid-1900s by critically reading Anglo's actions or behaviour. Second, it examines how Anglo engaged with Afrikaner empowerment. It is helpful to begin here, because it builds historical insight into Anglo's corporate strategy under a similar game of racially based economic empowerment.[51]

The rise of the Afrikaners to political power in 1948 facilitated the entry of Afrikaner economic interests in mining in the 1950s, interests that could contest the dominance of Anglo. To this effect, the Afrikaner financial institution Sanlam founded Federale Mynbou (or Fedmyn) mining company in 1953 (Verhoef, 2018). Through the preferential procurement policies of the state, by 1962 Fedmyn had become the second largest coal company in the country after Anglo. This was the first instance of what racial preferential policy could achieve. In 1962, Fedmyn sought expansion beyond coal mining by seeking to take control of Johannesburg Consolidated Investments (JCI), an attractive mining house founded by Barney Barnato.[52] JCI held diamonds (25 per cent of De Beers), platinum and copper. Importantly, JCI controlled Rustenburg Platinum, the world's largest platinum mining entity.

Anglo also had ambitions to acquire JCI as part of its corporate strategy of expansion by acquiring primary producing mining assets. To that effect, Anglo acted by blocking Fedmyn's attempt, which led to state-sponsored attempts to seize some of Anglo's assets. To ameliorate the situation, in 1963 Anglo transferred to Fedmyn one of its gold mining subsidiary, General Mining and Finance Corporation, which was a less profitable gold mining asset. This was a

[51] It is important to note that these narratives are condensed so that they are fit for purposed. Therefore, omissions in the story are unavoidable given the word limit, and the need to produce a focused study.
[52] Barney Barnato was a major player in the early diamond and gold rush in South Africa in the 1800's and early 1900's. Direct study of this player is beyond the scope of this narrative, but readers may refer to Lewinsohn (1938) and Fish (1982) for in-depth studies of Barnato, and Sander (2000) for an in-depth study of the history of JCI between 1889-1995.

significant empowerment deal, because it was the first entry of Afrikaners in non-coal mining, described by O'Meara, (1983) as a "gift" from the Oppenheimers.[53]

The deal successfully diverted Fedmyn from seeking to take control of JCI, clearing the path for Anglo to subsequently acquire JCI. Thus, even though by end of the 1960s Afrikaner capital had made inroads into the mining industry, Anglo still dominated gold mining through its own mines and through control of JCI, Rand Mines and Central Mining.

Table 6 – Anglo's scale and reach; and other mining players, including emergent Afrikaner capital in the 1960s

Company	1960 Market capitalisation (£m)	1970 Ultimate controller
Anglo American Corporation	87.3	Anglo American
JCI	15.1	Anglo American
Rand Mines	12.7	Anglo American
Central Mining	15.5	Anglo American
General Mining	15.3	Sanlam
Union Corporation (General Mining)	32.8	Sanlam/Rembrandt
Anglovaal	5.7	Hersov/Menell families
Goldfields	33.7	Goldfields

Source: Innes, 1984:165.

Table 6 shows the extent to which Anglo had managed to take control of the majority of mining companies operating in South Africa by the 1960s. By the late 1980s, Anglo's corporate strategy had yielded a dominant mining and finance conglomerate occupying half of the JSE and permeating other enterprises through its holdings. In 1987, David Pallister published an extensive review of the Oppenheimer's business empire called "*South Africa Inc.: The Oppenheimer Empire*". Pallister calculated that the combined assets of all Oppenheimer-affiliated companies totalled R98.8 billion (Pallister, 1987). The South African Government checked in at R98.1 billion of assets in state-run enterprises (Kaplan et al., 1971; Granelli, 1988).

It is important to note that the then ruling political party, the National Party, was both suspicious and at odds with the Oppenheimers, particularly Harry Oppenheimer, who was a leader in the opposition party, the United Party. The National Party believed that Oppenheimer was convinced that exerting economic pressure could help him weaken the government and force

[53] In 1965, Federale and General Mining merged to form Gencor. Thereafter, Gencor grew its operations through acquisitions and greenfield investments over the next three decades across a range of mineral sectors. Gencor would later reverse offshore into Billiton in 1996 and subsequently the (Australia-based) global major BHP Billiton (O'Meara, 1983; Christianson, 2017b).

it to make concessions that would alter its appearance and power. In parliament in 1960 the Prime Minister Verwoed said

> Certain business undertakings hold private discussions in the same way as our political parties and in the same way as the Cabinet and in the same way as our Government. A business undertaking can be a very powerful machine. One finds large combinations of business undertakings such as the Oppenheimer group – an octopus in the sense that it has branches in all spheres of the economic life of South Africa.
>
> The directors, when they meet, hold private discussions. Nobody knows, however, what they discuss there. In the course of his speeches Mr Oppenheimer, the leader, makes political statements; he discusses political policy, he tries to exercise political influence. He even supports a political party. In other words, he has political aims; he wants to steer things in a certain direction. He can discuss those things secretly with groups of people on his board of directors. He can secretly cause a good many things to happen. In other words, he can pull strings.
>
> With all that monetary power and with this powerful machine... He can, if he so chooses, exercise an enormous influence against the government and against the state. (Hocking, 1974: 369).

Indeed, this period shows how Anglo managed the Afrikaner empowerment period in ways that maintained its dominance. The form of its first empowerment deal was disposing of marginal assets to divert Afrikaner capitalists (and the state) from control of its current and targeted assets. Thus, Anglo spent Round Zero (1948-1989) learning strategies and approaches to empowerment. Secondly, Anglo operated in the apartheid era where there were fractions of Afrikaner capital that were more aligned with the state. Therefore, Anglo learned two critical points in a racial empowerment setting. First, Anglo learned to understand the importance and workings of political connections as a strategy to gain protection from hostile expropriation-related policy inclinations. Second, it learned that shedding some of its marginal assets could be a potent way to establish tangible connections with an influential entrant group or individuals, and a way to win space to acquire attractive assets that it could keep on a 100 per cent basis. Overall, the lessons learned during this round of the game would be used to maintain an Anglo-friendly South Africa in the next rounds of the changing political context and ruling party.

Round One (1994-2001). Anglo learning the game of BEE and good partnerships

5.5. The 1990s and Anglo's initial search for BEE partners in mining

In the early 1990s, as the momentum behind a peaceful political transition gathered steam, the owners of mines faced the possibility of a loss of profits through either greater taxes or nationalisation. Anglo responded to this change in two critical steps. The first was to protect its investments from the uncertain future in South Africa by ”offshoring” some of its assets. Specifically, in 1993, Anglo placed all of its offshore assets out of reach from a looming democratically elected government in South Africa by selling the South American, European, and Australian operations of both Anglo and De Beers to Minorco in exchange for US$1.4 billion of Minorco stock (ANC Policy Institute, 2012). The second step of Anglo’s response was to “re-make” and “re-position” itself to cement a certain (rather than uncertain) future in the “new” South Africa. The JCI company that it acquired would be its main instrument for initiating black empowerment.

As its first move to establish a BEE presence in gold mining using JCI, Anglo turned to ANC stalwart, Mzi Khumalo, who had won the competitive bid against another ANC leader, Cyril Ramaphosa. To Anglo, Khumalo seemingly had the right profile. As a youth, Khumalo joined the ANC’s clandestine army and trained in the Soviet Union. He was captured in 1978 and spent 12 years on the Robben Island prison along other ANC struggle stalwarts such as Nelson Mandela and Tokyo Sexwale (McNeil, 1998). Soon after his release in 1990, Khumalo became ANC provincial treasurer in Kwa-Zulu Natal. In 1994 he founded Capital Alliance. The company was quickly backed by Saflife, an insurance conglomerate, and Investec. Within two years, Capital Alliance had several financial interests and was said to be worth more than US$1 billion (McNeil, 1998). Anglo bought into this stellar profile.

Khumalo's real breakthrough moment was the JCI deal. By a mere 12 South Africa cents per share, Khumalo's consortium outbid Ramaphosa’s consortium, which was also bidding for JCI. The deal saw the transfer of 34.9 per cent of JCI, with JCI instantly becoming a potent symbol – the first mining house controlled by black shareholders (McNeil, 1998). JCI (gold) held good quality assets worth more than R4 billion at the time.[54]

[54] The assets were as follows: (1) Gold - H.J. Joel (57%), Randfontein Estates (31%), Western Areas (35%), Lindum Reefs(84%); (2) Coal – Tavistock (100%), United Carbon Products (UCP) (58%); (3) Base metals – Consolidated Murchison (33%) – antimony and gold; (4) Chrome – Consolidated Metallurgical Industries; (5) Mineral Rights – 41% of Freddev, 45% of Barnex; and (6) Platinum – Amplats (7%), Johnson Matthey (9%).

Using debt from a financial company called Saflife to finance the transaction, the deal was struck with Anglo at R54.50 a share (a total cost of R2,9 billion for the mining house) payable in February 1997. However, between February and October 1997, the JCI share price fell to R20, exposing Capital Alliance shareholders to bankruptcy. Within one year, JCI ran into difficulty as the gold price continued to fall below $300 per ounce. The company was broken up in September 1997 (ANC Policy Institute, 2012).

While Anglo's initial attempt into mining-BEE was thus seemingly a failure, its efforts to alter the corporate form of its mining holdings were not entirely in vain. Anglo used the JCI assets to optimise Anglo's global position, cherry picking and buying back some of JCIs gold mining assets at distressed prices and using the opportunity to resolve its difficulties with the EU competition authorities (ANC Policy Institute, 2012). To resolve the failure of the JCI empowerment transaction, buying back some of JCI"s gold mining assets also gave Anglo the opportunity to "try again" with hopefully a better BEE partner.[55]

5.6. How did the JCI empowerment deal fail?

From the perspective of Anglo seeking a "good partner" to effect its first BEE deal, why did the deal collapse? To trace the reasons for this collapse surfaces the story of variations in partners and the corporate strategies of entrant capital. Specifically, the following surfaces the character of the extreme end of predatory capital. The section is also necessary to demonstrate the learning phase Anglo underwent. For reasons of clarity, there are three distinct phases of JCI in the following story. First, there is the original Anglo-owned JCI, which will retain its name in this discussion. Second, there is the JCI transferred to Khumalo, mainly consisting of gold mining assets. This will be referred to as JCI-Khumalo. Third, is the breaking up of JCI-Khumalo after its collapse, with much of the assets going to Brett Kebble (discussed shortly). This JCI will be referred to as the JCI-Kebble.

The collapse of the JCI-Khumalo deal was more than a matter of market fundamentals, as suggested by the preceding section, because at the level of partnership a sinister game was unfolding. Enter Brett Kebble, who in this tale is an analytically useful "empowerment partner" and a "counterfactual" to Motsepe, discussed below in Round Two. Kebble was a "behind the

[55] This is how Anglo bought back the assets from JCI. Anglo swapped its 26 per cent shareholding in Lonrho for JCI's 36.6 per cent holding in Western Areas, JCI's 60 per cent stake in Joel as well as its 3 per cent interest in Amplats. JCI then resold for cash its 26 per cent interest in Lonrho back to Lonrho. JCI then unwound its remaining holdings, passing shares in JCI Gold, Randfontein Estates and other assets back to shareholders (ANC Policy Institute, 2012).

scenes" partner in JCI-Khumalo, who partly funded the deal, with a game plan to steal the ownership of JCI-Khumalo. What follows below is how Kebble made his money, and how he mastered the overtaking of JCI-Khumalo, leading to a failure of the empowerment deal.

Brett Kebble, a South African white man, enters the scene in 1992 as a freshly minted lawyer. According to research by Barry Sergeant in *The Kebble Collusion* and media reports in the *Mail & Guardian*, Brett Kebble, together with his father Roger Kebble, bought an old, wrecked gold mining company called Rand Leases for one cent per share[56]. Within a year, the stock would be trading at R1 per share, a hundredfold increase (Ryan, 2005; Sergeant, 2012). [57] In December 1994, he engineered a takeover of another gold mine, Randgold and merged it with Rand Leases. [58] A year later, in 1995, Kebble had "created" hundreds of millions of dollars of "value" in Randgold (Ryan, 2005, 2006; Sergeant, 2012). [59]

However, for Brett Kebble, the star attraction was JCI. At that time, Anglo had it on offer for black empowerment purposes. He inveigled his way into the transaction by offering to fund Khumalo's personal stake held through Khumalo's MK Enterprises. This took a series of steps, detailed in the footnote.[60] The takeaway is that Kebble used financial engineering to become an instant billionaire, used this profile to fund Khumalo, then seemingly supported Khumalo as the face of the JCI deal. In reality, the finer details of the contract meant that Kebble was underhandedly in control of JCI-Khumalo (Sergeant, 2012).

With the gold price continuing to fall during 1997, along with Mzi Khumalo's blunders in leading JCI-Khumalo, Kebble acted with the board to fire Khumalo (*Mail & Guardian*, 2003). Kebble then presided over the breaking up of JCI-Khumalo, through which he could quietly gain personal, direct control of some assets. He achieved this by quietly buying out distressed investors in JCI-Khumalo, specifically the gold division which housed some quality gold

[56] Located in west of Johannesburg.
[57] R40,000 paid for the asset to a market value of R4 million (Sergeant, 2012).
[58] Full name is Randgold & Exploration.
[59] Brett Kebble worked with his father, Roger Kebble, who was the head of Randgold (Ryan, 2005).
[60] Operating under the cover of the JSE, Kebble very quietly took control of a listed company, New Kleinfontein Properties, and changed its name to Consolidated African Mines (CAM). Then, CAM issued 245 million shares to acquire another listed company, Consolidated Mining Corporation (CMC), a near worthless mining house with interests in gold, diamond, and asbestos exploration. The shares were issued at 600 cents each, equal to a value of R1.5 billion. In effect, by issuing shares to himself (CAM to CMC), Brett Kebble was a billionaire, but on paper only. He then used Khumalo as a front by appointing him chairman of CAM, and acquiring 34.9 per cent Saflife, which in turn owned 30 per cent beneficial interest in JCI Limited. CAM also held 6 per cent directly in JCI (Sergeant, 2012). Kebble then backed Mzi Khumalo as chairman of JCI, while publicly ingratiating himself to the notion of BEE. Effectively, by mid-1997, Brett Kebble was in control of JCI Limited, positioned to turn it into his version of a Kebble-JCI.

assets.[61] As JCI-Khumalo was being liquidated, the gold division was protected at Kebble's convincing, and a secret plan to create JCI-Kebble was hatched. Finally in 2002, Kebble mounted a single transaction that took out all the remaining minorities in JCI-Khumalo gold division, effectively creating JCI-Kebble. He then installed a respected and Mbeki-aligned black business professional, Wiseman Nkuhlu, as chairman of JCI-Kebble, maintaining that black economic empowerment was truly at work (Sergeant, 2012).

JCI-Kebble's single biggest asset, in turn, was a majority stake in Western Areas gold mine, which in turn originally held 100 per cent of South Deep mine. South Deep was and remains one of South Africa's biggest gold deposits. As such, Brett Kebble's single biggest personal investment, indirectly, was in South Deep – effectively owning more than 40 per cent of South Deep. Unlike a surface gold mine, however, South Deep was going to take many years to develop – two decades. It would absorb billions of rands before it could become cash-flow positive. Starting in 1999, Brett Kebble apparently started to divert some financial resources from Rand Leases in unauthorised transactions. The amounts diverted are cited above R1.5 billion at 2005 prices (Ryan, 2005, 2006). Kebble also raised billions in debt, partly through speculative financial products and other financial engineering tactics (Sergeant, 2012).

Moreover, to sustain his dealings and fight off enemies like Mzi Khumalo – who was close to Mbeki – Kebble worked with several ANC cadres. He also focused, in particular, on developing close ties with the leadership of the ANC Youth League, financing a number of its functions, and co-opting the organisation into various "black economic empowerment" deals. Kebble extended his strategy into the police system, by bringing onside the national police commissioner, Jackie Selebi, as well as hosting many breakfasts with the police minister, Charles Nqakula. Kebble also made millions of donations to the ANC, partly financed by proceeds from his "creative" business deals (Sergeant, 2012).

Ultimately, Kebble's underhand methods of accumulation became increasingly visible to stakeholders, leading to the demise of JCI-Kebble and his murder. For the purposes of this study, tracing the JCI deal has so far illuminated the game of empowerment and one possible trajectory of the game, closely associated with the type of partner involved. Anglo was involved in the deal in so far as the I-firm either had not conducted its due diligence in vetting partners and keeping close oversight over the deal, or more likely, Anglo had been unaware that beyond political connections, the type of partner matters for the success of a deal. The collapse of the

[61] Kebble bought out these shareholders by issuing CAM shares. See note above on CAM.

JCI-Khumalo deal meant that Anglo had little to show for its efforts. This was a round of learning the BEE game for Anglo.

Before characterising Anglo along the patient-predatory spectrum it is useful to introduce an entrepreneur who turned out to be pivotal to Anglo's approach to BEE, Patrice Motsepe. Motsepe, in a nutshell, is the antithesis of Brett Kebble.

Round Two (early 2000s). Finding a good partner in Patrice Motsepe's African Rainbow Minerals

5.7. Motsepe in the 1990s decade. A contrast to Kebble

This section progresses to the second round of Anglo's early engagement with black empowerment deals. The I-firm can be seen actively picking up the pieces of the JCI-Khumalo deal, and reworking the deal with a different BEE partner not directly the product of the ANC. This section documents the emergence of the BEE partner and his early days in mining, and his interactions with Anglo in relation to the JCI gold assets. All this lays a foundation for future deals in platinum between Amplats and the partner.

The collapse of JCI under Mzi Khumalo mattered greatly to Anglo, which sought to build and maintain durable and credible black partnerships. Should these disappear, the failure of black empowerment would threaten its own future in the new South Africa. As JCI-Khumalo broke up into parts in 1997, Anglo bought back its original stakes of some of the gold assets.[62] Anglo would then seek a new black partner into which to transfer these assets. This was Anglo's Round Two iteration in the game. It would find Patrice Motsepe.

Brett Kebble entered the scene in 1992 as a newly qualified lawyer, thereafter, bought an ailing mine with the help of his father, turned it around and used that success as the basis for his exploits. Ironically, Motsepe emerged in a similar manner. Motsepe qualified as a lawyer in 1988, and joined Bowman Gilfillan, where he specialised in mining and business law. His father, Kgosi Augustine "ABC" Motsepe, was himself a successful entrepreneur and chief.[63] Motsepe senior helped his son to access an array of opportunities and information limited to the elite at the time (Barnard, 2015). In 1990, Motsepe junior became a Member of the Council of NAFCOC (Nxele, 2022), one of the oldest black organised organisations in South Africa and a long-standing supporter of the ANC. Providing expertise as a legal advisor, Motsepe

[62] Specifically, these assets were the Western Areas gold mine and the H.J. Joel gold mine.
[63] Chief of the Mmakau community in the North West province, South Africa.

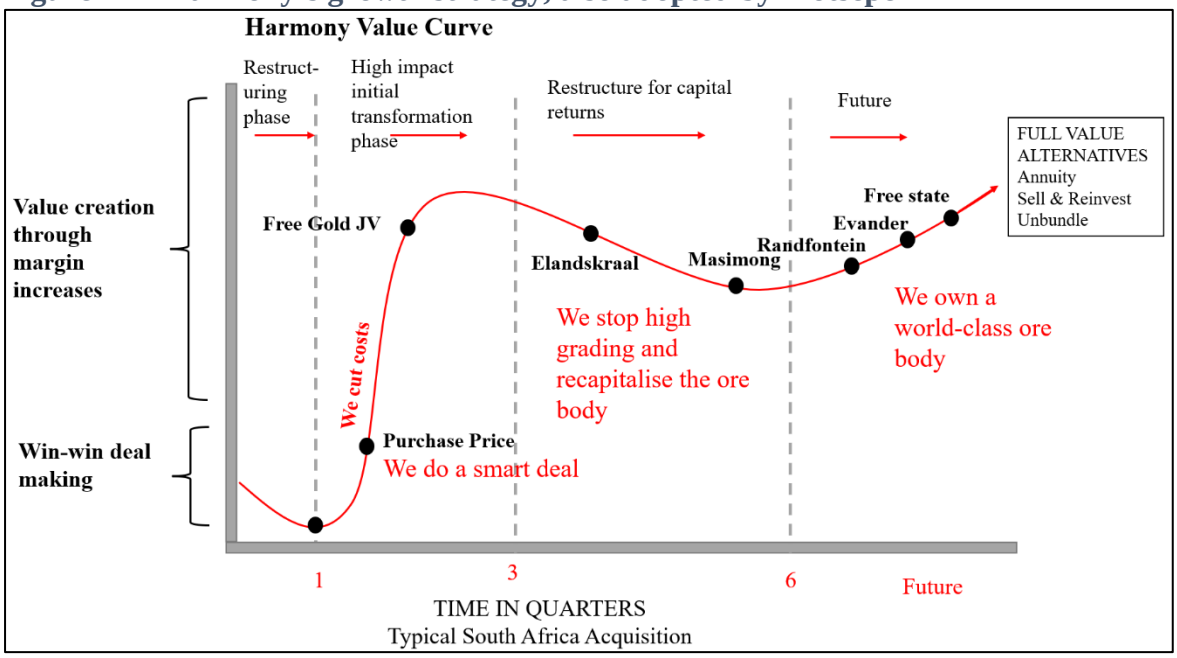
obtained the opportunity to engage and network within NAFCOC. These connections would prove handy in his future ascent up the social ladder *(Mail & Guardian*, 2014).

With the favourable turn of prospects in 1994, Motsepe founded a mining services company, Future Mining, which focused on providing services to mining companies (Levy, Hirsch, Naidoo, and Nxele, 2021). He believed he could apply management techniques to convert less productive shafts into profitable operations (Etheredge, 2009). In a short space of time, his hands-on involvement proved a great success.

A year later, in 1995, Future Mining and a reputable gold mining company, Harmony Gold, entered into a joint venture under a company they called Clidet No. 383. Harmony was at the time headed by a credible mining professional, Bernard Swanepoel, who was a hands-on mining manager. Swanepoel identified Motsepe's similar hands-on style in mining sites. At the time, Harmony was under Randgold, the entity taken over by the Kebbles in 1994. Randgold had a controlling stake in Harmony and a management agreement in place (Sergeant, 2012). Swanepoel was not comfortable being in a Kebble-controlled company with its dubious business principles. From a partnership perspective, the corporate strategies of the two companies were divergent: the speculative Kebbles contrasting with the production oriented Swanepoel.

Therefore, at the takeover of Randgold by the Kebbles, Swanepoel's first success was the cancellation of the management agreement, replaced by a service agreement (Harmony, 2021). This allowed Harmony to secure some autonomy from the Kebbles. Bernard Swanepoel, who was also a director in Randgold, sought to separate Harmony from the Kebbles, and successfully managed to cancel the standing service agreement in 1997, making Harmony an operationally independent gold mining company. In this way, he could drive Harmony's hands-on growth strategy, with Motsepe as partner (See Figure 12). Motsepe named his new gold company African Rainbow Minerals (ARM).

Figure 12 – Harmony's growth strategy, also adopted by Motsepe



Source: Swanepoel (2002: 7)

The model was clear. Referring to the Figure 12 above, Swanepoel aimed to identify struggling gold assets that Harmony could buy at a low price (a win-win deal), then turn them around into world-class assets (by recapitalising the ore body).[64] Motsepe (African Rainbow Minerals) would soon learn and adopt this method.

From the outset, Motsepe used this strategy to generate cashflow in order to sustain investments in other acquisitions and future greenfield projects. This track record proved useful when Anglo sought new, credible beneficiaries for the JCI gold assets recovered from Khumalo.

Winning Anglo's bid for the re-transfer of JCI gold assets essentially launched Motsepe firmly as a mining industrialist. Anglo disposed of the assets incrementally, starting in 1998. Motsepe bought some of these marginal mines and proceeded to restructure and manage these directly under his company, ARM. Having no access to a bank loan of approximately $8.2 million, Motsepe entered into an agreement with Anglo to repay the price through the company's

[64] The Harmony strategy, in detail, is as follows. "Harmony's strategy of acquiring mature low-margin operations, with turnaround potential, is clearly illustrated through the Harmony Value Creation Model. Harmony operates on the principle that a "win-win deal" is necessary to complete transactions. This implies that the value of the asset acquired must be well understood by both parties in order to offer a sufficiently attractive price for the seller, while not destroying value for the Harmony shareholder. Upon acquiring a new asset, we immediately start restructuring the mine. A restructuring plan is introduced which addresses overhead costs, working costs and organizational structures. This generally results in much higher cash operating profits. The long-term viability of these assets must now be ensured. At this stage we can afford to stop high grading and to spend more on development programmes to improve our mining flexibility" (Swanepoel, 2002: 7–8).

production-based profits. Anglo was aware of Motsepe's previous reputable mining contract services company, and had observed his success and ambition to venture into the mining business (Adams, 2008). As a result of implementing the Harmony model, Motsepe paid back the loan in three years. This was phenomenal feat – a black mining productionist repaying a loan by successful production strategy – was new in BEE partner. It challenged the convention of BEE partners who rely on contracts purely based on market performance (dividends) to repay loans.[65] Motsepe extended this model by working physically at the mines, so that he could supervise operations directly (Ventures Africa, 2012).

The success of the Motsepe-Harmony partnership made it a preferred beneficiary for Anglo's further disposal of JCI gold assets, between 2001 and 2003 (Competition Tribunal, 2002; Anglo American & *City Press*, 2017). All the Anglo gold mines located in the Free State were sold to the Motsepe-Harmony joint venture in November 2001. [66] Management passed to the joint venture on January 2002 (Godsell, 2001). [67] The joint venture aimed to look at other mothballed mines in the area to find ways to bring them back into production. At this point, Patrice Motsepe planned to list his company, African Rainbow Minerals, in 2002 (Fin24, 2001).

5.8. Motsepe in the early 2000s. ARM takes over Anglovaal, with support from Anglo

The listing of African Rainbow Minerals would involve the swallowing up of a crumbling yet operationally robust historical mining company, the Anglovaal company. This final section briefly outlines the process of Anglovaal's collapse and the formation of what would become a BEE success story, Motsepe's ARM mining company.

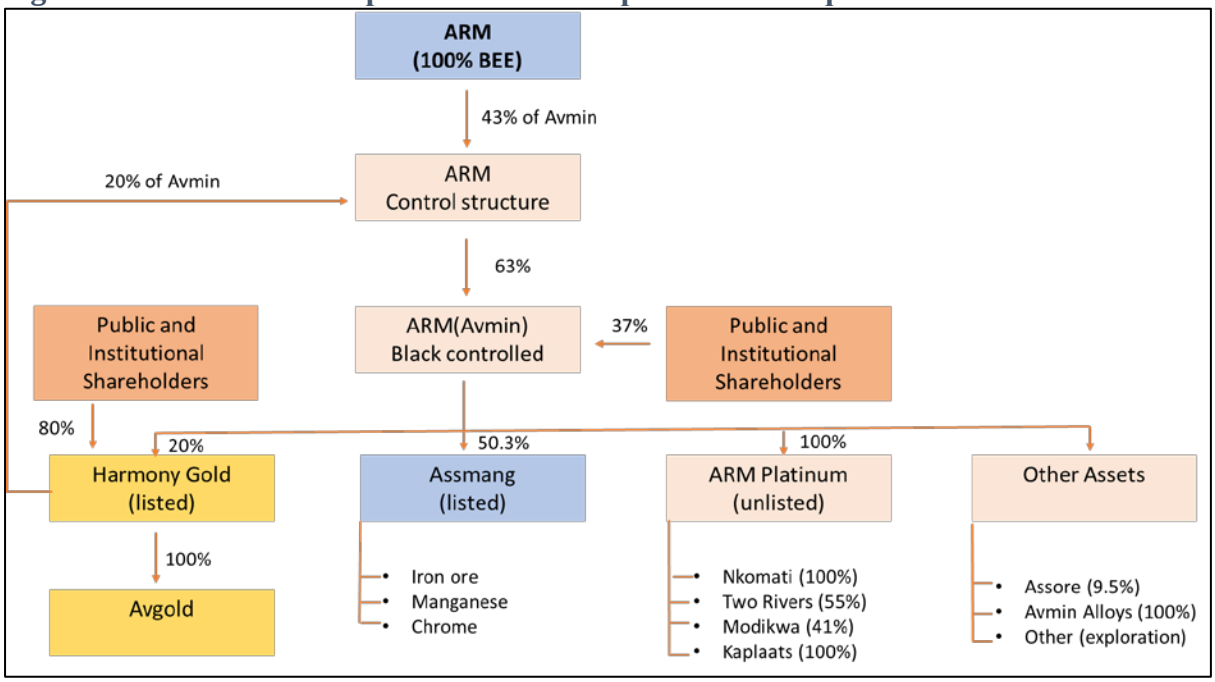
Anglovaal was established in 1932 by the Menell and Hersov families, who became mining randlords in South Africa. In 1999, Anglovaal unwound the pyramid structure which allowed the Menell and Hersov families to exert 51 per cent control over the conglomerate, separating its mining and industrial holdings under Anglovaal Mining (Avmin) and Anglovaal Industries (AVI) respectively. The process was completed in 2001 with the Menell family taking 50.4 per

[65] This is such a rarity that this research could not find another example, broadly, within mining in South Africa.
[66] These mines' names were Bambanani, Joel, Tshepong, and Matjhabeng.
[67] For a consideration of R2.2 billion.

cent control of Avmin and the Hersov family controlling 50.4 per cent of AVI. Avmin housed the mining assets of the former conglomerate, listed in the footnote.[68]

Avmin fell into some financial difficulty at the beginning of 2000. Anglo American bought Avmin and took control of the company, leveraging this to acquire control of the iron ore assets under Avmin and Kumba (Anglo American, 2002). Now in control of Avmin, Anglo prepared to transfer this asset to Motsepe. The ARM/Harmony joint venture had been a success, and Motsepe was ready to go at it alone. The joint venture was unbundled, with Anglo American and Harmony making a deal with Motsepe to take over Avmin, enabling Motsepe to list African Rainbow Minerals on the JSE.[69] On inception, the listed entity ARM had a market capitalisation of about R6.9 billion.

Figure 13 – ARM 2002 corporate structure – post Avmin acquisition



[68] (1) Gold and platinum under Avgold: Target and ETC gold mines and the new Two Rivers Platinum (55%) project (a JV with Impala Platinum, 45%); (2) Base metals – nickel through the Nkomati nickel mine (75%); (3) Base metals – cobalt/copper through Chambishi Metals plc (Chambishi) (90%); (4) Ferrous metals (iron, manganese, and chrome ores) through Assmang Limited (50%); (5) Iscor Limited (13%); and (6) Assore Limited (18%) – which holds Assmang shares.

[69] Details of the unbundling: In May 2003, ARM Gold was vended into Harmony by Motsepe. In exchange ARM acquired a 14 per cent share in Harmony, becoming its largest shareholder with Motsepe taking the Chair. This transaction raised the black ownership of Harmony from 14 per cent to 20 per cent. In the same month, the ARMgold/Harmony joint venture acquired 34.5 per cent of Avmin. Between November 2003 and April 2004, Avmin disposed of its entire 42.2 per cent interest in Avgold to Harmony, and in return Harmony disposed of its Kalplats platinum discovery and associated mineral rights to Avmin (Harmony, n.d.). In other words, Harmony took gold assets, and gave Avmin its platinum assets, in preparing Avmin for a takeover by Motsepe. Finally, in 2004, Harmony used its balance sheet to assist ARM gold and Harmony to jointly acquire Anglo American PLC's 34.9 per cent stake in Avmin. The result was that all the gold assets were consolidated within Harmony, while Motsepe's ARM took control of the renamed Avmin, and listing it as African Rainbow Minerals.

Source: African Rainbow Minerals (2004: 11)

Figure 13 above shows the structure of ARM after acquiring Avmin. ARM's stated strategy then was to diversify its minerals portfolio by developing the various projects already in its portfolio. Motsepe would go on to participate in several joint venture deals that catapulted ARM into a diversified producing company. As discussed further in Chapter 6, these included two major BEE operated platinum assets, the Modikwa asset (deal with Amplats), followed by the Two Rivers asset (deal with Implats), and later, the Bokoni asset (deal with Amplats).

5.9. Conclusion. Placing Anglo and ARM on the capital spectrum

The purpose of this chapter was to trace the corporate strategy of Anglo American to place Anglo/Amplats on the patient-predatory spectrum. The method was process tracing the story of the company using several sources dating as far back as the 1940s, to emerge with an analytic narrative of Anglo in action. The other aim of the chapter was to study the early BEE partnerships of Anglo, with a particular aim to single out Patrice Motsepe (African Rainbow Minerals). The story of Motsepe emerged with a counterfactual, Brett Kebble and, to some degree, Mzi Khumalo.[70] What emerges is material that enables a provisional characterisation of Anglo and Motsepe along the capital spectrum below. Whether this characterisation holds empirically in terms of fixed investment performance is a question that Chapter 6 explores.

5.9.1. How does Anglo benchmark against the capital spectrum?

To characterise Anglo, the chapter uses the analytical tools developed in Chapter 2, specifically the capital spectrum.

One of the striking attributes of Anglo is not only its mastery of making profits through innovative mining operations rather than passive mining finance, but its particular insistence on being a South African company for South Africa. The narrative in this chapter reveals a company that is ruthless in business, but strategically farsighted, thoughtful, and treats South Africa's political economy as part of its life and growth, rather than working around the political economy. A quick review of the rest of the characteristics of patient capital in Chapter 2 suggests that Anglo sits on the favourable, patient side of the capital spectrum.

[70] Khumalo could be likened to Kebble, and indeed goes on to outsmart Kebble in several Kebble-like transactions both in South Africa, Zimbabwe, and other African countries. But these dealings are outside the JCI deal, and therefore outside the scope of this chapter.

In *A Man of Africa: the Political Thought of Harry Oppenheimer*, an anthology of scholarly contributions that study and describe Harry Oppenheimer, the editor of the book (Rajab, 2017), notes the following that corresponds to patient capital. He says that Harry Oppenheimer's formative years were

> … shaped during a period in which industrialists of prominence seemed as concerned with building new societies and nations as they were with the grubby business of making money. Expansion and creativity were the driving forces of the day; the orbit of high finance and financial speculation were yet to come to the fore. The creation of a new steel mill, for example, or the opening up of the hinterland through a rail network was viewed not purely in terms of financial profit but also as to whether it contributed to society (21).

Table 7 - INSTRUMENT 1: Anglo/Amplats and ARM score on the capital spectrum

	Company types					
Attributes	Patient/Producer company *(farsighted)** *(1)*	Investment-holding company *(2)*	Opportunistic *(3)*	Predatory *(4)*	Anglo/ Amplats score *(5)*	ARM score *(6)*
Incentives or behaviour						
Focus is on fixed investment, production, and skills	+++	++	+	0	3	3
Patient capital invests in exploration and mine development	+++	++	+	0	3	2
Patient capital creates a pipeline of fixed investment projects	+++	++	+	0	3	2
Patient capital seeks for patient JV partners	+++	++	+	0	2	2
Patient capital seeks long-term production-based deals with partners	+++	++	+	0	2	3
Patient capital deploys its own balance sheet capital to domestic investment	+++	++	+	0	2	2
Patient capital, or its corporate strategy, sits above political factions	+++	++	+	0	2	2
Majority of revenue comes from sales of produced goods and services	+++	++	+	0	3	3
Maximum score	24	16	8	0	20	19

Table 7 (Instrument 1) above is the capital spectrum presented in Chapter 2. The instrument captures and summarises company types along a spectrum. Taking a conservative grading of Anglo in column 6, Anglo scores 20 out of 24 points. This places the I-firm on the patient side of the spectrum. The story documented in this chapter may be minimally sufficient for such a scoring exercise. The true test is how does Amplats translate itself into a capital-investing company? Will it be found to be supporting transformative productive black empowerment in mining, and therefore making the development policy of black economic empowerment and the required investment a success? Chapter 6 will evaluate these questions empirically.

5.9.2. Where does Motsepe sit on the capital spectrum?

The story of black economic empowerment, to put it in the terms of institutional analyses terms, is one of personalised institutions, where personalities matter. [71] Within the period of early BEE narrated so far in Chapter 5, qualifying empowerment partners must have political influence or legitimacy related to the ANC. The two paths of connection to the ANC seen so far are direct ANC insider, and leader of the ANC-allied black business organisation NAFCOC. Motsepe finds himself in the vicinity of top black empowerment not directly through the ANC, but through his background connections and relationships with prominent ANC members. His credibility, however, is tangibly demonstrated by his business acumen and commitment to becoming a mining industrialist. His success in converting failing mines into successful operational mines happens during a difficult time, when several BEE deals in South Africa were collapsing because the models depended on market-pegged financial performance.

This chapter demonstrated how, from the outset, Motsepe founded a tangible company dealing with gold mining waste, Future Mining. He then purchased some marginal loss-making mines from Anglo, turning them quickly into profit-making mines, enabling him to pay off the entire debt due to Anglo. As crisply stated by researcher Andrew Bowman, "[r]ather than an investment holding company, Motsepe developed an operational mining company" (2019: 8).

Given this demonstrated background, and Motsepe's successful partnership with Harmony, Anglo redeems its failed JCI-Khumalo deal by partnering with Motsepe, first in disposing of gold mines, then in joining hands in platinum to develop a new mine, the Modikwa Platinum mine (See Chapter 6). In fact, Motsepe would go on to partner in several other productive (rather than passive shareholding) joint ventures and diversify the company into an industrial company. Joint ventures allowed ARM to navigate several entry barriers: access to reserves, smelting and refining capacity, and technical expertise. Additionally, through his preference for joint-operating ventures, Motsepe benefitted the incumbent partner by sharing capital expenditure instead of diluting existing shareholders (Bowman, 2019).

To analytically appreciate a Motsepe type, the story of JCI-Khumalo and JCI-Kebble was useful. Kebble is the perfect analytical counterfactual of Motsepe, with similar beginnings, and totally different endings. The Kebble type is one interested not in production, but in speculative assets. What makes Kebble an extreme is the drive to achieve his goal through stealing and

[71] See North, Wallis and Weingast, 2009; Levy, 2014.

corruption. The outcome of passive equity-holding ambition need not be a failure of development policy, if conducted by good, credible partners. But the Kebble story provides a caution to the kind of logic that develops from passive, instant yet superficial wealth.

Table 7 above conservatively scores African Rainbow Minerals at 19 out of 24 points. This provisional score is also tested in Chapter 6 at the deal-investment level over time.

Before comprehensively assessing the hypothesis, the study must evaluate each of the case studies that follow to emerge with helpful conclusions about the relationships between corporate strategies along the capital spectrum, and the resultant deals and investments. What Chapter 5 has achieved, which is hard to know otherwise, is an investigation of the stories of Anglo and ARM with sufficient material to use the capital spectrum. This process adds empirical substance to the proposition that one can observe firms in action over time in ways that reveal attributes that one can code for systematic study. Having achieved this research objective, Chapter 6 takes the results of this chapter to explore from a platinum sector, BEE game perspective, how patient capital navigated the pressures of expropriation in investment and transformation in compatible ways. What is also interesting in the following chapters is whether or not the earlier characterisation changes during the tracing of specific deals.

CHAPTER 6 (Micro and Nano level). Amplats. Tracing two-level deals, and subsequent investments and transformation

Abstract

This chapter traces the deals and resultant capital investments of Anglo American Platinum mainly between 2000 and 2018. Using multiple data sources such as annual reports, Nedbank fixed investment data, and archives of company news, announcements, and circulars in McGregorBFA, the chapter shows how and why an economically important firm, Amplats, mitigated expropriation risk in a manner that has supported sustained investment and transformation in platinum, despite generally low levels of investment and failing BEE companies industrywide. Delving below the generally uninspiring picture of BEE and investment, the study provides a subtle reading of successes and failures and the schematic processes that produce these outcomes. The nuances lie in the quality of deals and partnerships that act as the mechanisms of credible commitment. Where there are shortfalls in enforcement, the shadow of the robust rule of law is shown to play an important role in facilitating deals, though the law cannot replace the need for deals as credible commitment devices. The significance of this study, especially in the context of the post-apartheid transformation process, is that researchers, policymakers and business can now (1) appreciate and therefore foreground the concept of credible commitment when designing investment-related policy, (2) learn what kind of arrangements or partnerships can bring confidence and longevity to private enterprise, and (3) how and why these arrangements can be compatible with the objective of real racial elite transformation.

Résumé

Ce chapitre retrace les transactions et les investissements en capital qui en résultent pour Anglo American Platinum principalement entre 2000 et 2018. À l'aide de multiples sources de données telles que les rapports annuels, les données sur les investissements fixes de Nedbank et les archives de nouvelles, d'annonces et de circulaires de l'entreprise dans McGregorBFA, le chapitre montre comment et pourquoi une entreprise économiquement importante, Amplats, a atténué le risque d'expropriation d'une manière qui a soutenu un investissement et une transformation durables dans le platine, malgré des niveaux d'investissement généralement faibles et des entreprises BEE défaillantes dans l'ensemble du secteur. Au-delà du tableau généralement peu reluisant du BEE et de l'investissement, l'étude propose une lecture subtile des succès et des échecs et des processus schématiques qui produisent ces résultats. Les nuances résident dans la qualité des accords et des partenariats qui servent de mécanismes d'engagement crédible. Lorsqu'il y a des lacunes dans l'application de la loi, l'ombre d'un état de droit robuste joue un rôle important pour faciliter les transactions, bien que la loi ne puisse pas remplacer le besoin de transactions en tant que mécanismes d'engagement crédible. L'importance de cette étude, en particulier dans le contexte du processus de transformation post-apartheid, est que les chercheurs, les décideurs politiques et les entreprises peuvent désormais (1) apprécier et donc mettre en avant le concept d'engagement crédible lors de la conception de politiques liées à l'investissement, (2) apprendre quel type d'accords ou de partenariats peut apporter confiance et longévité à l'entreprise privée, et (3) comment et pourquoi ces accords peuvent être compatibles avec l'objectif d'une réelle transformation de l'élite raciale.

6.1. Introduction

So far, this research study has been grounded on two underlying observations. First, all firms in mining were required to undertake BEE deals (or all faced the rules and threats of expropriation). Second, the majority of firms partnered with politically connected partners as an overarching strategy rather than as an exception. Therefore, making deals, and partnering with politically connected E-firms is ubiquitous in the story. However, not all deals were the same and not all had the same outcomes. Some deals managed to resolve the pressures of BEE with investment and transformation, while others failed in various ways to do so. Therefore,

the argument is that the variation is explained by the variation in deals – how some deals managed to keep threats of expropriation at bay, while others either struggled or had different intentions. Building on the above, and building on Chapter 5, the research question asked in this chapter is as follows:

In the post-apartheid environment, with black empowerment at the forefront of the transformation agenda, how did Amplats mitigate expropriation risk in a way that supported sustained investment in platinum? That is, how did Amplats manage the challenge of locking-in credible commitment in a new and uncertain political environment?

The chapter finds that Amplats used a two-level deals strategy at the corporate and asset levels to resolve the following problems:

1. By nationalising the mineral rights, government was determined to reallocate several rights owned by Amplats to other investors. Government, rather than Amplats, would have control over which rights would be reallocated to Amplats, and which rights removed. This was a problem because Amplats had accumulated and invested in several mining properties that it considered its core assets in terms of (1) its position as the top platinum producer in the world, and (2) its expansion plans for these properties to maintain that position. Amplats wanted to prevent the expropriation of these core assets and to keep these assets on a 100 per cent ownership basis.
2. By nationalising the mineral rights, the government set out to offer these rights to a broad spectrum of local and international investors, while using BEE rules. The idea of the government was that this would change the ownership structure of the platinum belt, create a platinum rush, and therefore make the platinum belt investment-active on a broad and empowered basis. Amplats was concerned that, after investing for decades in managing platinum supply and stimulating platinum demand, an uncoordinated ramping up of platinum supply would erode value for everyone.[72]

Given these two problems, Amplats made a corporate-political level "package deal" with the Department of Mineral Resources (DMR or government), structured as follows:

[72] The reader will notice that throughout the case studies, Amplats maintains a strong presence in terms of ownership, precisely because of its determination to ensure oversight of the supply side of platinum.

A. The corporate-political level deal of cooperation and insulating 100% assets

i. Amplats offered several platinum bearing parcels of land, in return for security of property rights in a selected suite of its core assets[73]

ii. Amplats convinced the government that instead of merely transferring equity to BEE partners, as stated by the mining law, it would undertake various joint ventures with BEE partners.

   a. As a compromise, Amplats accepted to work with government-sponsored BEE partners

   b. As a way of compromise, Amplats accepted the condition not to conclude any further deals with Motsepe beyond the Modikwa platinum deal

To support the "package deal" and address the second problem, Amplats set out a strategy of asset-level deals, as follows:

B. Asset level deals to lock-in credible commitment

Amplats partnered with two groups of partners.

i. The first were BEE partners as part of the BEE/expropriation risk imperative.

ii. The second group of partners were other I-firms, mainly the few international entrants in South African platinum. These entrants took the opportunity to work on the land that Amplats had given away as part of the package deal, and that had subsequently been made available to other investors. Amplats engaged with these deals in ways that committed to investment and to BEE by ensuring the partners met compliance rules.

Therefore, while government's plan could not be stopped, Amplats could offer itself as a joint venture partner to (1) local BEE entrants, directly addressing the transformation imperative, and (2) international entrants. For all these joint ventures, Amplats purchased the portion of platinum concentrate attributable to the partner, so that Amplats remained the sole export channel.

With this plan in place and the package deal concluded, the chapter finds that Amplats proceeded with (1) large subsequent capital investment on its 100 per cent owned assets and

[73] In other words, in return for releasing some properties for empowerment deals, Amplats could guarantee conversion of its old order right to new order rights in selected properties.

(2) concluded various deals with the two sets of partners (local and international), while investment performance varied by the quality of the deal.

The rest of the chapter is organised as follows. Section 6.1. provides an overview of Amplats' mines. Section 6.2. provides a detailed study of the package deal with government. This is followed by Section 6.3, which studies Amplats' overall investment performance. This concludes the corporate-level, deal-investment study. Thereafter, the chapter moves to partnership-level deals. Section 6.4. introduces the methodology Amplats used to select BEE partners. Section 6.5. provides two case studies of Amplats' domestic partnerships and investment and transformation outcomes. Section 6.6 provides two case studies of international partnerships and associated investment outcomes. Finally, Section 6.7 concludes.

6.2. Theoretical expectations. Amplats as patient capital and outcomes

The finding from Chapter 5 that Amplats is a patient I-firm grounds this chapter. This finding is "half way" to evaluating the hypothesis. From the proposition that Amplats is patient, the meso-micro-level theoretical typology (Typology A) proposes that patient capital will tend to adopt an investment driven corporate strategy, which in turn will use credible contracting as a strategy to manage expropriation risk. This unfolds into the developmentally oriented two levels of deals, already described. The patient and transformative approach is expected to generate good, stable deals, resulting in modest to high investment and good transformation outcomes. In terms of the firm/asset level deals, the nano-level theoretical typology (Typology B) generated possible outcomes based on the types of BEE partnerships with which a patient I-firm engages. Figure 14 below reproduces Typology B.

Figure 14 – TYPOLOGY B: Theoretical investment outcomes in I-patient world

		Theoretical investment outcomes in I-patient world	
		Type of BEE Partner	
		E-patient partner	E-opportunistic partner
Type of deal	Production deal	High investment	Empirically unlikely (Impatient E partner) OR low investment
	Passive equity deal	Moderate to high investment	Low investment

Source: Author

The expectation that the I-patient world will have moderate to high subsequent investment across its asset level deals partly depends on the orientation of the E-firms in each deal. While it is not envisaged that a patient I-firm will invite an opportunistic partner, particularly if the I-firm has prior experience in earlier BEE rounds, this combination is possible via the intervention of a powerful third party such as government. The theoretical expectation is that if the match is I-firm + opportunistic BEE partner, the result will be low investment, and that opportunistic BEE partners will prefer passive equity share deals rather than joint mine operations ventures.

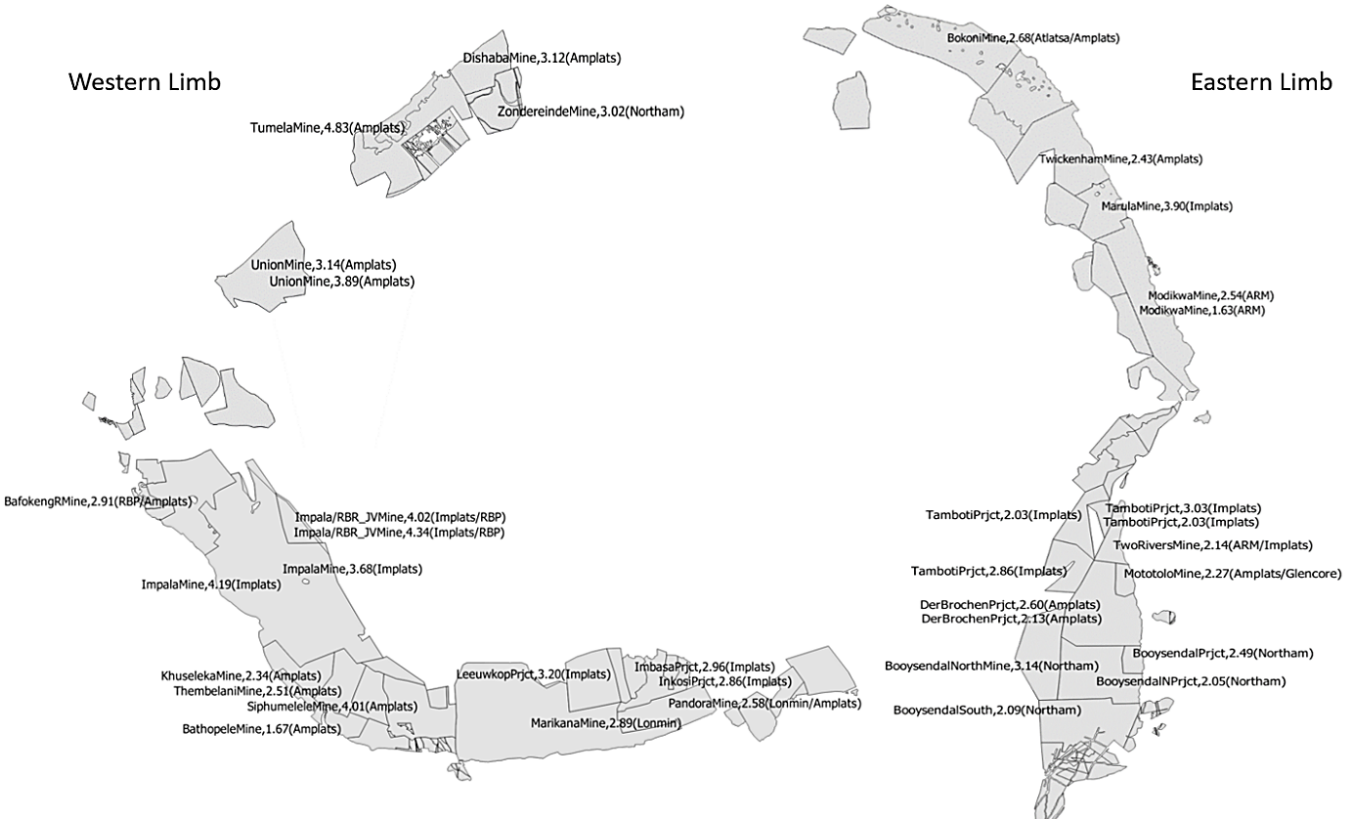
What follows is an outline and study of Amplats' investments, followed by a section studying joint venture mines.

6.3. Amplats 100% owned mines

When Amplats was founded in 1995, part of what made the entity a leading platinum company was its highly valuable mining rights, boasting some of the highest grade platinum ores in the platinum belt.[74] Amplats also had several undeveloped plots of platinum rich properties on the western and eastern sides of the platinum belt (See Figure 15).

[74] The grade of the ore is the amount of metal per ton of ore. The range in the platinum belt is theoretically 0-5. The writer calculates that the industry average (excluding Amplats) is 2.26. Any "mining rights" offering ores above this grade are "good strategic mining rights".

Figure 15 – The top four platinum producers in South Africa's platinum belt



Source: Author. Data sourced from Company annual reports

Figure 15 above shows the mines of the top four platinum producers, along with some BEE joint ventures, which are detailed later. The numbers next to each mine signify the average grade of platinum, showing that Amplats had accumulated high grade assets that it intended to own and operate on a 100 per cent basis. These assets are the basis of its high level bargaining with the ANC government, set out in the following section.

6.4. Tracing the "package deal" with the government

By 1995, Amplats had acquired more than 80 per cent of the known platinum mineral rights in the platinum belt.[75] The looming mining law that first made news in 1998 threatened the huge tracts of platinum mineral rights it had acquired.[76] Impala's rivals and potential new mining industry entrants were more supportive of the mining law. Amplats had a lot at stake.

As part of its expansion strategy, but also to signal cooperation and to confirm its importance to the platinum industry, on 16 May 2000 Amplats announced a massive expansion plan to

[75] Aided by the 1991 Minerals Act which, amongst others, facilitated the transfer of state-owned mineral rights.
[76] Specifically, the Minerals Development Bill of 2002, which later became the MPRDA in 2004.

increase production from 2 million ounces to 3.5 million ounces by end of 2006, for R12.6 billion in 2000 money terms (Amplats, 2000a). The I-firm stated that this would occur through the development of new mines and the expansion of existing mines, following a large exploration programme in the platinum belt..[77] Amplats made it clear that it would undertake this plan through "meaningful black economic empowerment" (Amplats, 2000a). However, this statement of intent alone did not eliminate the threat that government could take away some of the properties.

On 18 December 2000, Amplats entered into what could be described as a package deal with the Department of Minerals and Energy (DMR). Amplats would forfeit most of its mineral rights in the Limpopo province (Amplats, 2000b) in exchange for certainty of tenure on its existing mines and a selected number of high potential deposits that were concentrated in the eastern limb of the platinum belt.[78] These leases would operate for an initial period of 25 years and would be renewable for a further period of 25 years. A royalty of 1.5 per cent based on 80 per cent of the value of concentrate produced would be payable to the state (Amplats, 2000c). The government made the deal subject to Amplats developing all its subsequent mineral assets with the inclusion of *shareholding* black capital. Amplats, in turn, pushed against the focus on equity as the main measure of ownership transfer, and insisted on joint operations as an equally valid model. The government had a problem with the joint venture model, saying it could not straightforwardly determine the effective percentage ownership of black capital at company level if deals were at the production level (ANC Policy Institute, 2012). Alternatively, for the government this model could be problematic as it would create barriers to entry that are not present if incumbents are simply forced to transfer shares to (connected) entrants. Notwithstanding, an agreement was reached to develop some subsequent assets through production-based joint ventures with black capital. The agreement also allowed Amplats, in addition to the joint ventures, to develop other projects within the areas applied for on a 100 per cent ownership basis (ANC Policy Institute, 2012).

To evaluate this corporate level deal in terms of the transformative versus collusive spectrum developed in Chapter 2, Table 8 heuristically evaluates Amplats in terms of its corporate-level deal. Amplats scores 8 out of 9 on the transformative deal schema, and -1 out of -9 on the

[77] The exploration programme is detailed in Amplats' annual reports 1995-1999.
[78] In specific terms, Amplats cancelled their previous agreements with the Lebowa Minerals Trust (LMT) in the Limpopo province. The mineral rights secured by the Lebowa government were transferred into the Lebowa Minerals Trust (LMT) in 1987. The LMT was effectively a corporate entity possessing mineral property in a similar manner to a private rights holder, but with the authority to negotiate these rights with third parties.

collusive deal schema, giving a total score of 7 points, reflecting that the deal described above, crafted proactively by Amplats, exemplifies credible, transformative engagement with government.

Table 8 – INSTRUMENT 2: The corporate-political deal spectrum

	Transformative deal	Score range (0-3)	Collusive deal	Score range (-3-0)	No deal	Full score	Amplats score
i	Unlocking/unbundling assets for resourcing BEE	3	Closed party-funding focused deals	-1	No deal	0	2
ii	Commitment to continuing investment	3	Rent-sharing arrangements, no commitment to investment	0	No deal	0	3
iii	Commitment to racially transforming company	2	Isomorphism tactics rather than transformation	0	No deal	0	2
	Total score	8		-1		0	7

Source: Author

What made the deal credible? As outlined in the theoretical chapter (Typology A), the argument is that Amplats formulated a cooperative and transformative deal supported with commitments for massive investment. The cooperative part of the deal was that Amplats ceded its leased properties in the Limpopo area to support the objectives of government. The transformative aspects of the deal were the agreements to undertake future greenfield investments with BEE partners on joint venture arrangements. Credibility from government's side was challenging to lock in. Between 2001 and 2002, Amplats had to apply pressure on government over some aspects of the package deal agreement, mainly urgently needed mining leases the government had promised to grant in support of Amplats' expansion plans (Amplats, 2002b). Therefore, the courts played an important role as a third party in the enforceable aspects of the deal. However, matters were not settled in court, but rather the court cases helped nudge the process. An important example is the report back by Amplats in August 2002 stating that after several meetings with the government, the government had agreed to honour agreements of processing applications for certain mining lease areas. Once done, Amplats would drop the active court action.

In addition, government agreed to expedite the process if Amplats agreed to work with two BEE partners selected by the government.

> …In terms of the agreement two Black Economic Empowerment groupings will acquire 50% ownership of discrete portions on each of the Twickenham and Der Brochen project areas identified as being able to support an independently managed stand alone operation. Participation by the BEE groupings will be facilitated by the contribution of certain farms to the joint ventures. *Anglo Platinum will*

> *independently own (100%)* and develop other portions of the Twickenham and Der Brochen project areas. Anglo Platinum is therefore pleased to confirm that implementation of this agreement will enable the announced expansion programmes, …, to proceed as soon as mining authorisations in terms of the agreement have been issued by the Department (Amplats, 2002c).

The two BEE partners that Amplats had to take on as a compromise are Pelawan Investments, documented in Section 6.6.2 and 6.6.3 (the Twickenham and Ga-Phasha deal), and Khumama platinum, documented in Section 6.6.4 (the Booysendal deal). Although all these deals failed to stabilise, they had different outcomes. Finally, what made the corporate-political level deal credible were the asset level deals, both those with credible partners, and those elected by government.

Following the package deal with government, in November 2002 Amplats reviewed upward its planned capital expenditure for the 2002 to 2006 period to R15.3 billion, 12.9 billion coming directly from Amplats (Amplats, 2002c). Amplats' tone signalled confidence in the deal with government. The overall picture of Amplats' investments is detailed in Section 6.5.

The government proceeded to allocate the areas ceded by Amplats and other mineral rights in neighbouring properties to a broadening range of emerging local capitalists, international junior explorers, and local community organisations. This presented challenges and opportunities for Amplats. The challenges were threefold. First, the package deal was not a done deal, it still required forming credible partnerships for sustainable investment. The DMR and the shifting factional politics were too fickle for Amplats. Second, the DMR as a conduit of ANC elite (factional) interests meant that the arena of "who is the chosen partner" was contested territory.[79] How to navigate this was an important balancing act. Third, the properties that Amplats had to cede were important to Amplats in so far as the company wanted to control platinum supply into the market.

The opportunities were also threefold, mirroring the challenges. First, there was a package deal rather than no deal. This meant that though ceding some mineral rights, Amplats kept control of its largest assets and properties, thus maintaining its position as the world's largest platinum producer. Second, there was an opportunity to bring in sufficiently well connected or protected partners that would champion the transformation imperative. Amplats could see a win-win

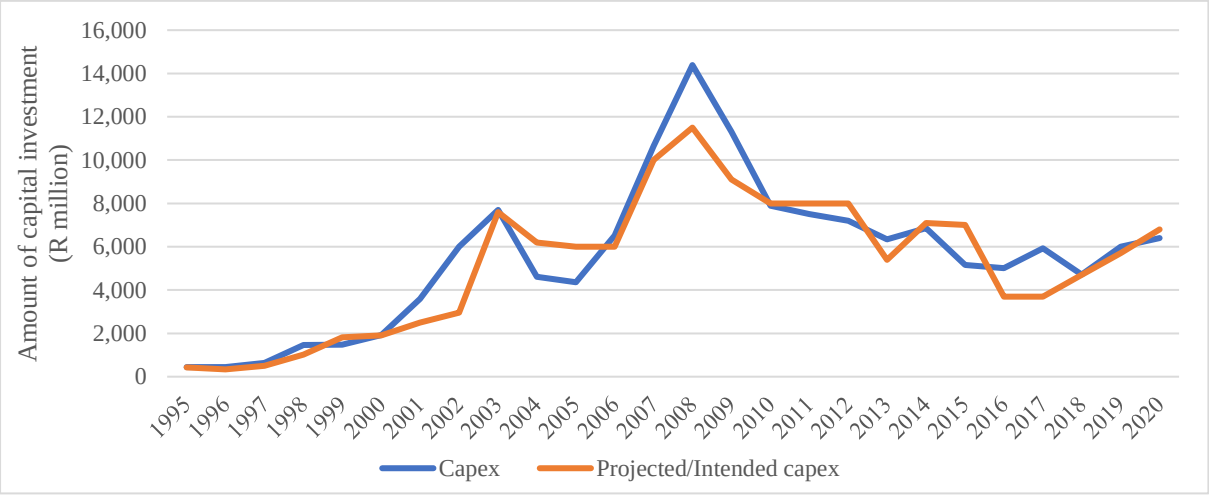
[79] See Appendix to Chapter 7 for a brief discussion on the "DMR as a conduit of ANC political factions".

situation. Linked to this point, it appears that substantial ownership of a competitor platinum mining company, Northam, enabled Amplats to "do empowerment" by transferring its Northam shares to strategic ANC and DMR-connected partners it wished to keep at arm's-length, namely, Tokyo Sexwale (See Section 6.6). Third, the rules of the game did not exclude opportunities to make deals with international entrants. Deals with these partners would give Amplats some control over the supply side dynamics of platinum mining in South Africa. Unlike BEE partners, these partners would come into deals with funding, business, and mining experience.

6.5. Amplats' investment performance following the corporate-political level deal

The elaborate investment plans that Amplats announced starting in 2000 did materialise. The sets of investments included, firstly, the 100 per cent owned assets, then the BEE joint ventures, and finally the joint ventures with international partners. This section evaluates the overall Amplats investment performance followed by a summary of investment in Amplats' 100 per cent owned mines.

Figure 16 – Amplats investment success: Amplats, on average, exceeded its projected capital, even during the 2008 global financial crisis



Source: Author. Data from Amplats annual reports, 1995 to 2020

Figure 16 above shows the overall expansion of capital investment by Amplats, particularly between 2000 and 2008.[80] Even after this period, Amplats maintained a positive investment position at approximately R5 billion investment per annum.

[80] Amplats linked the downward revised investment since 2008 to the global economic downturn, delaying some investments and pursuing cost-cutting efficiency gains in others (Amplats, 2009a).

However, nominal capital investment alone is not enough to show whether Amplats was meeting its investment targets equalling the investment requirements of its mines. What would be a convincing way to measure Amplats' investment performance? Reflecting back on the hypothesis, subsequent investment is hard to come by when credible commitment deteriorates. As such, several deals in South Africa's mining industry, with *intended investment*, did not materialise (where commitments could not be secured, or credibility deteriorated). Therefore, the investment potential during the commodity boom – reflected in projected or planned investments – was well above actual investment. That is, "South Africa missed the commodity boom" means that actual investments fell well below the planned investments. As already mentioned in Chapter 4, this is the aggregate story. Thus, one measure of the investment variable is the tracking of the difference between annual intended investment and actual investment, as a way to evaluate whether Amplats was meeting its investment targets equalling the company's investment requirements to capitalise on the commodity price boom. Examining Figure 16 again, the graph provides both the intended investment data, and the actual investment data. In this case, successful investment performance is not only (1) the size of investment, and the (2) upward trend of investment, but importantly it is also the difference between intended versus actual investment. Tracking the investment plans of Amplats and comparing them to actual investment, suggest that Amplats followed through with their commitments. Even though at the asset level not all deals worked out (as will be seen), those that did were supported with subsequent investment, adding to the story of successful investments in the patient partners story. The following section evaluates Amplats' investments on its mines.

6.5.1. Mine level investment at Amplats' mines

This section disaggregates the overall investment by Amplats to the mine level – focusing only on Amplats' own mines and excluding stay-in capital. The investment is presented in two periods. The first period is the 1993 to 2003 period, before the new mining law came into effect. What was Amplats' relationship with investment at its mines, especially during a decade characterised by domestic and sectoral uncertainties?

Table 9 – Planned capital investment projects in Amplats' mines, 1993-2003

	Mine	No of Projects/ Investments	No of Completed Projects	Total Intended/Projected Investment (Rm)	Total Capital Expenditure (Rm)	Variation (Rm)
	(1)	(2)	(3)	(4)	(5)	(6)
1.	Amandebult (Tumela and Dishaba)	1	1	680.6	1,434.9	+754.3
2.	Bokoni (Lebowa)*	1	1	249.6	738.3	+488.7

3.	Mogalakwena	1	1	1,057.6	1,209.9	+152.3
4.	Rustenburg Section (Khuseleka, Khomani and Siphumelele Mine, Thembelani, Bathopele)	1	1	4,200.5	4,938.1	+737.6
5.	Twickenham	1	1	3,050	983	-2,067
	Total	**5**	**5**	**9,238.3**	**9,304.2**	**65.9**

Source: Nedbank 2016. *Note that the Bokoni (Lebowa) mine was 100% owned during this period until Amplats converted the mine to a joint venture with Pelawan (Anooraq).

Table 9 documents the mines (column 1), the number of investment projects per lease area, whether those projects were completed or not by 2003 (column 3), and the variation between projected and actual investment (column 6). The results show Amplats managed to complete all its investment commitments during this time, except for the Twickenham project. This project was one of the lease areas the government had wanted Amplats to invite a government-elected BEE partner. This compromised Amplats' plans on the project, as detailed in Section 6.5.

Table 10 – Planned capital investment projects in Amplats' mines, 2004 to 2018

	Mine	**No of Projects/ Investments**	**No of Completed Projects**	**Total Intended/Projected Investment (Rm)**	**Total Capital Expenditure (Rm)**	**Variation (Rm)**	**Current Status**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
1.	Amandebult (Tumela and Dishaba)	4	2	2,015	11,014	+8,999	Operational
2.	Mogalakwena	5	4	12,505	24,959	+12,454	Operational
3.	Rustenburg Section (Khuseleka, Khomani and Siphumelele Mine, Thembelani, Bathopele)	8	6	9,080	15,662	+6,582	Sold to Sibanye Gold
4.	Twickenham	1	1	7,100	4,921	-2,179	Care and Maintenance in 2016
	Total	**18**	**13**	**30,700**	**56,556**	**25,856**	

Source: Nedbank 2016 and Amplats annual reports 2016-2018.

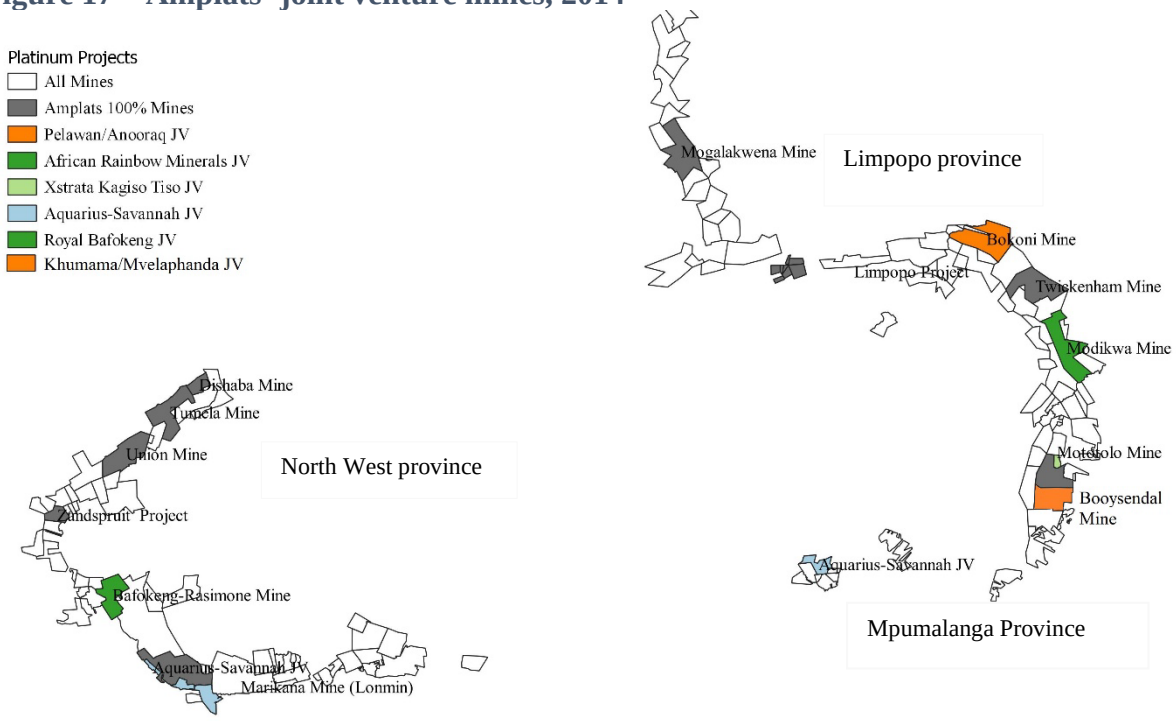
Table 10 presents the mine level investments for the period 2004 and 2019. During this period, Amplats had several greenfield and brownfield projects around its properties, each of which required repeated tranches of investment. A total of 13 of the 18 projects were completed (column 3 compared with column 2). The investment sunk in the projects was generally positive and above projected investments (column 6). The exception remained the Twickenham asset.

Overall, Amplats sustained high absolute investments on its own mines. The argument is that these 100 per cent owned mines were buttressed by the deal with government, and the BEE joint ventures in other mines. The Chapter now turns to these BEE partnerships and deals.

6.6. Asset level deals with South African partners

This section studies the asset level partnerships and deals of Amplats. The section is organised by partnerships with domestic capital/entrants, followed by partnerships with international capital. Within each of these groups of partnerships, the order of presentation will proceed according to tiers of investment, from first-tier to fourth-tier investments.

Figure 17 – Amplats' joint venture mines, 2014



Source: Author, using QGIS software. Data from (Zientek et al., 2014).

Figure 17 above shows a map of the joint ventures of Amplats in 2012. The majority of the deals with BEE are located on the eastern side of the platinum belt (i.e., Modikwa, Bokoni, Mototolo), where Amplats gave up its properties to the government. On the western side of the belt, there is one BEE partner, the Royal Bafokeng (covered in Section D), and one international partner, Aquarius. The deals and findings are summarised in Table 11.

Table 11 – Summary of the universe of Amplats' asset level deals and investment outcomes

Year of deal	Asset	Partner	Details of plans	Outcome in 2018
Domestic partnerships				

2001	Modikwa mine	African Rainbow Minerals (Patrice Motsepe)	Deal began in 2001 over a greenfield investment project, the Modikwa mine. The initial investment was R1.58 billion in 2001 terms. The mine was active in 2002, operated by the BEE partner, ARM.	**First Tier, t=1** Successful in investment and transformation
2002	Twickenham mine	Initially, Pelawan	A greenfield investment by Amplats. The government injected Pelawan into the project. The partnership failed, with Amplats attempting to isolate this mine in exchange for Ga-Phasha project at first, then for Bokoni mine later.	**Second Tier, z=2, t=0** Moderately successful. Deal crumbles.
2003	Ga-Phasha project	Pelawan	This was meant to be a greenfield project developed by Pelawan in partnership with Amplats. The deal failed to materialise.	**Fourth Tier, z=1, t=0** Unsuccessful. Investment does not materialise.
2007	Bokoni mine	Pelawan	This was a compromise deal. Amplats transferred 51% of its Bokoni mine to be operated by Pelawan. Amplats sunk sizeable investment as part of the deal. Pelawan failed to operate the mine despite Amplats' interventions.	**Second Tier, z=2, t=0** Moderate investment, but underlying deal unstable.
2002	Booysendal project	Initially, Khumama, then Mvelaphanda	This was meant to be a greenfield project developed on a joint-venture basis with Khumama, under the "package deal". Khumama sold its rights to Mvelaphanda. However, the deal failed to take off. Amplats sold its shares to Mvelaphanda in 2007, a deal that concluded in 2009.	**Fourth Tier, z=1, t=0** Unsuccessful. Investment does not materialise under the Amplats stable.
International partnerships				
2005	Mototolo mine	Xstrata	The deal between Amplats and Xstrata was to develop a medium sized mine in the eastern limb of the platinum belt. The deal kept stable (also in the shadow of a politically well-connected partner), supported by requisite subsequent capital investment.	**Second Tier, stable deal**
2003	Kroondal and Marikana	Aquarius	The Amplats-Aquarius deal was essentially a pooling and sharing agreement over two mines. The partnership worked well, supported by requisite subsequent capital investment.	**Second Tier, stable deal**

Source: Compiled by author.

The summary in Table 11 rates the deal-investments using Instrument 3 (firm/asset level deal success spectrum) developed in Chapter 2. The instrument is summarised below:

- **First Tier – High investment** = deal with multiple rounds of large investment
- **Second Tier – Medium investment** = (a) deal with one large investment or (b) deal with multiple rounds of modest investment
- **Third Tier – Low investment** = (a) deal with one round of low investment or (b) deal with one round of modest investment
- **Fourth Tier – No investment** = (a) deal but no subsequent investment or (b) negotiation but no deal
- **Stability of deal (z)** : z=1 if deal remains stagnant; z= 2 if deal eventually crumbles
- **Transformative result (t)**: t=1 if *productive BEE firm*, 0 otherwise

The overall finding is that BEE deals did materialise in investment at mine level in the I-patient world, but with variation in the degree of success. The variation is directly explained by the quality of the deal in terms of BEE partner: whether or not the partner is able to bring stability

and certainty. The deals with international partners are stable, but in Amplats' case focus on developing relatively medium size mines with modest subsequent investment.

The rest of the subsections trace the specific deals and their outcomes. The process tracing attempts to provide as much detail to get a sense of the deal over time, and to get a sense of whether capital investment occurred in parallel. This mechanical chronological tracing of the nature and progression of the deal along with investment directly follows the hypothesis to its end.

6.6.1. The Modikwa mine deal with African Rainbow Minerals

Summary of the Modikwa mine deal

This is a story of greenfield investment in the development of the Modikwa mine between Amplats and Patrice Motsepe (ARM). The story is one of success and transformation. The narrative of the Modikwa story intentionally mentions detail about planned timelines because part of the thesis that "South Africa missed the commodity price boom" is that deals could not be concluded or stabilised timeously, resulting in massive delays for projects, thereby equating to missed capital investment opportunities. On the contrary, the story of Modikwa is characterised by the same efficient process seen in Chapter 5 between the partners, and that is an essential part of the investment success.

Tracing the Modikwa deal

Section 6.2 mentioned that Amplats had completed an exploration programme in the late 1990s. This programme had explored platinum deposits mainly in the eastern side of the platinum belt, where Amplats eventually ceded most of its mineral rights. However, Amplats was able to secure the Modikwa area on a joint venture basis with Patrice Motsepe's African Rainbow Minerals (ARM, the patient E-firm in Chapter 5).[81] On having completed its exploration programme on Modikwa in 1998, the following year Amplats announced that it would be building the Modikwa mine, to reach full production by 2003 (Amplats, 1998, 1999).

In 2000 Amplats announced that the initial capital investment required to develop the mine was R1.35 billion in 2000 money terms, to start operation in 2002. Following the initial engagements with government between July and August 2000, the mining authorisation was granted, and the project commenced in November 2000, while Amplats was simultaneously in

[81] Technically referred to as the Maandagshoek area.

negotiation with ARM to become a 50 per cent joint venture partner in the project (Amplats, 2000c: 19). This deal was effective in 2001.

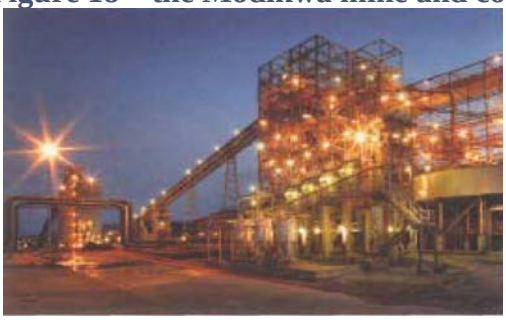
In 2001 Amplats reported that the mine development would reach planned production capacity on time in 2003. The project cost was escalated to R1.58 billion in 2001 terms[82]. The partners agreed to each contribute half the required investment. ARM financed the deal with its own cash and a loan from a bank, guaranteed by Amplats (IOL, 2004).[83] The wheels of Amplats' first BEE capital investment were turning fast. This contrasts with the Pelawan deal (See next section).[84] There the Amplats board announced a decision to take a "slow approach". The Modikwa project "was on an accelerated programme throughout 2001 in order to recoup the delays associated with regulatory approval" (Amplats, 2001a: 65). Amplats expressed confidence in this investment and in the partnership.

Modikwa officially started operations in 2002, meeting the original target date. For the first time, Amplats reported purchasing metals in concentrate from a black owned platinum producer.[85] Moreover, ARM paid back Amplats its loan of R704 million in respect of its share of the capital expenditure and interest. This aspect of ARM paying back I-firms, and from proceeds of productive activity, was a differentiating attribute of ARM (IOL, 2004).

After a year of production, in 2003, Modikwa continued with its accelerated development programme, to meet full production and efficiency parameters in 2004. In addition to the mine, Modikwa had completed building a full concentrator. From inception the mine has been operated by ARM, an early, significant statement in the story of transformation in the platinum belt.

[82] With an employee complement of 2,100 workers.
[83] However, it took two years to get the contract between Amplats and ARM signed. Without an agreement, the banks would not advance the project any money. As such, Motsepe sunk in R300 million initially after selling ARMgold shares and then a further R200 million to give the banks comfort for the R700 million loan needed for the empowerment partners' contribution to the capital expenditure for the project (IOL, 2004).
[84] Amplats delayed the Pelawan deal, the Booysendal deal, and the Pandora joint venture (see Section D, Chapter 8).
[85] Amounting R121.9 million.

Figure 18 – the Modikwa mine and concentrator in 2003



Modikwa mine, 2003

Modikwa concentrator, 2003

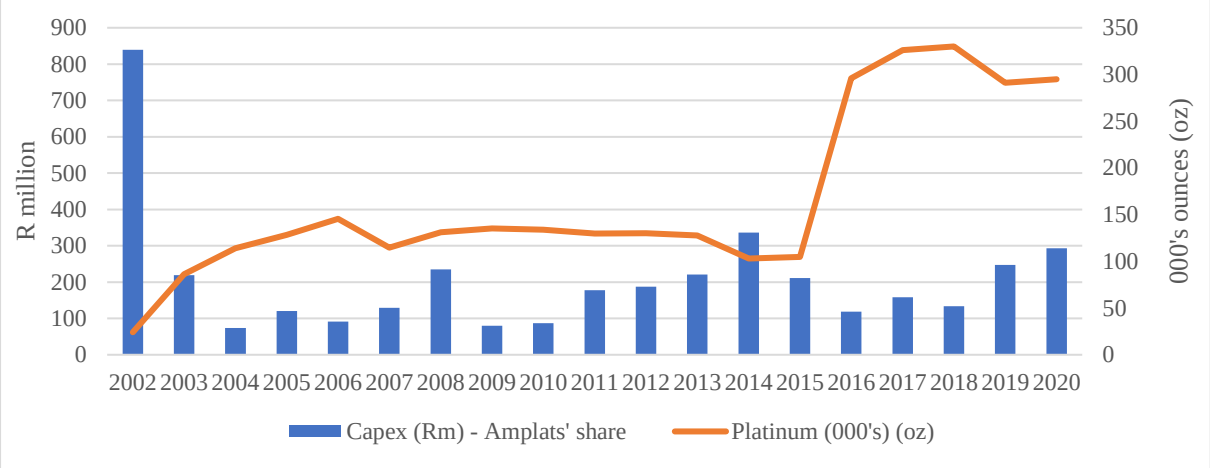
Source: Amplats annual report, 2003.

Between 2004 and 2010, the Modikwa mine entered its second phase of expansion, ramping up fixed investment and staying ahead of schedule. The third phase of expansion began in 2011, due to complete in 2019. During these phases, the life of mine of Modikwa was extended by approximately 40 years.[86]. In 2019, with the partnership still strong, the ARM-Amplats partnership embarked on constructing a chrome plant in the Modikwa area, upgrading the mine to both a platinum and chrome recovery plant (Amplats, 2019, 2020).

Conclusion – How does the deal fare in light of the hypothesis?

The Modikwa deal is an example of investment and transformation success in the rules-deals story. Beyond the requisite political connections that Motsepe brought to the party, the story tangibly demonstrates a productive partnership focused on capital investment that places the BEE partner in the frontlines of operating a mine. The trajectory of the deal (a Round Two) interaction, is similar to earlier deals conducted by Motsepe, documented in Chapter 5.

Figure 19 – Modikwa mine. Refined platinum production and investment, 2002-2020



[86] In September 2011, Modikwa Platinum Mine acquired the prospecting right for a portion of the Doornbosch adjoining property from Randgold and Exploration Company Limited. The property has Mineral Resources of 160,000 4E ounces and will provide short-term flexibility to South Shaft. This extended the life of mine to 2087 (from 2071 in 2010 estimates). Expansion projects (sink shafts) were progressing well in 2011, with the new steady state due in 2019. The projects are to increase life-of-mine by 24 years.

Source: Author, using Amplats' annual reports, 2002-2020. Note: The investment in the graph shows the capital investment by Amplats only. Likely, the investment doubles when including investment from African Rainbow Minerals. The researcher avoided adding the reported investment by ARM to avoid possible double counting, because in some years the reports do not explicitly state their share in the investment.

Figure 19 shows the trajectory of the Modikwa mine's production performance. What is clear by looking at the production trajectory is that the mine developed quickly and reached steady state around 2004. The sustained, continuous investments of phase two and phase three show significant increase in capacity post 2016, at a time when Amplats had exited all its BEE joint ventures except ARM, because they could not deliver.[87] In terms of success in transformation, ARM also diversified into another separate company, African Rainbow Capital, offering financial products including retail banking and insurance in South Africa and abroad.

How did the deal perform in terms of subsequent investment over time?

[87] Exiting deals was enabled by a protracted court case between the Chamber of Mines and government over the "once empowered, always empowered" rule which meant I-firms always had to re-empower in perpetuity when deals fail. The courts ruled in favour of mining companies in 2021, meaning previous deals would continue to be acknowledged.

Table 12 – Amplats' share of investment in the Modikwa deal

Asset	Intended/ announced investment (+year)	Actual Investment 2001-2007	Actual Investment 2008-2014	Actual Investment 2015-2018	Total
Modikwa mine	**2001**. Initial investment of R1.58 billion	R2,242.8 million compared to R1,626 million intended investment	R1,324 million	R1,162 million	Initial investment and subsequent investment well above initial size of deal. Amplats' share amounted to c.R4,728.8 million in the Modikwa mine. Together with ARM's share, the investment estimates to R9,457.6 million
Tier result		**First Tier + t=1 investment,** deal with multiple rounds of large investment, develops into a thriving productive BEE enterprise			

Source: Author's calculations from Amplats' annual reports and company announcements between 1998 and 2018.

Table 12 summarises the trajectory of the capital investments in Modikwa from Amplats. Consistent with the hypothesis, the robust partnership between Amplats and ARM resulted in multiple rounds of relatively large investment for the size of the Modikwa mine. It is worth noting that part of the "package deal" in 2002 forbid Amplats from undertaking further empowerment deals with ARM (ANC Policy Institute, 2012). This potentially closed the space for the ARM-Amplats partnership in platinum, at least for the first two decades of the "package deal".[88]

Typology B expects that a combination of patient I-firm and patient E-firm will result in high subsequent investment throughout the deal. This is the case with the Modikwa mine. As such, the case study exemplifies a First Tier investment. A similar deal will be seen in Section D between Amplats and the Royal Bafokeng community.

The following section traces the government-sponsored BEE partners, the beneficiaries of the "package deal".

[88] However, ARM is in a similar joint venture with Implats at the Two Rivers mine in Limpopo. The joint venture happened around the same time as the Modikwa venture.

Background to the Government-sponsored deals: Pelawan and Khumama deals

The following deal is an outcome of the package deal between Amplats and the government. The agreement was that (1) Amplats would jointly develop a mine with Pelawan Investments over the Twickenham area, and (2) Amplats would jointly develop a mine with Khumama Platinum over the Booysendal area. The following provides a brief background on these two BEE partners as a context before tracing the deals.

Pelawan was led by COSATU affiliated Tumelo Motsisi and Mintek's chairman Harold Motaung.[89] Motsisi was the leader of the now defunct Kopano Ke Matla Investment company, which was the investment arm of COSATU which Motsisi founded in 1998 (Anooraq, 2011). In relation to the second partner, Motaung was at the time of the deal the chief director (mine inspectorate) of the DMR – the same department responsible for issuing mining licences, and the same department that determined the partners with which Amplats ought to engage (Anooraq, 2011). The Anooraq report details Motaung's profile pointedly, as follows:

> In Mr. Motaung's capacity as a Chief Director of the Mine Inspectorate, he was appointed on numerous boards of government-associated institutions including the National Nuclear Reactor, the Deep Mining Board and the MQA. Mr. Motaung also chaired the Mines Research Board, which administered a mining safety fund… was a member of the DM[R] executive team responsible for the briefs and presentations at the Parliamentary Portfolio Committee on the status of minerals and energy within the country, which culminated in the enactment of the Mineral Development Act…Mr. Motaung is the founding member and CEO of Pelawan, the controlling shareholder of Anooraq. (Anooraq, 2011: 66).

As of the end of 2002, Amplats was expected to develop a new thriving mine with Pelawan, called Twickenham. Government hoped that the neighbouring rights awarded to Pelawan would be joined with Amplats' Twickenham to develop one big mine. However, Amplats eventually decided against this, preferring to develop one mine on a smaller property that it would own outright. Instead, Amplats facilitated a merging of Pelawan into Canadian miner Anooraq, to jointly expand Amplats' Bokoni mine and a new neighbouring project called Ga-Phasha. Although the Twickenham mine was insulated by Amplats, the mine evolved in the

[89] COSATU: Congress of South African Trade Unions, a trade union federation in South Africa that forms part of what is called the "Tripartite Alliance" between the ANC, COSATU, and the SACP (South African Communist Party). Mintek: a state owned enterprise specialising in mineral research, formerly known as "Council for Mineral Technology".

shadow of neighbouring Pelawan, becoming Amplats' only unsuccessful, 100 per cent owned mine. Therefore, the case study of the Amplats-Pelawan deal studies both investments because they are related, and their stories only separate later in the deal.

The second DMR-sponsored deal was with Khumama, at the time led by Nomazizi Mtshothisa, late ex-wife of Cyril Ramaphosa. She was also the chairperson of state enterprise Telkom between 2002 until her death in 2008. Mtshotshisa was active in the ANC during the time the mineral rights were awarded to her. At the time, she was chairperson of a controversial ANC fundraising vehicle called ANC Fundraising Trust, registered in 2000, to "accept donations and hold shares in companies" (Robinson & Brümmer, 2006). The DMR allocated Khumama the prospecting rights in the Booysendal area. These rights were eventually acquired by another E-firm equally connected to the DMR, Mvelaphanda Resources.

Mvelaphanda Resources was a company founded by ex-Robben Island prisoner, ANC insider and presidential hopeful, Tokyo Sexwale.[90] Sexwale left politics in 1998 to pursue business. One of his first transactions in mining was a platinum deal facilitated by Anglo. After acquiring a majority stake in Northam Platinum in February 2000 (mentioned in Section 6.4), in August 2000 Anglo transferred 17.5 per cent of Northam to Tokyo Sexwale as an empowerment deal (Koen, 2000). As a result, Anglo instantly secured an option from the DMR to further develop its own mineral areas that were contiguous to those operated by Northam (ANC Policy Institute, 2012). The transaction was strategic for Anglo because Tokyo Sexwale was a greatly preferred BEE beneficiary by the DMR (Mining Weekly, 1999; Engineering News, 2001). Explicitly stated by Sexwale,

> …Our experience with the government in the form of the Department of Minerals and Energy, has been as positive, and Mvela Resources and its partners have been among the early successful applicants for new order prospecting permits, with more anticipated in the coming year (Mvelaphanda, 2005: 4–5).

After Khumama sold its Booysendal rights to Mvelaphanda, the DMR remained interested in seeing these mineral rights developed as part of the package deal. As will be seen in Section 6.6.4, the deal did not stabilise. Anglo and Amplats managed to exit the deal by selling the rest

[90] Robben Island is a small island in Cape Town, popularly known as the place where Nelson Mandela was imprisoned for 27 years. Sexwale spent 13 years in the Robben Island prison, from 1997 to 1990, when he was released with Nelson Mandela and other political prisoners. Upon release, he served in the National Executive Committee of the ANC. When the ANC became a ruling political party in 1994, he became the premier of the Gauteng Province, until his left politics in 1998 (South African History Online, 2009).

of Anglo's shares in Northam, and Amplats' shares in the Booysendal project, to Mvelaphanda (Mvelaphanda, 2008). This was another way of fulfilling the package deal by facilitating empowerment in another platinum company.

6.6.2. The Pelawan deal – the Twickenham mine investment

Summary

The Twickenham project was a greenfield investment that Amplats initially wanted to develop on its own. The government added the Pelawan partner in the project, which compromised the project by injecting uncertainty. Amplats eventually isolated this project to itself, though in the shadow of the failed Pelawan deal. As such, the investment sunk was only moderate compared to initial plans.

Tracing the Twickenham deal/investment

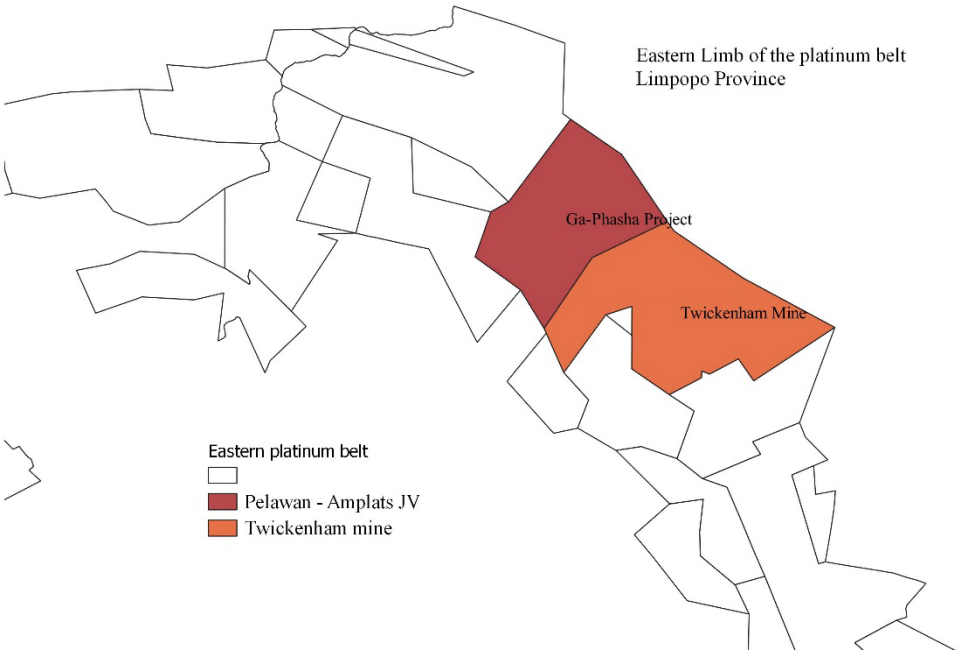
In 2000, Amplats concluded an exploration programme of the Twickenham area in Limpopo province and declared a plan to build a new mine in 2001. Amplats then applied for a mining licence from the government to this effect. In 2002, Amplats reported that a deal had been reached with the government in which the DMR awarded Pelawan with mineral rights adjacent to Twickenham. Pelawan would contribute the rights to Amplats and enter a 50:50 joint venture with Amplats on developing the new mine under the "Ga-Phasha joint venture", which would effectively be a larger version of the Twickenham mine. Amplats intended to keep the Twickenham farms separate, preferring a joint venture in the Ga Phasha property (See Figure 20).[91] Based on Amplats agreeing to this deal (and the deal at Booysendal),

> … Anglo Platinum was 'credited' for contributing more than 26% of metal production to the venture. As a result of these credits, the Group will have satisfied its empowerment requirements on any expansions it may wish to undertake at PPRust [Mogalakwena mine] (Amplats, 2002a: 41).

The above report demonstrates the granular elements of the package deal between Amplats and the government relating to the security of tenure for Amplats' own assets.

[91] The reluctance in working with the new partner is evident (1) in the nature of the deal – Amplats carving its own farms entirely to itself, and (2) in the tone of the reporting (see Amplats report 2002d: 55).

Figure 20 – The Twickenham and Ga-Phasha properties



Source: Author, using QGIS software. Data from (Zientek et al., 2014).

In 2003, Amplats reported a decision to slow down the implementation of the Twickenham project, citing unfavourable external factors. It is notable, however, that all other assets 100 per cent owned by Amplats were not included in this decision to slow down investment. Amplats noted that the DMR's decision to co-opt its BEE partners into the deal materially changed the proposed mine layouts. Amplats also noted that it continued discussions with the BEE partners in the Ga-Phasha. In the meantime, no investment had yet been sunk on either project.

In 2004, Amplats resolved to continue with a small mine on the south side of the Twickenham area, to avoid the uncertain story of the Pelawan property. This decision also meant Twickenham would initially be a far smaller mine than Amplats had intended.[92] This created a delayed investment opportunity (Amplats, 2004: 63). In 2005, however, Amplats decided to incrementally increase the project to include its neighbouring farm, a decision echoed again in the 2006 report. In 2007, Amplats confidently declared a full scale mine, requiring R5.9 billion investment for expansion. In 2008, the projected capital expenditure was adjusted upwards again to R7.1 billion. The project appeared to be gaining speed. It will be shown in the next subsection that the timing of these decisions came after Amplats, the government, and Pelawan reached a new deal over the Bokoni mine, giving Amplats some sense that the Twickenham

[92] The smaller version would build up to some 16,000 tons per month in 2005 while Amplats was re-evaluating the scope of the original larger project.

project could finally be developed without earlier uncertainties. But the tensions remained, nonetheless.

Figure 21 - A view of Twickenham's Hackey Shaft

Source: Amplats annual report 2007

In 2009, the Twickenham project was once again delayed, citing the global economy downturn. However, other big 100 per cent-owned projects such as Mogalakwena continued uninterrupted. In 2010, Amplats deferred Twickenham's steady state (full production capacity) to 2018. In 2011, this was deferred to 2023. The investment was not going well, and it is not exactly clear to what extent the Pelawan deal, examined closely in the next section, affected Amplats' confidence in the investment.

In 2016, Amplats decided to place Twickenham on care and maintenance because of "industry headwinds". This coincided with the DMR issuing Amplats with a non-compliance notice of Twickenham, citing lack of "local economic development".

Conclusion – How does the deal fare in light of the hypothesis?

The Twickenham deal is an example of a deal where credible commitment remains unresolved. The start-stop nature of the investment correlates with the changing uncertainties associated with the Pelawan deal. This becomes much clearer upon tracing the next Pelawan deal, in the following subsection. Before that, the following examines the investment trajectory of the Twickenham investment.

Table 13 – Twickenham-Amplats' investments

Asset	Intended/announced investment (+year)	Actual investment 1994-2000	Actual Investment 2001-2007	Actual Investment 2008-2014	Actual Investment 2015-2018	Variation
Twickenham	**2001.** Initial capital expenditure is estimated at R2,954 billion (in 2002 money terms) (Amplats, 2001b). Steady state expected 2006. **2002.** DMR identifies Pelawan as BEE partner (Amplats, 2002d). **2003.** Capex requirement upped to R3.4 billion, post DMR discussions. Initial shaft sinking takes place, as well as general mine infrastructure. **2007**. Capex requirement upped to R5.9 billion. **2008.** Capex requirement upped to R7.1 billion. **2012.** Capex requirement upped to R7.9 billion	Mine does not exist yet	R980.2 million compared to R1,431.5 million Amplats intended to spend	R4,617 million (*R4,535 million spent on developm't and expansion*)	R304 million spent in 2015, no investment thereafter	cR5901.2 million actual investment by end 2015, compared to R7,900 million required
Total	By 2012, Amplats needed a cumulative R7.9 billion to get Twickenham to steady state	Twickenham stopped producing in 2016. The investment was not so successful, not certain if there is a link with Pelawan.				
Tier	**Second Tier + z=2, t=0: deal with multiple rounds of modest investment, eventually crumbles**					

Table 13 documents the investment trajectory of the Twickenham project. Studying the table, although the initial sinking of a shaft happened in 2003, large investments into Twickenham only happened post 2008, after some resolution of the tension between Amplats and Pelawan/government. This sinking of large investment was six years after the start of the deal, a story of "missing the boom" because the deal with Pelawan affected the certainty behind the Twickenham project. That said, for unclear reasons, the mine was not much of a success despite the belated large investment by Amplats between 2008 and 2014. The outcome by 2016 was an investment that failed to obtain enough traction, and hence was placed on care and maintenance. Because repeated modest investment was sunk into the mine, it is classified as a second-tier investment, but with a deal that eventually crumbles, and no transformation as a result.

The following subsection traces the other part of the deal with Pelawan as part of resolving the Twickenham deal that did not take off.

6.6.3. The Pelawan deal II - The Ga-Phasha and Bokoni deal

It has already been established that instead of a joint venture in developing Twickenham, Amplats entered into a deal with Pelawan to develop the project Ga-Phasha (See Figure 20). During the Amplats-Pelawan negotiations in the 2002, Amplats entered into an exploration agreement with Canadian investor, Anooraq (Amplats, 2002e). In 2003, Amplats announced that Pelawan was in negotiations with Canadian capital for "various funding options" (Amplats, 2003a: 49). A year later, Amplats announced that it had facilitated a reverse takeover of Anooraq by Pelawan in 2004, thereby constituting Anooraq as the first BEE controlled corporation to obtain an offshore primary listing in North American capital markets (Amplats, 2005a).[93]

In 2006, when the DMR reviewed Amplats' progress in terms of empowerment, it appears that there was pressure applied on Amplats to make something of the Pelawan deal, which had essentially remained stagnant, in view of the BEE target deadlines. The DMR was adamant that failing to comply with the Pelawan deal would place some of Amplats' rights in jeopardy. In 2007, Amplats announced a deal. For R3.6 billion it would transfer 51 per cent of one of its oldest but promising mines, the Lebowa mine (renamed Bokoni mine) to Pelawan.[94] It would also transfer an additional one per cent of the Ga-Phasha project[95]. Moreover, Amplats agreed in principle to transfer, in due course, 50 per cent interests in two other projects, Boikgantsho and Kwanda, which had been recently created (Amplats, 2009b).

Therefore, at this point, the deal between Amplats and Pelawan consisted of four properties: (1) an actively producing mine, Bokoni, (2) the Ga-Phasha project which had not taken off, (3) the Boikgantsho project, and (4) the Kwanda project. These are all shown in Figure 22.

[93] Amplats notes that a new BEE partner entered to replace Pelawan. The BEE partner was Plateau Resources. A search on *Who Owns Whom* reveals that the same Harold Motaung and Tumelo Motsisi (noted earlier above) are the owners. More tracing shows substantial cross-shareholding, making the companies one and the same. It appears that to establish a company base in South Africa, Anooraq absorbed Pelawan, then Pelawan registered as Plateau. For consistency, this discussion will continue using Pelawan to refer both Anooraq (and the new name Atlatsa) and Plateau.

[94] The Bokoni asset dates back in to 1968, as the Atok platinum mine, cited by several sources studying the geology of the former Bantustans (Horrell, 1971; Glen, 1979). Then in 1977 it became part of JCI (Sheppard, 2003).

[95] The Amplats annual report 2009 details that most of the funding for Bokoni was from Amplats, through vendor financing (Amplats, 2009a).

Figure 22 – The four properties forming part of the Amplats-Pelawan deal in 2007

Source: Author, using QGIS software. Data from (Zientek et al., 2014).

The 2007 deal also transferred the management of the Bokoni mine operations to Pelawan, making the BEE partner an instant mining operator (Amplats, 2008a: 63). The deal became effective on 30 June 2009. This looked good to the DMR, having created a substantial, black-run platinum mining enterprise.

The deterioration of Lebowa/Bokoni deal and takeover by ARM

Soon after Pelawan took over Bokoni, the mine struggled operationally, coupled with consistent high fatalities. In its 2011 annual report, Amplats announced a refinancing and restructuring of Pelawan and the Bokoni mine for operational turnaround and growth (Amplats, 2011). As part of the deal, Amplats would acquire the eastern section of the Ga-Phasha project and the whole of the Boikgantsho project. In addition to the refinancing, Amplats stepped in to provide a greater advisory role in Bokoni, including changing the management team of the mine.

However, the mine continued to struggle, including making large annual losses.[96] Consequently, in 2014 Amplats announced that it was exploring options to exit the Bokoni joint venture as a way to create value for Amplats. As such, Amplats announced a refocusing

[96] The mine made an accumulated loss before tax of R3,73 billion between 2010 and 2017 (Amplats annual reports, 2011-2017, authors' calculations).

of capital expenditure away from Bokoni to other more promising joint ventures such as Modikwa (Amplats, 2014). Bokoni had become a deadweight to the portfolio.[97]

The exit took prolonged negotiations with government. In the meantime, in 2017, the Bokoni mine was placed on care and maintenance to cut out the loss-making operation. Amplats officially classified this decision as divestment, and wrote off Pelawan's debt of R3.7 billion (Amplats, 2017: 46).

Amplats committed to support Bokoni while on care and maintenance until the end of December 2019. In 2020, Amplats reported that it had started to look for a new owner for Bokoni. In 2021, the company announced a deal with Patrice Motsepe, as the new owner who would be able to revive the operation.

> We are pleased to have concluded an agreement for the disposal of Bokoni Mine to an established mining company in ARM. In conjunction with our joint venture partner, Atlatsa [Pelawan], it was important that Bokoni Mine was sold to an operator with the technical and operational capability and access to funding to ensure the restart and sustainable future for the mine. The restart of the mine by ARM is expected to benefit employees, host communities, broader stakeholders and the regional economy, and allow employees and communities to participate in a new ownership structure (Amplats, 2021b).

Ironically, the BEE partner that the DMR had initially insisted that Amplats must side-line for future empowerment deal, was now the partner buying out DMR-sponsored Pelawan.

Conclusion – How does the deal fare in light of the hypothesis?

Based on the brief background provided on the partner, the implicit characterisation of Pelawan is that this is an opportunistic BEE partner. Tracking the deal with Amplats appears to suggest that, at least from Amplats' perspective, Pelawan was not the kind of partner that gave credibility to support sinking investment. If this was the case, then the long delays in the deal taking off, the breaking up between the original Twickenham deal, and the failure of the new Bokoni deal should not be surprising.

[97] In fact, Amplats' headline earnings declined from R786 million in 2014 to R107 million in 2015 mostly because of impairment of the loans to Pelawan and Bokoni amounting to R1.8 billion and restructuring costs amounting to R0.8 billion. A further impairment of R111 million was recognised in 2016, R253 million in 2017, and R110 million in 2018 (Amplats, 2018b).

Table 14 – The Ga-Phasha and the Bokoni deal in relation to investment

Asset	Intended/announced investment (+year)	Actual investment 1994-2000	Actual Investment 2001-2007	Actual Investment 2008-2014	Actual Investment 2015-2018	Variation
Ga-Phasha	Not stated	No investment	No investment	No investment	No investment	
Bokoni/ Lebowa	The deal transferred an already existing mine. The test is whether Amplats continued substantial investment into the asset post the deal	R167.48 million compared to c.R197.9 million intended (underinvestment)	c.R1,733.8 million (maintenance = R1070.3 million)	c.R1,679 million	c.R0.00	Positive until 2014
Tier (Ga-Phasha)	**Fourth Tier + z=1, t=0: deal but no subsequent investment, deal remains stagnant, failed transformation attempt**					
Tier (Bokoni)	**Second Tier + z=2, t=0: deal with multiple rounds of modest investment, eventually crumbles, failed transformation effort**					

Source: Author's calculations. See Appendix for details.

The earlier version of the deal over the Ga-Phasha project did not materialise. Typology B presented earlier predicts that matching a patient I-firm with an opportunistic BEE partner on a joint venture (production-based) is empirically impossible because no opportunistic BEE partner would self-select themselves into such a deal. In the case that this matching happens, the deal would yield low investment. In the Ga-Phasha case, the matching was imposed by a powerful third party, the government. Although there might have been hope that the BEE partner would evolve towards a productive trajectory, this did not happen in the Ga-Phasha asset. As such, the results presented in Table 14 conclude that this is a fourth-tier investment, where there was a deal but no subsequent investment. The hypothesis suggests that this was not a robust partnership that could provide the credibility needed to buttress the required investment.

In terms of the Bokoni asset, Amplats undertook a major expansion project on the Bokoni mine during 2005 and 2009, costing over R1.1 billion. This project was completed (Nedbank Group Economic Unit, 2017). Even after Bokoni passed on to Pelawan in 2007, Amplats continued to fund the deal, both the asset Bokoni, and Pelawan the partner. However, in 2014, Amplats stopped supporting the unsustainable deal that remained unprofitable.[98] Due to the relatively modest investment by Amplats in Bokoni, the asset is ranked as a second tier investment, but one that eventually crumbles, and produces no transformation.

[98] The commodity boom had ended, the Director General of the DMR aligned to Pelawan had left in 2012, and the "once empowered always empowered" issue had made its way to court, providing Amplats room to restructure its BEE partnerships.

As mentioned earlier, the Bokoni mine was bought by Motsepe's African Rainbow Minerals in December 2021, with plans for restructuring and expanding the mine (Ryan, 2021).

6.6.4. The Booysendal deal. Khumama and Mvelaphanda JV

Summary of the Booysendal deal

The Booysendal deal was a greenfield opportunity that was concluded as part of Amplats' "package deal" with the DMR. Amplats agreed to enter into a joint venture with a BEE partner that the DMR had awarded mining rights in the Booysendal area. The story is one of a deal without any credible commitment to secure investment from Amplats. For the entire period of the commodity price boom, no investment was made, until Amplats exited the Booysendal prospect.

Tracing the Booysendal deal

In early 2000, Khumama was granted prospecting rights in the Booysendal area, next to Amplats' Der Brochen project (Mining Weekly, 2005). To materialise the rights into an operating mine, the DMR secured Amplats as an anchor investor in 2002.[99]

In early 2003, Amplats reported that the company was still busy negotiating with Khumama on the Booysendal venture. Interestingly, Amplats noted that a mining authorisation had already been issued for the project – an incredibly quick turnaround by the DMR (when DMR-preferred partners are involved). As part of the deal, Amplats was also awarded a mining authorisation on the Der Brochen project (on a 100 per cent ownership basis. Then in July 2003, Amplats and Khumama signed an agreement to develop the Booysendal project (Amplats, 2007).

However, shortly after Khumama signed the deal, Khumama approached Sexwale's Mvelaphanda to buy it out of the deal, citing lack of technical and financial capacity (Le Roux, 2004). In early 2004, Mvelaphanda acquired the entire issued share capital of and loan accounts against Khumama Platinum for a R313 million[100]. This transaction officially made Sexwale the new joint venture partner on the Booysendal project.

[99] Similar to the Pelawan deal, Amplats had to restructure and redesign its original greenfield mine plan for the Der Brochen project, to accommodate the adjacent Booysendal joint venture.
[100] Khumama received R80 million cash plus a possible "upside" to be determined in future (Prinsloo, 2010). Mvelaphanda sold the 50 per cent Booysendal stake to Northam for an amount of R460 million, which was

In 2005, Amplats noted that they were undertaking some studies on the farms, due to finish in 2006. The studies progressed to pre-feasibility studies in 2006, due in 2007, while negotiations with Khumama (now under Mvelaphanda) continued. During this time, Mvelaphanda reported to the media that there was a good possibility that the E-firm would sign a 50:50 joint venture with Amplats to run the mine, breaking the stagnation of the deal under Khumama (McLachlan, 2006).

In 2007, after the meeting with the DMR to review Amplats' progress on meeting empowerment targets, the DMR found Amplats wanting on the Booysendal deal progress. To remedy the matter, Amplats announced the sale of its 50 per cent of the Booysendal project to Mvelaphanda Resources, making Mvelaphanda Resources a 100 per cent owner of the project. The deal was concluded by June 2009. Between the time of the deal with Khumama and the sale by Amplats to Mvelaphanda, no investment had been sunk to develop the Booysendal project.[101]

Conclusion – How does the deal fare in light of the hypothesis?

The Booysendal deal goes through two BEE partners under Amplats. From the inception of the deal to the transfer of the mineral rights to Mvelaphanda in 2007, the deal failed to offer sufficient credible commitment for Amplats to invest. This makes the deal a Fourth tier investment, as noted in Table 15 below. This finding is consistent with the broader hypothesis of the study relating to opportunistic BEE partners.

Table 15 – Intended versus actual capital investment expenditure on the Booysendal project

Company investing in Booysendal	Intended/announced investment (+year)	Actual investment 1994-2000	Actual Investment 2001-2007	Actual Investment 2008-2014	Actual Investment 2015-2018	Variation
Amplats	None ever explicitly stated by Amplats, but Northam required over R4 billion to develop the mine (Marais, 2018)	n/a	R0	R0	R0	R0
Tier	**Fourth Tier, z=1, t=0**					

Source: Author's calculations from Amplats' Annual reports.

converted to shares in Northam. The transaction pushed up Mvelaphanda's share in Northam to 34 per cent at the time, officially making Mvelaphanda the single-largest shareholder in Northam in 2004.

[101] After Mvelaphanda Resources sold Booysendal to Northam, Northam developed the project starting in 2010, eventually turning it into an operating mine in July 2013 (Northam, 2015).

In terms of transformation outcomes of the Booysendal deal, Khumama and Mvelaphanda missed an opportunity to turn the prospect into an operating mine, in a model where either Khumama or Mvelaphanda could have become a co-operator or an independent operator.

6.7. Asset level deals with International partners

This section explores the deals that Amplats concluded with international entrants in the platinum belt. Section 6.4 contextualised the purpose and role of these deals as Amplats' efforts to manage the supply side of platinum. It was also motivated that these deals are an important part of the empirical study of Amplats' deals because these add a source of variation in the types of partners with which Amplats engaged, and these deals also explain investment outcomes in the platinum belt.

Amplats dealt mainly with two international entrants, Xstrata and Aquarius. Xstrata was a multinational multicommodity mining company registered in London, with its headquarters in Switzerland. The company played a visible role in the 2000s in South Africa when it made inroads in coal, chrome, and platinum, mainly working with Cyril Ramaphosa in coal opportunities. The company also appears later in Section C, but sufficient for this section is that Xstrata is one of the international firms Amplats engaged.[102] Aquarius Platinum was a junior- to mid-tier mining company registered in Bermuda and listed in Australia. The company entered South Africa in the late 1990s, first engaging with Implats, then with Amplats on the deals studied below. The BEE partners of each of these international entrants will be discussed within the case studies.

What follows is Amplats' deal with Xstrata to develop the Mototolo mine, thereafter, followed by Amplats' deal with Aquarius to develop the Kroondal and Marikana mine (not the same mine as Lonmin's Marikana mine).

6.7.1. The Amplats-Xstrata partnership on the Mototolo mine

Summary

The deal between Amplats and Xstrata was to develop a medium-sized mine in the eastern limb of the platinum belt. The BEE-partner was to be Xstrata's responsibility, while Amplats

[102] Only two relatively large international companies entered South African platinum in the 2000's: Xstrata and Glencore, which merged in 2012. Their attempted penetration was not successful, mainly in an attempt to take over Lonmin.

focused on working directly with Xstrata. The deal remained stable (also in the shadow of a well politically connected partner), supported by requisite subsequent capital investment.

Tracing the Mototolo deal

Discussions between Amplats and Xstrata to develop the Mototolo mine on a joint venture basis began in 2003, culminating in the respective board approvals in July 2005. A month later, Amplats formally announced a 50:50 joint venture with Xstrata to build the Mototolo mine in the Limpopo province (See Figure 17 above). Production was expected to begin in 2006. The plan was to build a well-developed mechanised mine with its own concentrator.[103] The agreement was that Xstrata would develop and operate the mine, while Amplats would design, construct, and operate the concentrator.[104] The deal became an operating mine in 2006, with steady state expected by the end of 2007.

The new Mototolo concentrator

Having reached steady state, the joint venture continued with steady investment in the Mototolo mine for the next 10 years, 2007 to 2017. No major issues or setbacks were reported, with the venture managing the protracted platinum strikes of 2012 and 2013 by entering into wage agreements with unions early enough.

In 2018, after more than 10 years of successful investment, and as part of its restructuring to keep only the best assets, Amplats bought out the partners' share of Mototolo, ending the joint

[103] The mine would, at steady state, produce 132,000 ounces of platinum.

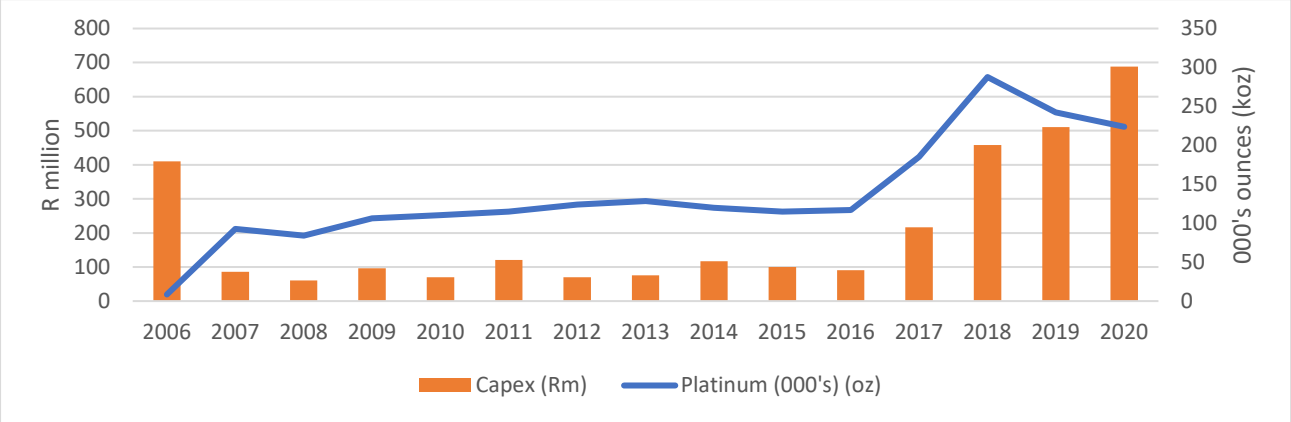
[104] In February 2006, the joint venture was reconstituted through the replacement of Xstrata by the "XK Platinum Partnership". The XK partnership consisted of Xstrata and Kagiso Tiso, a BEE company holding 37 per cent in Xstrata and holding a 13 per cent participation interest in the Mototolo joint venture. The Tiso and Kagiso are politically well connected investment holding companies that merged in 2011 (Stewart, 2010; Sowetan Live, 2011). They form part of what News24 (2004a) calls the "Top 6" BEE consortiums: ARM, Mvelaphanda, Shanduka, Safika, Kagiso, and Tiso – constituting 72 per cent of BEE deal value in 2003. Tiso was founded by ANC struggle stalwart and Robben Islander, the late Eric Molobi.

venture.[105] In the 2019 and 2020 annual reports, Amplats showed a substantial increase in investment in the Mototolo asset, with plans to merge the mine with its neighbouring Der Brochen mine to extend the life of the Mototolo mine.

Conclusion – How does the deal fare in light of the hypothesis?

The basis of credible commitment is ultimately a deal. In the case of the Amplats-Xstrata deal, a strong feature of the deal is that by partnering with an international peer, the deal removed for Amplats the internal pressures associated with BEE partners, such as political risk exposure, funding shortfalls, and lack of experience. In addition, the responsibility for getting a BEE partner into these deals fell on the international partner. In many cases, such as with Xstrata, the BEE partners were connected to the ANC political party. But the argument behind the international deals, in the Amplats' world, is that credibility in the deal arises from the insulation of these deals from local fragilities, once a connected BEE partner and a compliant percentage share to the partner is concluded. This model is useful when reflecting on foreign direct investment, and how partnerships with domestic capital (in the mining case) can facilitate investment in effective ways, de-risking the deals substantially, while, in the case of platinum, managing supply.

Figure 23 – Mototolo mine - refined platinum production and investment, 2006-2020



Source: Author using Amplats' annual reports, 2006-2020. Note that the investment figures are only Amplats' share of capital investment. Possibly the investment doubles between years 2006 and 2016 when including investment from Aquarius.

Figure 23 shows the trajectory of the Mototolo mine's production performance. The mine was built fairly quickly, as evidenced by the steady-state trend beginning in 2007 to 2016, the period of the deal.

[105] Amplats paid R300 million to Kagiso Tiso for its 9.8per cent interest, and paid R1 billion to Glencore (Xstrata) for its 40.2 per cent share.

Table 16 – Trajectory of capital investment of the Mototolo deal

Asset	Intended/announced investment (+year)	Actual investment 2006-2010	Actual Investment 2011-2015	Actual Investment 2016-2020	Total
Mototolo	2001. Initial capital expenditure is estimated at R1.35 billion (in 2005 money terms) (Amplats, 2005b).	R723 million (Amplats' share) Total=c.R1,446 million	R484 million (Amplats' share) Total=c.R968 million	R1,965 million (Amplats' share) Total=c.R3,930 million	R6,344 million investments over 15 years
Tier	**Second Tier investment: deal with multiple rounds of modest investment**				

Source: Amplats' annual reports and announcements, 2001-2020

Table 16 documents the trajectory of capital investment associated with the Amplats-Xstrata deal. To get the mine built, initial investment was expected to be R1.35 billion in 2005 money terms. The subsequent investment beyond the initial investment was modest throughout the deal.

In terms of success in transformation, the international partnerships did not have transformation as a motive. Hence the schema of analysis relating to the extent to which deals translate into transformation must be somewhat relaxed, by foregrounding the question: to what extent do these deals facilitate capital investment in the platinum belt in South Africa?

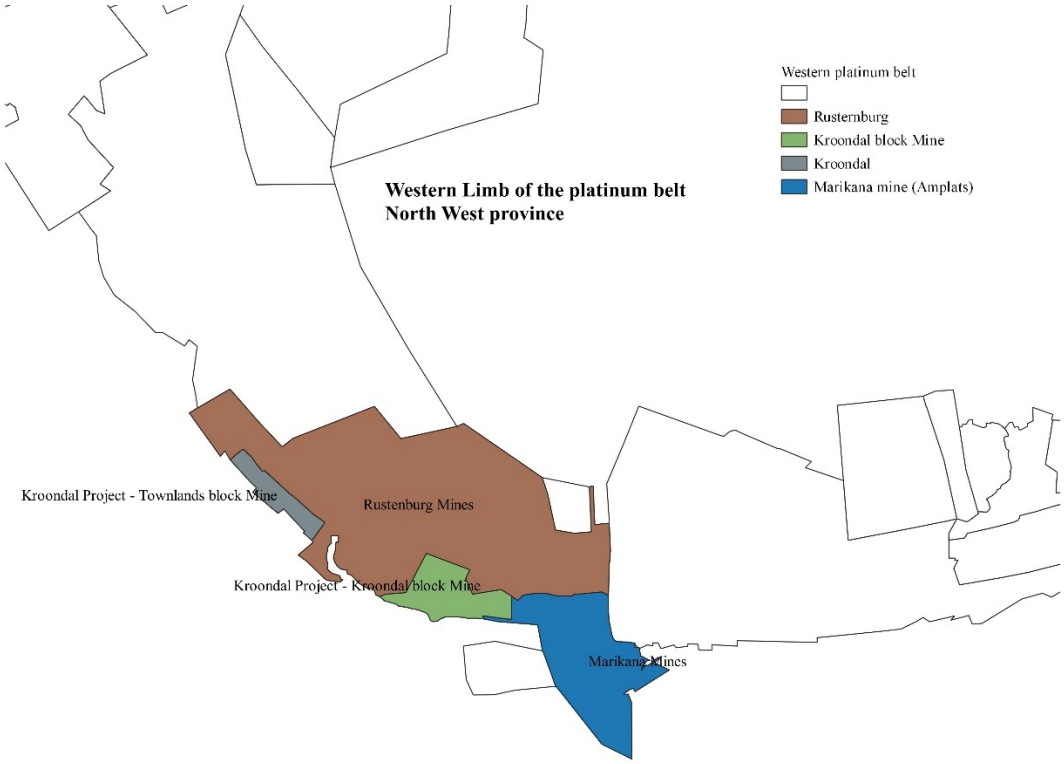
In light of the above findings, relative to other deals in this study, the Mototolo investment was a successful second-tier investment. The following subsection studies a similar deal between Amplats and an international partner, Aquarius.

6.7.2. The Aquarius deal. Kroondal and Marikana mines

Summary

The Amplats-Aquarius deal consists of the Kroondal mine and the Marikana mine. The case study documents a deal that goes well between the two partners, starting with the Kroondal mine, and following with the Marikana mine. Figure 24 shows the outline of the properties.

Figure 24 – The properties forming part of the Amplats-Aquarius deal



Source: Author, using QGIS software. Data from (Zientek et al., 2014).

Tracing the Amplats-Aquarius deal over two mines

1. Kroondal Mine

Aquarius platinum acquired and developed the Kroondal property in 1996, which came into production in 1999 (Gillian O'Connor, 2001). In June 2003, Amplats and Aquarius reached an agreement to mine contiguous properties on their respective Rustenburg and Kroondal lease areas. The agreement provided for the parties to pool their assets, while retaining ownership thereof, and to share the proceeds equally (Amplats, 2003b). Amplats would provide access to a portion of its Rustenburg property, and Aquarius would provide access to its existing Kroondal property and infrastructure. A new 250 000 tons per month concentrator was constructed for completion in 2005 and additional shaft capacity was sunk.

The capital expenditure for the establishment of the venture was expected to be in the region of R810 million (2004 terms), to be equally funded by Amplats and Aquarius. By 2004, Kroondal had reached steady-state production, construction of the new concentrator was already ahead of schedule and was expected to be commissioned in April 2005. Underground production ramp up was also proceeding according to plan.

During the 10 years 2006 and 2016, the partnership continued ramping up production, supported by additional infrastructure investment and continuous stay in business capital expenditure. The pooling-and-sharing arrangement added notable sales volume to both Amplats and Aquarius. Importantly, Amplats could maintain its strategy of controlling the supply side of the platinum industry through a deal with one of the few serious international miners in the South African platinum belt.

In 2016, Amplats announced an intention to exit the Kroondal deal and sell its own Rustenburg mine. However, when a new company, Sibanye Stillwater, bought Aquarius later in 2016, Amplats decided to remain in the deal with Sibanye (eNCA, 2016). Marikana (below) became part of the deal by extension of the success of the Kroondal partnership.

2. Marikana mine (not Lonmin "massacre" mine)

In 2005, given the success of the Kroondal partnership, Amplats and Aquarius began plans for an expanded deal. Negotiations were finalised to reconstitute the existing pooling-and-sharing agreement to include the Marikana property. The requisite board approvals were obtained at the close of 2005. The agreement was a permanent arrangement for the life of the Marikana mine. Subsequently, between 2006 and 2011, Marikana continued providing the partnership with moderate platinum production. However, in 2013, the Marikana asset was closed because it was yielding limited profits and scale compared to the Kroondal mine.

Conclusion - How does the deal fare in light of the hypothesis?

The story of the Amplats-Aquarius deal is very similar to the story of the Amplats-Xstrata deal. A visible picture that emerges is that the partnerships worked straightforwardly, based on win-win production and co-investment arrangements.

Table 17 – Trajectory of capital investment of the Kroondal and Marikana deal

Asset	Intended/announced investment (+year)	Actual Investment 2003-2007	Actual Investment 2008-2012	Actual Investment 2013-2018	Total
Kroondal	2000. JV with Aquarius on Kroondal. Expansion to cost R514 million (2000 money terms). (Amplats, 2000d)	Amplats' share = R576.8 million	Amplats' share = R922 million	Amplats' share = R1,222 million	Amplats' share = R2,720.8. Total approximately R5,441.6 million
Marikana	Not stated, but PSA used existing infrastructure from Amplats and Aquarius, requiring limited investment	Amplats' share = R335 million	Amplats' share = R109 million	Amplats' share = R0 million	Amplats' share = R444 Total approximately R888 million
Tier (overall)	**Second Tier: deal with multiple rounds of modest investment**				

Source: Author's calculations using Amplats annual reports.

Table 17 summarises the capital investments over time on both properties. Although the table shows absolute values per five year period, the numbers give an idea that relative to other deals in the study, this deal resulted in sustained moderate investment, making it a second tier investment and above average to the macro picture of failed deals in the platinum belt during this period.

6.8. Conclusion

Chapter 6 pulls the theoretical material developed in the study so far, and the story that characterised Amplats as a patient firm, into an empirical investigation at the micro and nano levels. To a great extent, this is the bottom line: does the theory and the story laid out earlier empirically amount to capital investment and transformation, and how is the result explained by the rules-deals hypothesis?

What helps in increasing the credibility of the 'tracing the deals method' is that the researcher does not have control over the investment results, neither does the researcher have control over the specific details and trajectory of the deals. To that extent, Chapter 6 has systematically and analytically shown an experienced Amplats (in Round Two onward) coming into the millennium with a clear deal with the government. This deal was shown to be crucial in winning space for Amplats to continue as the dominant producer of platinum in South Africa, and to isolate with tenure its core assets which were essential to the investment plans of Amplats. Both the deal with government and the asset level deals were crucial in completing a big picture platform supporting overall investment by Amplats throughout the study period.

The chapter has also investigated the specific nano level partnerships both with BEE entrants, and with international entrants. The deal with a patient BEE partner, African Rainbow Minerals, is an important finding and explanation of the process through which South Africa achieved pockets of tangible success in the BEE mining policy space. However, despite the hypothesis that contends that opportunistic BEE partners will compromise the stability of the deal, leading to low or no subsequent investment, the failure of the Pelawan deal is both surprising and disappointing. Despite the partner being "forced" on Amplats, the critical turning point in 2007 when Pelawan took over the capitalised Bokoni mine was a moment of hope where government could facilitate an opportunity for a BEE firm to become an operator. Tracing the deal makes it evident that the requisite subsequent capital investment to keep the mine going was sunk by Amplats. What was meant to be the fourth-largest platinum producer

with the Bokoni, the Ga-Phasha and the two smaller projects, ended up amounting to failed effort. Viewed in light of the Pelawan deal, an alternative hypothesis that the Amplats-ARM deal thrived on other factors such as access to capital, access to better grade of ores, or access to better infrastructure, cannot hold given the amount of capital and support that went into the government-sponsored Pelawan deal.

How did Amplats manage the risk of expropriation? Chapter 6 found compelling results that by crafting good deals, Amplats won the security of tenure of its mineral rights. Moreover, the quality of deals mattered, both in terms of a transformative rather than collusive deal with government, and transformative deals with BEE partners. The shadow of a robust rule of law emerged as an important support to the deals. When government appeared to either be delaying or shirking on the deal, Amplats could take the government to court over enforceable aspects of the deal. By so doing, the threat of the courts could facilitate cooperation from the side of government. Therefore, the role of the rule of law cannot be understated in this deals story.

Chapter 6 brought to full circle the investigation of the rules-deals hypothesis in the patient capital world. Subsequent cases in Section C and Section D will cast a comparative gaze on the findings and the mechanisms underlying the trajectories of investment and transformation. Chapter 11 will provide an overall discussion and conclusion to the case studies.

Section C. The strategies, deals and investment outcomes of patient capital

CHAPTER 7 – Crony myopic capital? Lonrho, Lonmin, and Ramaphosa

Abstract

What several African countries share in their story of decolonisation is the involvement of the multinational firm Lonrho. At a time of decolonisation, nationalisation, and disinvestment, Lonrho emerges from insignificance to become one of the largest and most widespread British companies in Africa. How did Lonrho keep government predation at bay, and how did it grow despite the odds? Drawing from extensive scholarly materials, news, and declassified intelligence reports, this chapter traces and analyses the corporate strategy of Lonrho. Contrary to a preoccupation with countrywide security of property rights, the chapter shows how Lonrho focused on locking-in credible commitment by pursuing targeted, personalised deals with ruling politicians. The strategy of "business as politics" was a trumping strategy for Lonrho, not only in institutionally weak polities, but in arguably more institutionally developed African contexts. The chapter argues that Lonrho saw African liberation politics as driven by the same incentives, regardless of institutional development. Therefore, to Lonrho, solving the security of property rights problem did not lie in formal institutions, but in playing politics. The company would learn to apply this reading of decolonising African countries even to South Africa during democratisation, adapting itself politically to South Africa's rule-based BEE policy, thus playing successfully to the material interests of the elite. Thus, the case demonstrates a corporate strategy that traverses different political settlements in the process of African liberation. The chapter draws some important conclusions. First, opportunistic capitalism thrives on short-sighted political leadership. Through collusive deals, opportunistic capital can circumvent demands for far-sighted fixed investment that brings new technologies and capital. Second, opportunistic capitalism is a master in isomorphism as a legitimating strategy. These findings on Lonrho will be explored further in Chapter 8 when studying Lonmin's deals and capital investment performance.

Résumé

Ce que plusieurs pays africains partagent dans leur histoire de la décolonisation est l'implication de la firme multinationale Lonrho. À l'heure de la décolonisation, de la nationalisation et du désinvestissement, Lonrho sort de l'insignifiance pour devenir l'une des entreprises britanniques les plus importantes et les plus répandues en Afrique. Comment la Lonrho a-t-elle réussi à tenir à distance la prédation gouvernementale et comment s'est-elle développée malgré les obstacles ? S'appuyant sur de nombreux documents universitaires, des nouvelles et des rapports de renseignement déclassifiés, ce chapitre retrace et analyse la stratégie d'entreprise de Lonrho. Contrairement à la préoccupation de la sécurité des droits de propriété à l'échelle du pays, le chapitre montre comment Lonrho a cherché à s'assurer un engagement crédible en concluant des accords ciblés et personnalisés avec les politiciens au pouvoir. La stratégie du "business as politics" a été une stratégie gagnante pour Lonrho, non seulement dans des pays institutionnellement faibles, mais aussi dans des contextes africains sans doute plus développés sur le plan institutionnel. Ce chapitre soutient que Lonrho considérait que la politique de libération africaine était motivée par les mêmes incitations, indépendamment du développement institutionnel. Par conséquent, pour Lonrho, la résolution du problème de la sécurité des droits de propriété ne résidait pas dans les institutions formelles, mais dans le jeu politique. L'entreprise a appris à appliquer cette lecture des pays africains en voie de décolonisation même à l'Afrique du Sud pendant la démocratisation, en s'adaptant politiquement à la politique BEE de l'Afrique du Sud basée sur des règles, jouant ainsi avec succès les intérêts matériels de l'élite. Ainsi, le cas démontre une stratégie d'entreprise qui traverse différents règlements politiques dans le processus de libération de l'Afrique. Le chapitre tire quelques conclusions importantes. Premièrement, le capitalisme opportuniste prospère grâce à un leadership politique à courte vue. Grâce à des accords collusoires, le capital opportuniste peut contourner les demandes d'investissements fixes à long terme qui apportent de nouvelles technologies et de nouveaux capitaux. Deuxièmement, le capitalisme opportuniste est passé maître dans l'isomorphisme comme stratégie de légitimation. Ces conclusions sur Lonrho seront approfondies au chapitre 8 lors de l'étude des transactions et de la performance des investissements en capital de Lonmin.

Background: Lonrho and Lonmin in 2022

Present day Lonrho is a London-based, privately-owned company established in 1998 after the unbundling of Lonrho Plc. Similar to the unbundling of Anglo, the ex-conglomerate company was split into non-mining assets that were transferred into Lonrho Africa Plc, while the mining assets were left in Lonrho Plc, which soon changed its name to Lonmin Plc – a platinum mining company. In 2013, Lonrho was purchased by Swiss billionaires Thomas Schmidheiny and Rainer-Marc Frey.[106] They delisted the company from the stock exchanges in London, Johannesburg, and the USA (Weavind, 2013). At the time of writing (2022), Lonrho describes itself on its website frontpage as follows:

> Lonrho is a privately-owned company with *patient capital* focused on investing in the growth of Africa. The company has extensive geographic presence in sub-Saharan markets with over 100 years' capital investment history. (Lonrho, 2022 emphasis added).

Present day Lonrho is not the unit of analysis of this study. Rather, it is the original company, dating back to the early 1900s, as well as its mining offshoot, Lonmin, South Africa's third largest platinum mining company until 2018. In 2019, Lonmin went defunct, and was overtaken by Sibanye Stillwater – a new large platinum mining company in South Africa formed during the restructuring of the platinum industry that followed the commodity price boom (Seccombe, 2019). That Lonmin no longer exists is precisely an outcome directly relevant to this research project's hypothesis – though noting that the research project started before Lonmin went under. What follows is an analytic narrative that surfaces the corporate strategy of Lonmin Plc. However, similar to the case of Amplats, Lonmin can only be understood by tracing its origin in the early 1900s in order to understand the entity when it plays the BEE game in Round One and subsequent rounds.

The analytic narrative traces the emergence of Lonrho during the volatile 1960s, a time of decolonisation, disinvestment, and widespread expropriation policies in Africa. For present purposes, a history of Lonrho's corporate strategy and the company's exploits in other African countries before it shifts attention to South Africa is revealing. Therefore, the narrative first draws insights from Lonrho's presence across several African countries, and across different

[106] Lonrho Africa changed its name back to Lonrho in 2007.

transformation policies.[107] This all leads to Lonrho moving into platinum in South Africa, becoming immediately the third largest producer of platinum from the 1980s, and manoeuvring through the political changes and expropriation risks with decades of experience in the rest of the continent. Platinum would prove to be one of the biggest assets of Lonrho, big enough to form London domiciled Lonmin plc, a company that would prove to be a major player in South African and global platinum supply.

7.1. Introduction to the study of Lonrho

Anglo American comfortably fits a research approach that mainly studies the company as a unit of analysis, but Lonrho is a different entity. To study Lonrho's corporate strategy is to simultaneously study Tiny Rowland, its CEO of almost five decades. This is not unusual in a personalised-dominant organisation such as Lonrho – a company closely driven by its leader. The case study is important here because of the central role of Lonmin, the platinum outshoot of Lonrho, in the platinum industry and black empowerment deals in South Africa. In particular, Lonrho introduced its own variety of black partners, and this can help us to test the underlying hypothesis of partnership affinity and investments. Thus, Lonrho is important because it helps us to understand Lonmin's corporate strategy, preferences, and networks. Lonrho is also important, because it helps us understand a form of multinational capital that thrives in risky geopolitical areas and has a track record of exiting without (in the South African case) much inward flow of foreign fund to finance its investments.

Drawing from extensive scholarly materials, news, and declassified intelligence reports, this section traces and analyses the corporate strategy of Lonrho. The narrative is organised using time. Round Zero traces the origins of Lonrho and its corporate strategy between 1960 and 1994. Round One (1994-2008) traces the emergence of Lonmin and how the entity manoeuvred BEE in early democratic South Africa. Round Two (2009-2012) focuses on Lonmin's partnership with Cyril Ramaphosa, in order to profile a prominent BEE partner chosen by Lonmin. The chapter finds that Lonrho/Lonmin's strategy was about pursuing targeted, personalised rent-seeking deals with ruling politicians. This is not a new finding nor is it an exception. What is useful in relation to the hypothesis and the theoretical framework (Typology A in Chapter 2) is that Lonrho had a strategy of "business is politics", not only in institutionally

[107] Typical transformation policies were indigenisation and nationalisation policies adopted by several Africa countries. These provide some form of comparative lens to show how Lonrho dealt with these policies in various African contexts.

weak polities, but in arguably more institutionally developed African contexts. Lonrho saw liberation politics (i.e., liberation parties/heroes turned governing parties) as driven by the same incentives, regardless of institutional development. The company would learn to apply this reading of liberation politics to South Africa during democratisation, adapting itself politically to South Africa's rule-based BEE policy, thus playing successfully on the material interests of the emerging black elite. Through its experiments with navigating around BEE rules and failures in Round One, Lonrho would eventually, in Round Two, find a suitable BEE partner in Cyril Ramaphosa. Ramaphosa would prove crucial in providing the "revolving door" between business and state, when Lonmin fell into the same predicaments into which Lonrho had historically fallen. This would lead to the Marikana massacre of 34 mine workers in Lonmin's mine by the South Africa Police Service. In an active democracy, this received the kind of attention that led to the fall of both Lonmin and Ramaphosa's Shanduka empire.

The chapter draws some important conclusions. First, an opportunistic I-firm thrives through a strategy of collusive deals. Second, the strategy of collusive deals can work effectively for an opportunist both in weak and in relatively strong governance polities. This is because even in relatively strong governance polities, politics and political parties may function in personalised ways, leaving room to co-opt leaders into collusive deals. However, in the case of South Africa, the rule of law was important in limiting the adverse effects of opportunism, in addition to buttressing asset level deals. Thirdly, Lonrho had a specific strategy of seeking high-return, front-loaded deals – and was mainly financing its activities through skilled accounting and locally-generated capital, rather than foreign direct investment. This provides an important caution on how opportunistic multinational companies may operate across different countries in Africa. Finally, the chapter suggests that falling on the opportunistic side of the capital spectrum may be incompatible with long term investment and tangible, virtuous transformation.

Having introduced Lonrho, the following section delves into Lonrho in action, starting in 1960 when the company was revived and reconstituted into a multinational company operating in Africa, with arguably South Africa as its last growth frontier.

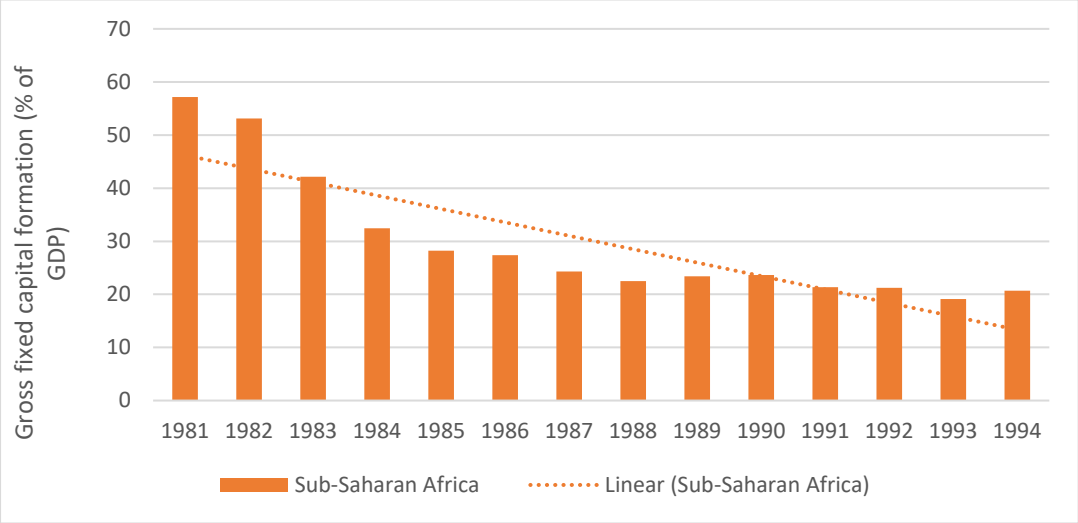
Round Zero (1960-1994) – The origins of multinational Lonrho and Tiny Rowland

7.2. The origins of multinational Lonrho and its corporate strategy during the decolonising wave in Africa

Lonrho capitalism in Africa reflects the uncertainty shared by all MNCs [Multinational Corporations] which must prevent the nationalisation impulse and other constraints threatened by host-state policies (Holloway, 1975: 225).

UK Prime Minister Harold Macmillan visited several British colonies in Africa in early 1960, culminating in a speech to the Parliament of South Africa on 3 February, where he said that "the wind of change is blowing through this continent" (Myers, 2000: 565). Soon thereafter, a wave of decolonisation spread throughout Africa.[108] The triple threat of decolonisation, nationalisation, and disinvestment (see Figure 25) – created a time of high expropriation risk for international capital. Yet, this is exactly when Lonrho aggressively bought large assets throughout Africa, ranging from mining, agriculture, vehicle distribution, newspaper publication, arms distribution, and several other businesses, becoming one of the largest British companies on the London Stock Exchange, and largest in Africa in terms of diversity and African reach (Uche, 2016).

Figure 25 – Gross Fixed Capital Formation in Sub-Saharan Africa, 1981-1994



Source: World Bank national accounts data: https://data.worldbank.org/indicator/NE.GDI.FTOT.ZS
Note: pre-1981 data on Sub-Saharan Africa not available from the source.

Lonrho became so large that it became a notable corporate player in the stories of the decolonisation moments of several African countries– From the start of decolonisation in 1960,

[108] Several African countries attained their independence during this period. These include Senegal (1960), Democratic Republic of Congo (1960), Burkina Faso (1960), Cote d'Ivoire (1960), Nigeria (1960), Sierra Leone (1961), Rwanda (1962), Uganda (1962), Kenya (1963), Malawi (1964), Zambia (1964), culminating in South Africa's freedom from Apartheid in 1994.

Lonrho established itself as a friend of Africa, and this image legitimised the company to several local African leaders (Cronjé, Ling & Cronjé, 1976). It became one of the most studied multinationals in Africa, not only because it was one of the leading, fastest growing multinationals in Africa during the decolonisation process, but perhaps because of its influence on the process itself. Lonrho was involved as a broker between London and African nationalists, distinguishing itself from other multinational corporations by its "disposition to establish personal relationships with key African leaders" (Holloway, 1975: 226). The CEO at the time, Tiny Rowland, enjoyed well documented access to "rulers, presidents and prime ministers who entertain [him]" (Mugomba, 1979: 58). Rowland was described "as an 'ambassador extraordinary' for many African countries, with access to the head of state whenever he wants it" (Mugomba, 1979: 60). He seemingly won the confidence of several African statesman by presenting himself as an honest broker who, unlike Cecil Rhodes, appeared "as a dedicated foe of white racism, an avid supporter of 'revolutionary capitalism'" (Mugomba, 1979: 58).

While Lonrho was known as a "sleepy little mining company in then Rhodesia [Zimbabwe]" during its first fifty years to 1961 (Spannaus, 1993: 75), by 1972 Lonrho had a turnover of approximately $550 million of which 78 per cent was produced in post-colonial Africa (Mutharika, 1975). By 1978, Lonrho was one of the largest and most widely established companies on the African continent, acquiring numerous ex-colonial companies in diverse sectors (Thachuk, 1989; Uche, 2016). By the mid-1980s, Lonrho comprised over 800 companies, was represented in over 80 countries, and employed 150,000 people (Uche, 2016). By 1990, the company had become a conglomerate with operations generating £6 billion revenue (compared to £1.7 billion revenue of Anglo) and £273 million profit. It operated 900 subsidiaries of which 80 per cent were in Africa (Anglo American, 1995; Jones, 2000).

How Lonrho grew into this remarkable multinational company will prove to be important for South Africa's own story of mining and transformation. The "how" would have implications for the manner in which corporate strategies would be entrenched as a way of playing the game. What follows is a narrative description of Lonrho's strategies in navigating the expropriation risks from 1960 (when Lonrho took off) to the late 1900s (when Lonrho established itself in South Africa).

7.2.1. Strategy 1. Lonrho as "Partner in Progress". Personalised deals with local elite

Rowland perceptively drew the right commercial conclusions from African nationalism. He saw that African national pride dictated a new kind of relationship with Western business. As such, Lonrho offered participation either to private local interests or to the government, signalling cooperation with the post-colonial reality unfolding on the continent. To its advantage, "the company was not tarred with the same colonial brush as many of its competitors and was therefore treated with less suspicion by African governments" *(Africa Report*, 1974: 44). The company gained a reputation of pursuing a philosophy of African participation in the company's interests, a reputation built upon excellent personal relations with several African leaders, notably Presidents Banda of Malawi, Kaunda of Zambia, and Kenyatta of Kenya (*Africa Report*, 1974: 44). "Rowland [had a] technique of co-opting to his board people close to power in government and, more specifically, relatives of ruling heads of state into his management" (Holloway, 1975: 224). This strategy of cultivating personal relations with Africans represented a departure from previous practices, under which foreign companies, especially mining and plantation concerns, tended to be isolated expatriate communities associated only with local people through their workforce (Holloway, 1975: 226). It is through these "deals" that Lonrho solved the problem of governmental mistrust of multinationals.[109]

In addition to joint rent-sharing deals with top politicians, Lonrho used two additional tactics to protect its investments. First, Lonrho used side payments. Side payments oiled the deal, and bought loyalty, because "trade follows not the flag, but the bribes" (*Africa Report*, 1974: 44). Its former chairperson, Angus Ogilvy, captured the philosophy as follows: "I was not against the principle [of special payments] or would not be against the principle of bribery because I think it has got to be done in certain countries; it is part of doing business like paying a merchant bank an underwriting fee" (Green, 1977: 59). Special payments included contributions to political parties, which Lonrho saw as necessary payments for doing business. The point was never to take sides, but to make money with whichever partners and in whatever political setting was conducive. Thus, several African leaders were "courted, cajoled, convinced, and

[109] Documenting how Lonrho operated in Africa during this time does not mean that this kind of practice was exceptional to Lonrho, or that it was exceptional to the African continent. Lonrho was only one of several foreign capitalist enterprises in Africa after 1960. Moreover, personalised politics and "crony capitalism" are pervasive across several countries in different continents.

even bribed to agree to circumstances or procedures that are generally institutionalised processes in many industrialised states" *(Africa Report*, 1974: 42).

Lonrho learned very early the mastery of creating political-legitimating deals in different and changing political environments. This experience across different settings is summarised in Table 18 below, which notes the type of political regime, Lonrho's specific strategy deployed in that country, and the results of that strategy relating to expropriation risk. Table 18 also includes a column of the several companies owned by Lonrho. But how did Lonrho grow so rapidly? The following section documents an additional element to the company's strategy.

7.2.2. Strategy 2. Opportunistic Buying with "Lonrho paper" of already-established or about-to-take-off Businesses

A pattern of acquisition of existing companies soon became Lonrho's chief style of operation with a concomitant rise of Tiny Rowland to the position of Chief Executive Officer (Holloway, 1975: 223).

The speed with which Lonrho mushroomed throughout newly independent Africa is explained by its aggressive acquisition of businesses. The acquisitions ranged from textile companies, to shipping groups, sugar plantations, tea estates, newspapers, real estate companies, and mines. As soon as Rowland took the lead, he quickly changed the way the company made money. He made the business depend heavily on his personal contacts and diversified swiftly through acquisitions and various deals (Burdette, 1980). This method of growth led some critics to say that Rowland was buying solid assets with "Lonrho paper", because many of the company's acquisitions were made in the form of share exchanges. According to the *Executive Intelligence Review*, "Lonrho snapped up hundreds of long-established companies, generally offering its own grossly overvalued stock in return for the undervalued stock of the companies acquired" (*EIR*, 1990: 51). Critics further charged that although Lonrho's growth was spectacular it was not particularly creative. Upon buying already established businesses, Rowland would invest little in improving management performance, if not entirely indulging in asset-stripping. Lonrho equally sold off, very fast, any entity that was not performing (*Africa Report*, 1974: 42).

The view that Lonrho did not significantly contribute to host countries' fixed capital accumulation is shared by several researchers. According to Marcia Burdette, "Lonrho is a scavenger company. It lives and grows by taking over existing assets" (Burdette, 1980: 104). Reginald Green argues that Lonrho did not offer any technology and management upgrading. Instead, "Lonrho was a conglomerate making money based on timely acquisitions of

companies whose profits were about to rise anyhow, projects needing finance for a 'ripe' scheme, and sound companies which were for some reason on the bargain counter" (Green, 1977: 60). Green concludes that Rowland was an entrepreneur of financial opportunities, not of knowledge or production or management. "The main strategy was 'juggling sums' – legally and illegally, not 'making more or better'" (Green, 1977: 60). This view, that Lonrho did not "fully transform the productive relations", but rather relied on "overtly political relations" to do business, is reiterated by Cronjé, Ling & Cronjé (1976). Bingu Mutharika makes a stronger conclusion that ":Lonrho does not necessarily create new industries or enterprises and, taking account of the high profits and turnover, its net contribution to industrialisation is, in some cases, negative" (Mutharika, 1975: 370). Issa Shivji observed that Lonrho did not inject foreign capital into national economies, and what appeared to be foreign capital tended to be local accumulated profits that grew the assets of the company without a net foreign exchange gain for the national economy (Shivji, 1973: 366).

To summarise, Lonrho was interested in front-loaded deals, liquid, and easy to abandon. Shown in Table 18, Lonrho generally thrived in several African countries using its strategy of personalised collusive deals with leading political elites. The table demonstrates a powerful result in relation to the argument about Lonrho: the company had mastered the art of collusive dealing in different countries with different political settlements, and arguably with varying levels of institutional development. A deal was adapted to the country situation. In some countries a deal mainly consisted of sharing rents with the apex political party, in other countries it involved board appointments in Lonrho subsidiaries, and in others it meant inviting government into passive co-ownership. In most cases, Lonrho was successful in keeping the expropriation of its assets at bay, but the method was generally incompatible with long-term investment and development.

How does Lonrho make its way successfully into South Africa, a country with a relatively strong rule of law by the time Lonrho relocates to the country (i.e., late 1970s)? In addition, how does the company manoeuvre through the changing political landscape and BEE pressures? The following section addresses these questions.

Table 18 - The corporate strategy of Lonrho and some outcomes, 1960s-70s

Ruler and Country political conditions and/or Policy Profile (1960s-70s)		Lonrho strategy	Result regarding keeping expropriation at bay for Lonrho	Some Lonrho Entities operating within country
Zimbabwe	British colony, then Mugabe/ZANU-led post 1980	Support for Nkomo's ZAPU, mistakenly believing it to be a sure government-in-waiting; upon losing, regroups in SA	Thriving, pre-independence of 1980; survives during early Mugabe era through signalling cooperation	David Whitehead Holdings (Zimbabwe's leading textile outfit); Lonrho Investment Co Ltd (vehicle and spares distribution); HENDRSON'S TRANSVAL Estates Ltd; Willoughby's Consolidated Co (publishing)
Zambia	**Kenneth Kaunda**. Comprehensive Nationalisation – (c.$421/300m). **Examples**: Copper (Anglo-American, Roan Selection Trust) valued at over $600m – 51%. Most manufacturing, transport, freehold land, banks, newspapers, and hotels.	Personal deals and favours for Kaunda, hire senior/influential political and government leaders	Successful, assets broadly protected (only Lonrho-owned newspapers and cinemas nationalised)	Heinrich's Syndicate Ltd (brewery and hostels); Lonrho Zambia Ltd (newspapers, construction, and vehicle distribution); The North Charterland Exploration Company (investment holding co.)
Ghana	**Nkrumah regime, and military government.** Selective Nationalisation (c.$260/410m) **Examples**: Large mineral enterprises: gold (Lonrho), diamonds (C.A.S.T.), bauxite (British Aluminium), and manganese (Union Carbide) (55%). Large timber operations (55%); large enterprises (e.g., sugar, fertilisers) – 55%; petroleum refining – 100%.	Direct personalised deals with government leaders at each change of government	Successful: partnership agreement with government; government ignored UN sanctions on Rhodesia; impressive outcome under unstable government	Ashanti Gold Fields Corporation Ltd (Gold Mining. a "cash cow" to support Lonrho's acquisitive strategy throughout Africa)
Malawi	**Hastings Banda.** Personalised autocratic/presidential patronage Minor nationalisation (c. $30/70m) Multinational-friendly for foreign currency and Banda's power	Direct deals with Banda; inter-hiring between Lonrho and Banda's government	Successful, with government involved in Lonrho's textile and other interests.	Lonrho (Malawi) Ltd (vehicle and spares distribution); Central Africa Co Ltd (tea plantations; one of the four largest European companies operating in colonial Malawi.)
Tanzania	**Julius Nyerere regime** (one party state, 1965 constitution). Nationalisation ("Arusha declaration") (c.$690/80m). **Examples**: Plantations; manufacturing; large buildings; hotels; banking; insurance; petroleum distribution; wholesaling.	Participatory agreements with government and private capital	All Lonrho subsidiaries nationalised in 1978; but Lonrho kept joint ownership of a brewery with Dar es Salaam city council.	Express Transport Co Ltd (transport, coffee warehousing); Central Line Sisal Estates Ltd (sisal estate); The African Investment Trust (finance, banking); Tancot Ltd (trading and manufacturing)
Kenya	**Jomo Kenyatta.** Multinational-friendly for foreign currency and Kenyatta's power. Nationalisation (c. $172/280m). **Examples:** Banking – 60%. Petroleum Electric power– 50%. Some farms for redistribution to Kenyans. Indigenisation: massive, e.g., sugar; rough textiles; wholesale and retail; real estate.	Partnerships with Kenyatta relatives; hiring Kenyatta relatives; cultivated ties with ruling Kenyatta family; local borrowings (no capital injection)	Established East Africa in 1967; by 1972, had approximately 50 subsidiaries in Kenya.	Motor Mart Holdings Ltd (motor trading); East African Tanning Agent (wattle growing and ranching); Consolidated Holdings Company (printing, publishing, newspapers); Express Transport Co Ltd (transport, coffee warehousing)
Congo	**Mobutu Sese Seko, personal rule, arbitrary politics.** Nationalisation (c. 481/640m). **Examples**: Copper (Union Miniere) valued at $700 million– 100%; diamonds (M.I.B.A.); petroleum production – 15%; plantations; petroleum; transportation; large manufacturing companies – 100%.	Acquiring of existing foreign enterprises; deals with and hiring of Mobutu associates (e.g., Mboti Litho, Mobutu's uncle)	Not so successful; nationalised assets in 1971, but mostly restored in 1976.	Cominiere SA: Trading in Europe, Congo, and public utilities in the Congo; Cometrick (electricity)
Uganda	**Edward Mutesa, Idi Amin.** Politically instability. Nationalisation (c.$48/19m). **Examples**: Small copper mine; plantations; banking, insurance; petroleum distribution; wholesale and retail trade.	Participatory agreements with government.	Mainly unsuccessful (fragile political settlement)	Watergate Steam Shipping Co Ltd (ship Owners); Burns And Blane (Uganda) Limited
Côte d'Ivoire	Personalised rule around **Houphouet-Boigny**, discretionary deals with highest private bidders	Partnerships with state enterprises; Close ties with Gilchrist Olympio, son of Sylvanus Olympio.	Mixed success; undermined by equally cunning intermediaries/ brokers, rather than policy effects.	Societe Ivoirienne D'exportation S.A. (commodity marketing enterprise); Sodesucre (state sugar corporation)
Sudan	Colonel **Jaafar Nimeiri**; military regime; personalised	Used ruler's advisor, Khalil Osman	Successful, but withdrew many projects before overthrow of Nimeiri in 1985	Sugar plantations; sole purchaser of capital and semi-capital goods from the UK for Sudanese government; textile factory

Sources: Africa Report (1974), Rood (1976), and Thachuk (1989).

Round One (1994-2008) – From Lonrho to Lonmin: Crony Deals During Apartheid and Newly Democratic South Africa

The rest of the chapter turns to Lonmin's navigation of the BEE policy in democratic South Africa. The objective remains to surface the character of Lonmin. However, in this process, there is an overlap with the deals story (a meso- and micro-level overlap). The other objective is to show the link between Lonmin and its prominent BEE partner, Shanduka. However, this partner only appears later, at the close of the 2000s decade. Therefore, the narrative proceeds chronologically in order to bridge the connections, while Chapter 8 will then borrow part of the deals story as a way to analytically study the associated investment outcomes. Repetition will be limited.

7.3. From Lonrho to Lonmin to Incwala. Corporate engagement in the newly democratic South Africa

What multinational company Lonrho was to several African countries during decolonisation, so it was to South Africa during apartheid and democratisation. South Africa has a new appreciation of the history of Lonrho, following the declassification of apartheid military intelligence records in 2017. The documents reveal Lonrho's/Rowland's role as an intelligence broker for the apartheid government as early as 1975 (Vuuren, 2017). As noted earlier, Lonrho played all sides of the game, as suited its needs. Rowland relied on a member of the white South African apartheid political elite, Dr Marquard de Villiers, a cardiologist who was a director of Lonrho responsible for managing Lonrho's interests in South Africa. Importantly, de Villiers was a "golf friend" of South Africa's prime minister John Voster and part of the Afrikaner elite group, the Broederbond (Trewhela, 1990).[110] He thus provided Rowland with direct access to the rulers. During this period (the mid-1970s), Lonrho's business in South Africa mainly involved providing government with intelligence, and thereafter procuring arms for the apartheid regime from 1978, a year after the mandatory UN Security Council embargo on South Africa was adopted (Teltsch, 1977; Vuuren, 2017). Lonrho provided arms through contracts with the state armaments company, Armscor.[111] The company continued playing this role well into the mid-1980s (Vuuren, 2017). This relationship with the apartheid government facilitated Lonrho's purchase of platinum mines Eastern and Western Platinum in the later North West province (Davies, 1990), sinking its first platinum mineshaft in 1987 (Vuuren, 2017). Lonrho instantly became the third largest global producer of platinum, delivering 250

[110] See Chapter 10 for more on the Broederbond.

[111] In addition, a Lonrho South African subsidiary, Matrix Products (Pty) Ltd., had three divisions engaged in the manufacture of explosives, ammunition, and air and ground weapons (EIR, 1993).

million ounces annually (Davies, 1990). When several conglomerates unbundled post South Africa's 1994 transition to democracy, Lonrho's platinum assets would spin-off into Lonmin.[112]

While working with the apartheid government, the company also kept close to the African National Congress (ANC) elites as early as the 1980s. Lonrho was one of the main sponsors of discussions with the ANC in Lusaka in 1985, discussions headed by then head of South Africa's National Intelligence Service, Niel Barnard (*EIR*, 1993). In particular, Rowland kept in close contact with Oliver Tambo, then president of the ANC. For example, when Tambo suffered a stroke in August 1989 while in Lusaka, a Lonrho jet rushed him for treatment at a London hospital. Rowland saw Tambo to the end, attending his funeral in 1993 (Carlin, 1993).

Lonrho extended this relationship to Nelson Mandela when he was released from prison and took over the ANC presidency in 1991. According to the *EIR* investigative team, a South African intelligence source divulged that Lonrho gave $20 million to the ANC to relocate their offices from Lusaka to Johannesburg, in order to consolidate their (ANC's) internal support *(EIR*, 1993: 133). In 1993, with the political transition to democracy at hand, the ANC had been looking to establish a newspaper to support itself politically during the pending elections, though some felt it would be an expensive exercise (Karl Maier, 1993). Lonrho seized the opportunity by offering to buy the ANC a newspaper and resource it. This was not a unique offer, because Lonrho regularly made this kind of offer to African leaders. Analysing Lonrho's business methods, Agrippah Mugomba notes that "the purchasing of existing newspapers and the creation of new ones, together with the ingenious strategy of co-opting local corporate executives and 'technocrats' into its managing directorates… produce the combination which effectively seals these expedient arrangements" (Mugomba, 1979: 59). These favours to the ANC saw the notorious Tiny Rowland being awarded the Star of South Africa by the presidency in 1996 (Open Secrets, 2017). At that stage Rowland's "other side" was not yet apparent to the government.

Apart from presenting an acceptable face to the new South African political elite, how did Lonrho manage its platinum interests in South Africa? What follows is a narrative that surfaces how Lonrho navigated the pressures faced by the mining industry.

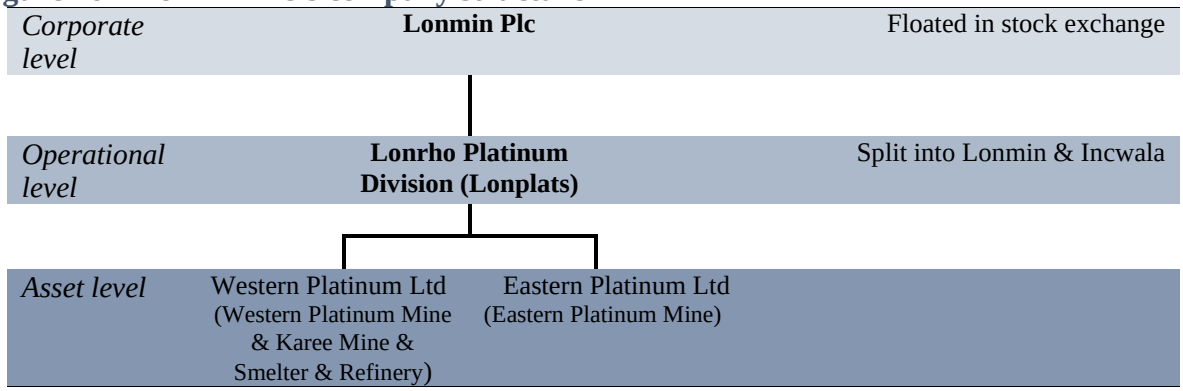
[112] In 1998, Lonrho was split into two entities - Lonrho plc and Lonrho Africa plc. Lonrho Plc was renamed Lonmin in 1999 and became a mining-focused operation. See Lebelo (2017).

7.3.1. Unbundling of Lonrho plc to create Lonmin

While South Africa was undergoing a period of negotiations between 1990 and 1994, culminating in a transition to democracy in 1994, Lonrho was undergoing its own transition. Despite its large turnover in 1990, the company's true financial health was poor. The African states on which Rowland's fortune had hitherto relied were in political turmoil, which effected Lonrho's profits (Shaoul, 1998). Some shareholders wanted Tiny Rowland, the largest individual shareholder at the time holding 20 per cent, out of the company (*The Independent*, 1994). Rowland opposed a proposal to unbundle Lonrho into a focused mining company. A boardroom coup managed to remove Rowland in 1994. He was replaced by Dieter Bock – a German property dealer – who took the helm as a controlling shareholding at Lonrho.[113] Bock, however, exited Lonrho in 1996, selling his stake to Anglo American for £414 million (*The Irish Times*, 1996). The unbundling of Lonrho soon followed, splitting the company into Lonmin and Lonrho Africa in May 1998 – two months before Rowland died at 80 years of age (Hall, 1998; Shaoul, 1998).[114] Lonrho Africa plc went on to quickly dwindle, dropping in market value from £270 million in March 1998 to £20 million in 2002 (Raymond, 2005).[115] However, from the outset Lonmin was the third biggest platinum company in South Africa, though the company remained London domiciled. The asset composition of Lonmin consisted of three mining units, and a smelter and refinery infrastructure (Lonrho, 1999).

[113] Rowland had reduced his stake to 6.25% by 1996 (Behrmann, 1998). Dieter Bock was Rowland's protégé-turned-rival (Farrelly, 1999). Rowland officially ceased to be a director in Lonrho on 2 March 1995 (Lonrho, 1996).
[114] Rowland died during July 1998 in London from skin cancer (*Mail & Guardian*, 1998).
[115] Rowland, who also owned shares in Lonrho Africa, did not believe that Lonrho Africa's management possessed his contacts and connections in Africa. He cautioned that if there were not any deals, the company would stagnate and disappoint (Behrmann, 1998).

Figure 26 – Lonmin Plc's company structure



Source: Author. Data from Lonmin annual report (1999)

The formation of Lonmin created a structure captured in Figure 26. The top level is the group level, domiciled in London where it also had its primary listing on the London Stock Exchange. At the asset level, the company owned platinum assets in South Africa, collectively known as Lonplats. Lonmin Plc owned 73 per cent of Lonplats, while Impala platinum owned 27 per cent (Kollewe, 2006).[116] At the corporate ownership level, Anglo, which had bought Dieter Bock' shares, sold its shares back to Lonmin in exchange for Lonmin's non-platinum assets. The rest of the issued share capital was mainly taken up by institutional investors, with Lonmin noting in its annual reports that the institutions were fund managers for undisclosed principals.

The spine of the company remained defined and intact – Lonplats was a South African based company, holding South African mining rights, and therefore *de facto* an I-firm liable to South Africa's BEE policy. The company had been headed by Sir John Craven since 1997, who had retired as chairman of Deutsche Morgan Grenfell, once a leading London-based investment bank. Craven led Lonmin through its unbundling phase and remained the head of the company until his retirement in 2009.

Given the changing rules of the game in the mining industry during this time, how did Lonmin keep its mining rights secure under Lonplats? The following section documents Lonmin's strategy, which draws heavily on Rowland's corporate strategy.

[116] Impala Platinum acquired this stake in Lonplats in 1990, with intentions to take over Lonmin. This attempt was blocked by the European Commission in 1996 (European Commission, 1996).

7.3.2. A creative strategy to the BEE rules

"*Incwala, praised as a broad-based national flagship for empowerment in the mining industry*" – Engineering News, 2005 (Madlala, 2005)

Rowland had clearly managed to present Lonrho as a friendly face to the ANC leadership in the early 1990s, apparently unaware of the kind of shrewd game Rowland was playing. Since Rowland had built a relationship with Oliver Tambo, who was Thabo Mbeki's mentor (Gumede, 2007), the company had an acceptable presence during its first decade post unbundling, which coincided with Mbeki's presidential term.[117] This friendliness will also become apparent in Round Two when documenting the history with BEE partner, Cyril Ramaphosa. The result of this "positive" history meant that while platinum peers such as Anglo and Gencor were proactively engaging in BEE deals well ahead of the official promulgation of the legislation in 2004, Lonmin remained disengaged. This was until 2003, months before mining companies had to begin showing their BEE plans.

Leading the creation of Incwala were Lonmin chairperson Sir John Craven, CEO Brian Gilbertson, and finance director Arne Frandsen (Mabanga, 2004). The three conceptualised the idea of creating, within Lonmin and as an extension of Lonmin, a black company called Incwala. In essence, Lonmin created a BEE shell-vehicle, that it would subsequently fill with politically connected or politically palatable partners. The following briefly summarises how the plan unfolded.

With the imminent 2004 "deadline", Lonplats – shown in Figure 26 – needed to reflect plans for changing its ownership structure to include BEE partners owning at least 15 per cent by 2009, and eventually 26 per cent by 2014. Facing its own pressures to embark on empowerment transactions, Impala Platinum (noted earlier as a shareholder) sold its 27 per cent stake in Lonplats back to Lonmin for US$800 million, thus giving Lonmin 100 per cent of Lonplats (Innocenti, 2004). In turn, Lonmin ring-fenced 18 per cent of this stake to "create" a BEE company, but would in fact rent out this stake, whereby BEE partners would "move in" to Incwala, and when they "moved out", nothing would have fundamentally changed because Incwala was Lonplats, an asset BEE partners could not take with them.[118] In other words, to

[117] This does not mean that Thabo Mbeki had a relationship with Lonrho, only that Rowland had positioned the company well enough from any proactive governmental hostility.

[118] A step by step process of the deal: Implats transferred 9.0 per cent directly to the BEE partners for US$240.1 million and transferred 18.1 per cent to Lonmin for US$554.4 million. Then, the BEE partners sold the 9 per cent (acquired from Implats) to Incwala Resources for US$240.1 million in cash, in exchange for 26 per cent of

the question, who or what is Lonmin's BEE partner? The answer would be Incwala, rather than an independent BEE firm owning a stake in Lonplats.[119] The task thereafter was to give Incwala a legitimating face.

Having created Incwala, Lonmin sought out black beneficiaries who would match its strategy and public message. Lonmin only took nine months to put together a suite of partners, partly a result of starting the process very late in the deals game (Innocenti, 2004). To legitimise this different approach, Lonmin said it was breaking away from "Black Economic Enrichment" and co-opting ANC linked black tycoons, instead solving the "BEE problem" by going for little-known black investment groups (Bream & Reed, 2004). The preferred partners that were invited into the deal and that would be its face, were a mix of well-known black financial boutiques led by ANC connected leaders, and newly emerging black businesswomen (Innocenti, 2004; Mabanga, 2004). The group of partners was as follows, listed in descending order of "the face of Incwala":

i. Dema Group – led by Ms. Zanele Mavuso Mbatha and Ms. Dawn Marole
ii. Andisa Capital (Thelo Investments) – led by Mr Saki Macozoma (Chairman) and Mr Ronald (Ronnie) Ntuli (Chief Executive)
iii. Vantage Capital – led by Mr Mutle Mogase
iv. By necessity, Bapo-Ba-Mogale – the "broad-based" part of the deal, led by the Mogale traditional leadership

The above group constituted a perfect BEE partner for Lonmin. The Dema Group partners were young, black professional women with no known political connections. The rest of the partners had enough political connections to the ANC leadership at the time. Moreover, all these partners were mainly professionals in finance and would likely have little interest in becoming miners. To top it off, the composition included the local community. More detail on the backgrounds and connections of these partners is provided in Table 67 in the Appendix to Chapter 7.

Incwala equity (Innocenti, 2004). Lonmin, in turn, transferred 9 per cent of its 18.1 per cent stake to Incwala, effectively enabling the BEE partners to hold 52.8 per cent of Incwala. (The 18 per cent held by Incwala translated to each group holding 16.2 per cent of the 52.8 per cent controlling stake, while the Bapo-Ba-Mogale held 2.8 per cent (Mabanga, 2004). In total, Incwala held 18 per cent of Lonplats, while Lonmin would have 82 per cent ownership of Lonplats. This deal fulfilled the requirements to transfer 15 per cent to black partners by 2009 (26 per cent by 2014).

[119] It is not clear whether this was meant to solve the problem of black companies exiting deals. If so, it would not have solved the problem of partners invited into Incwala leaving.

Lonmin was successful in projecting the message that the Incwala consortium was not politically connected and broad based (numbering 50,000 people), including employees and communities, and led by black women. Incwala excelled above the rest in the image of transformation. Thus, Incwala was rarely identified with the individuals behind it. However, the true picture of the consortium is different. In fact, it had a strong Thabo Mbeki ally, Saki Macozoma (*Financial Times*, 2007; Kgosana, 2009; Makinana, Molele & Letsoala, 2012), and Mutle Mogase, in business with Mbeki allies as early as 1994. Saki Macozoma had a very similar profile to Cyril Ramaphosa of an ANC insider turned BEE businessman (See next section). Macozoma was believed to be a president in waiting (*The Economist*, 2001). Mutle Mogase was the man driving business with Mbeki allies such as Mbhazima Shilowa and Moss Ngoasheng (Robinson, 2020). Moreover, the consortium would have been acceptable to Thabo Mbeki, led by a US-educated exiled black woman, and other partners well connected in both the Mbeki ANC and the private sector, each owning their investment companies.

To that end, by May 2004, Lonmin had secured the endorsement of the Department of Mineral Resources and secured commitment from the state-owned Industrial Development Corporation (IDC) to fund the formation of Incwala (Impala Platinum, 2004).[120] Box 7.1 in the Appendix to Chapter 7 suggests that the IDC was a site of ANC internal factional battles in BEE deals. Shortly following these agreements, Lonmin held a flashy launch of Incwala at Johannesburg's Park Hyatt hotel, supported and attended by Minister of Minerals and Energy Phumzile Mlambo-Ngcuka, who was Thabo Mbeki's deputy president 2005-2008 (Mabanga, 2004). Commenting on the transaction, Mlambo-Ngcuka said:

> As presented, this transaction is in line with the requirements of the new mining law. The Department of Minerals and Energy will at an appropriate time evaluate compliance with all aspects of the law; the Scorecard and the Mining Charter, that is when the parties formally present themselves for conversion to new order mining rights. It is at that stage that any due credits for compliance will be formally awarded

[120] On 6 September 2004, the IDC signed a legally binding document to fund Incwala, acquiring a 23.6 per cent interest in the empowerment vehicle (*Mining Weekly*, 2004). Implats and Lonmin provided vendor-financing of US$122.0 million to Incwala to fund the BEE partners' equity stake (Impala Platinum, 2004). Then, Lonmin bought itself a stake of 23.6 per cent in Incwala, for US$90.3 million, making it a shareholder in its own empowerment partner. The IDC matched this by taking 23.6 per cent direct equity in Incwala for US$87 million in cash (Impala Platinum, 2004; Mabanga, 2004). The deal was worth $490.2 million. At the conclusion of all these transactions, Incwala started its life with a value of US$650 million, and a debt of US$125 million, therefore a little indebted (Bream & Reed, 2004). Moreover, so confident was Lonmin in the financial sustainability of Incwala, that it indemnified Implats for its vendor-financing for up to US$95.0 million, should Incwala be unable to repay the loan upon maturity. Lonmin believed this to be very unlikely given strong cash flow from its platinum mine assets (Implats, 2004).

> to the parties. We wish the partners success in this business venture and the courage to face the challenges that lie ahead (Implats, 2004).

Given such visible support for the Incwala deal, and as one of the biggest BEE entities at the time in platinum mining (Wu & Moodley, 2009: 7), Lonmin's old order rights were swiftly converted into new order mineral rights, making Lonmin *the first platinum company to secure mineral rights tenure under the MPRDA rules*. Lonmin was the last major platinum mining company to close a BEE deal, yet the first company to have its rights converted.[121]

Did the deal demonstrate a transformative route to empowerment, at least with time, or was it purely a bad deal meant to manage the rules? There are two important features to highlight before closing the story of Round One of Lonmin's BEE game.

Table 19 – Incwala shareholding, 2004

Entity	**Percentage holding in Incwala**	**Effective share of Lonplats (%)***
Dema Incwala	16.67	3
Andisa (Thelo Incwala)	16.67	3
Vantage capital	16.67	3
Bapo-ba-Mogale (*and Lonplats employees, and South African Women in Mining Investment Holdings*)	2.8	0.5 (hence NUM's general secretary protested against the deal, calling it a "fake BEE deal". See Fin24 (2004a)
Sub-total	**52.8**	**9.5**
Industrial Development Corp. (IDC)	23.6	4.25
Lonmin	23.6	4.25
Total	**100**	**18**
Total Beneficiaries	**"50,000 black shareholders"** (Mathews, 2005)	

Source: Author's calculations. Data from Madlala (2005); *MiningWeekly* (2004); Mabanga (2004); IOL (2006a).* Incwala share equivalent to 0.18 Lonmin share

First, the effective ownership of Lonplats by the BEE partners was too small to support the creation of independent black enterprises. Shown in Table 19, the effective ownership of Lonplats of the three top partners was 3 per cent each. Then, the 50,000 community shareholders held 0.5 per cent. In turn, Lonmin, which already owned Incwala by design, and by shares, "bought" additional shares in Incwala, giving it an additional 4.25 per cent stake in Lonplats. To top it off, Lonmin had extended these shares to the partners using debt. This meant that the partners did not own Incwala in any material sense.

[121] According to Webb, the second company to secure its rights was Aquarius, after its deal with Zwelakhe Sisulu's Savannah Consortium (2006a).

The second feature of the creation of Incwala is that because Lonmin owned Incwala, it created its own board reflecting a duplication of the Lonmin board. The board was chaired by Lonmin's CEO, and included other senior Lonmin directors on the board.[122] (*Engineering News*, 2005a; Klein, 2015a). The public image, however, foregrounded Zanele Mavuso Mbatha and Dawn Marole as the face of Incwala, whenever a face was needed. The CEO position of Incwala was eventually given to Ms Zanele Mavuso Mbatha, but control remained with Lonmin (See the Appendix to Chapter 8 for the rest of the board).

By 2005, Incwala was headed by Arne Frandsen, its third CEO since its founding in September 2004. Frandsen was swift to establish an image of Incwala as an example of national development policy, in the game to produce rather than manage BEE shares. Quoted in *Engineering News*, Frandsen said: "We look for investments that would enable us to be actively involved and apply our empowerment philosophy and business views – I do not believe in being a quiet partner" (Madlala, 2005). Frandsen reported that they had a shopping list of partners, while citing their strong position to undertake deals, because "[w]e have a very conservative balance sheet, which makes us well-positioned for acquisitive growth." (Madlala, 2005). At the time, Incwala had an estimated value of R5-R6 billion (Madlala, 2005), an exponential growth backed by the platinum price boom, secure mining rights very early in the BEE process, and Craven's solid consistent message of Lonmin as a post-Rowland transformed company (Shelley, 2006). However, the peak was imminent, followed by collapse, as documented below in what is the closing narrative of Round One.

[122] Specifically, Ian Farmer, Brian Gilbertson, and Arne Frandsen.

7.3.3. The peak of isomorphism, and collapse of Incwala scheme

In 2007 Lonmin received special coverage in *The Economist*. Incwala was touted as the future flagship of black mining in South Africa with platinum assets worth $1.7 billion. So impressive in appearance was the Incwala scheme, the World Bank IFC had awarded Lonmin a development grant of $150 million – its largest investment to date in Sub-Saharan Africa, citing Lonmin's success as a transformed community-uplifting company (Creamer, 2007a; IFC, 2007). Notwithstanding, *The Economist* also noted that "[m]ore than two years and three chief executives later, however, little has happened... Incwala's market value has climbed from $650m at its birth to $1.7 billion today. Yet it remains a start-up, albeit one with a fat balance sheet" (2007). Nothing indeed happened, including plans to acquire mines and operate them, list on the JSE, and become the next Xstrata (Bream & Reed, 2004). Instead, what did happen is that the healthy financials in 2004 turned into large debt that required refinancing (*Mail & Guardian*, 2012).[123]. The debt situation was exacerbated by the global financial crisis. The year 2009 saw the first collapse of Incwala.[124] Lonmin also saw a partial takeover by global commodity trading company, Xstrata.

At its height in 2007, Lonmin was worth £6.5bn (Bream, 2009), an attractive proposition for Xstrata, which had until that time interests in coal in South Africa, and was looking to penetrate platinum mining. To that effect, in August 2008 Xstrata announced a takeover bid of Lonmin (Reuters, 2008). However, by October, the price of platinum had fallen significantly, as had the share price of Lonmin (Kollewe, 2008). Xstrata abandoned its plans for a 100 per cent takeover, instead taking a controlling stake of 24.9 per cent.[125] This moment changed Lonmin in three fundamental ways. First, Lonmin was in the control of a company with a documented reputation of predatory tactics, as will be discussed below. Second, the institutional investors that had been the main shareholders (at corporate level) exited the company, giving way to aggressive buying by speculative hedge funds (Bream, 2009). Third, Xstrata would bring into Incwala its BEE partner, Cyril Ramaphosa, who also had a comfortable history with Rowland, and enjoyed great influence in the ANC and the private sector in South Africa. Ramaphosa moved into the Incwala stake, beginning Lonmin's Round Two of the BEE game.

[123] During this period, Incwala had announced that there was a pending deal between itself and Mvelaphanda to explore a Mvela acquisition of Incwala. However Mvelaphanda (discussed in Chapter 6) issued a statement to the JSE that it was not interested nor in discussions with Incwala, contrary to market expectations (IOL, 2009).
[124] Lonmin warned that it might be called upon to pay out R990 million in loan guarantees for Incwala shareholders, due to mature in September 2009.
[125] In other words, Xstrata was the single largest shareholder.

Round Two (2009-2012). Finding a suitable partner in Cyril Ramaphosa's Shanduka

The Round Two narrative documents Lonmin's strategy of manoeuvring the rules-deals environment. The narrative begins with a broad outline of the new Incwala deal, and thereafter goes back to give empirical background on the history and emergence of Cyril Ramaphosa as a prominent BEE partner in the BEE deals market. This round ends abruptly with the tragic massacre in 2012 of 34 mine workers at Lonmin's mine in Marikana, North West. This event will usher in a closing Round Three to the chapter.

7.4. Cyril Ramaphosa as a BEE champion in mining, and beyond

In early 2010, Cyril Ramaphosa's company, Shanduka Resources, was announced as the new partner taking over the 50.03 per cent of Incwala stake formerly held by the first group of partners, in a R2.8 billion deal (Pickings, 2010).[126]. The *Mail and Guardian* noted that Ramaphosa, who would also become a non-executive director in Lonmin, was politically and publicly palatable: "… politically he has remained ANC without being too closely identified with the Zuma faction, despite being named as a conspirator against Thabo Mbeki" (2010). To effect the transaction, Lonmin extended a loan of R2.5 billion to Shanduka, while Shanduka only paid R300 million for the stake. Lonmin was quoted as saying that "the security of the stake is Incwala itself" (*Mail & Guardian*, 2010). This was true, because Incwala remained by design Lonmin's company. The loan was agreed to be paid back within five years, with Lonmin asserting that it had constructed a bullet-proof deal, calling it a long-term partnership. By placing Ramaphosa on the Lonmin board, the I-firm said it was placing its BEE partner close to operations (Creamer, 2010). Lonmin announced its decision to take Ramaphosa on board as follows:

> Operating successfully in South Africa today requires a Black Economic Empowerment (BEE) partner that can actively add value. Meeting South Africa's transformational aspirations, addressing productivity challenges in partnership with unions and investing in growth with assurance of mining right security, all require that the relationships with our many stakeholders operate effectively…The Board therefore considers that a strong partnership with Shanduka will serve Lonmin well. Our commitment to the importance of this

[126] The "0.03" per cent is crucial to be added because it meant Ramaphosa could be presented as the majority owner of Incwala.

> partnership is evidenced by Cyril Ramaphosa joining the Lonmin Board… (Lonmin, 2010)

Who is Cyril Ramaphosa, and how did he become a partner of choice to Lonmin? The following traces the rise of Ramaphosa to surface the ways in which he might have been a good fit for Lonmin.

7.4.1. The emergence of Cyril Ramaphosa as a unionist, politician, and businessman

Ramaphosa had been identified and groomed by mining magnates Anglovaal and Anglo American since the 1970s. With a rise in mining labour resistance and riots in the 1970-80s in South Africa, the Oppenheimers and Clive Menell of Anglovaal (the company eventually taken over by Patrice Motsepe) set up the Urban Foundation in 1977, an organisation meant to provide corporate social assistance to communities in order to curb resistance. They installed Ramaphosa as a leader of the foundation. Menell had met Ramaphosa in earlier years while Ramaphosa was in trouble with the apartheid state for his participation in anti-apartheid activism. Being impressed with Ramaphosa, Menell developed a friendly relationship with him. Soon after, Ramaphosa was in the company of the Oppenheimers, who were equally impressed, more so in light of their interests in co-opting promising useful black leaders into their sphere of influence (Butler, 2019).

Shortly after, in 1982, Ramaphosa became a founding member of the National Union of Mineworkers (NUM), becoming a secretary general – *de facto* head of the union. As related in Chapter 5, the 1980s were a period of labour upheavals in the mining industry. Ramaphosa's rise to lead the unionisation of these labour concerns placed him at the forefront of political leadership at that time, especially as a tough negotiator with mining companies on labour matters. In 1983, the Oppenheimer-controlled Chamber of Mines cooperated with the changing labour landscape led by Ramaphosa by granting bargaining recognition to the National Union of Mineworkers. Upon the unbanning of the African National Congress (ANC) by the apartheid government in 1990, Ramaphosa became the new ANC Secretary General (Parker & Mhlanga, 2017). However, in a race to become deputy president to Nelson Mandela, Ramaphosa lost to Thabo Mbeki, a moment that saw Ramaphosa temporarily leaving politics for the private sector (Butler, 2019).

Recalling the story of Anglo in Chapter 5, the mid-1990s was the moment when Anglo was unbundling the original JCI company (or Johnnies) into platinum (Amplats), gold (JCI) and

non-mining industrial holding company (Johnnic). While the JCI deal with Mzi Khumalo was Anglo's first BEE deal *in mining*, its first empowerment deal was the transfer of Johnnic to a consortium led by Ramaphosa (McNeil, 1996). Johnnic was a diversified holding company giving the Ramaphosa consortium control over several entities including publishing, insurance, telecommunications, and property. Controlling stake was transferred to the consortium for R2,7 billion, 11 per cent below market price (McNeil, 1996; van Rensburg, 2017). [127]. The consortium was called the National Empowerment Consortium (NEC), which comprised mostly of individuals from Cosatu unions, and included New Africa Investments Limited (NAIL) (News24, 2015). NAIL was a flagship BEE company of prominent ANC-aligned black business people who were the first to benefit from a private sector-led BEE deal in the form of an empowerment transaction with Afrikaner capital, Sanlam (See more in Levy, et al., 2021). That the NEC consisted of black organised business and unionists gave the deal credibility, and gave Ramaphosa credibility as a leader capable of leading in the private sector (Wackernagel & Golding-Duffy, 1996; News24, 2015). By 1997/8, Johnnic had a total market capitalisation of R8.5 billion, with Ramaphosa as non-executive chairman, responsible for strategic direction and management of the board (McNeil, 1996). He became, as *The Economist* noted, "the new Rand Lord" (1997).

In February 1999, Ramaphosa stepped down from NAIL, taking up several director positions in companies including Anglo American, South African Breweries, Times Media Limited, Molope Group, and First National Bank. In parallel, however, Ramaphosa continued chairing Johnnic (majority owned by NAIL), but the entity struggled to find direction under Ramaphosa. The company slowly crumbled through continuous sales of its assets to "unlock value", eventually collapsing when the JSE pressured Johnnic to collapse the pyramid structure (News24, 2006). This progressive crumbling of Johnnic is cited as the first reason for Ramaphosa's gradual departure by taking up the aforementioned opportunities. The second speculative reason, according to Butler (2019), is that Ramaphosa had been forced out by board members purportedly aligned with Thabo Mbeki.[128] To this effect, Thabo Mbeki's office publicly issued a denial:

[127] This is how the deal was funded. After resigning from the ANC post, Ramaphosa took up a position as Deputy Executive Chairman of New Africa Investments Limited (NAIL), a leading, black-led consortium (explained in the paragraph). NAIL invested approximately R7 million to start up an investment banking company called Pleiade Investment Corporation, which was later named AMB Capital. AMB then acted as advisor to the transaction, raising R2.1 billion mainly from labour union pension funds (News24, 2015).
[128] In particular, Dikgang Moseneke and Zwelakhe Sisulu.

> The Deputy President has no personal or financial interest in the affairs of any private company, including NAIL, to determine the future of its directors – nor does the Deputy President have any interest in the personal fortunes of Mr Cyril Ramaphosa… The decision by Mr Ramaphosa to quit his post is an internal matter between NAIL directors and Mr Ramaphosa and they have nothing to do with the Deputy President" (Butler, 2019: 384).

Analytically, this moment highlights the dynamics of the relationship between empowerment deals and ANC factions, which were becoming increasingly visible during the Mbeki era. Butler observes that "many business people believe there is a broad correlation between internal ANC power and access to commercial opportunities… after 2007 Cyril increasingly had 'weight' in the organisation…His fight with Mbeki credentialised him in the view of the Polokwane [2007 ANC conference] crowd" (Butler, 2019: 445). This reading of Ramaphosa's political position in relation to a post-Mbeki moment potentially played a role in the entry of Ramaphosa in Lonmin in 2009. But before that apex narrative, a bridging narrative of how Ramaphosa formed his own company, Shanduka, firmly establishing him as one of the leading BEE empowerment companies, is necessary.

7.4.2. The formation of Shanduka Resources and its corporate strategy

In 1997, the Johannesburg Stock Exchange (JSE) was hit with the effects of the Asian financial crisis, leading to a stock market crash on the JSE. This financial crisis also wiped out several BEE deals, most of which had bought stocks using debt, and therefore relied on dividends from those stocks to repay the debt (Nxele, 2022). In response, black organised business formed the Black Economic Empowerment Commission (BEECom), seeking to formalise and expand the BEE project, starting with the mining sector (Nxele, 2022). This commission was led by Cyril Ramaphosa, culminating in the formation of the new mining legislation and the BEE legislation (Nxele, 2022). This development supported two of Ramaphosa's wishes. The first wish was to establish his own BEE company that could take advantage of the growing opportunities in the BEE market. The second wish was to get into mining, believing it was a lucrative industry (Butler, 2019). [129]

[129] Ramaphosa initially sought entry into mining through Anglo's JCI. He had ambitions to run a mining house. Thus, it was with JCI, rather than Johnnic, that he prepared himself when Anglo was unbundling. However, Anglo had determined to sell Johnnic first, and this created a dilemma for Ramaphosa, who eventually decided not to miss the Johnnic opportunity, yet hoped to be front-runner in the JCI deal. This never came to be (Butler, 2019).

To materialise his wishes, in 2001 Ramaphosa set up his personal business through which he could take advantage of the pipeline of BEE deals. He began trading as Shanduka (Venda for "change").[130] Shanduka soon built up a diverse portfolio of listed and unlisted assets, becoming essentially a financial investor (Masie, 2014). Shanduka's growth strategy was to engage in several deals, taking advantage of the empowerment discounts of these equity stakes. This strategy worked well for Ramaphosa, building a conglomerate-like company with several companies under Shanduka (See Table 68 in Appendix to Chapter 8). However, Shanduka's deals were seen as seeking benefits without adding value (Masie, 2014; Butler, 2019). There was no evidence of Shanduka taking on active operations, save for inheriting already established processes such as MacDonalds South Africa and Coca Cola South Africa packaging. Despite his substantial wealth, many people who closely observed Ramaphosa's business dealings in the 2000s believed that he was not a natural or enthusiastic businessman (Butler, 2019). Notwithstanding, Ramaphosa was more concerned with converting Shanduka into a mining focused investment company, an opportunity that continued to elude him until the mid-2000s, when he would partner with Glencore and Xstrata.

To get a chance in mining, Ramaphosa turned his focus to coal by registering Shanduka Coal, in preparation for a partnership with Swiss-based commodity trader, Glencore. Glencore was building a portfolio of coal assets in South Africa and had been working with Xstrata at least since early as 2002 on coal deals in South Africa (Aversano & Ritsatos, 2015). Glencore entered coal by purchasing Lonmin's coal assets in 2000. During that time, Glencore also began buying Xstrata, with the two companies cross-shareholding in South African coal assets (PriceWaterhouseCoopers, 2009). With the BEE requirements in play, Glencore picked Ramaphosa's Shanduka as its BEE partner.

The Glencore-Shanduka partnership became effective in 2005. Not long thereafter, the pair teamed up as investors in a controversial deal called the Optimum project, to supply coal to the state power authority, Eskom. That deal ended badly when the government blocked permits for the mine, forcing Glencore to sell the mine to the state capture associated Gupta family, who were business allies of President Jacob Zuma (Orderson, 2019).[131] According to Butler (2019), sceptics saw Shanduka Coal as merely a "front" for Glencore, while the international trading

[130] Shanduka was initially called Millennium Consolidated Investments (MCI).
[131] This empirical detail requires some background on state capture in South Africa during the presidential terms of President Jacob Zuma (2009-2018). A source that can be consulted is Chipkin et al., (2018).

company lacked an appealing corporate profile.[132] Commodity trading company Xstrata, which was swallowed up by Glencore in 2014, has been painted with a similar brush (Fletcher, 2012). By 2008, Xstrata owned 24.5% of Lonmin, cementing cross-shareholdings between Lonmin, Ramaphosa, and Glencore-Xstrata (Fletcher, 2012).

Overall, during the 2000s Ramaphosa benefitted tremendously from the developments of BEE. By the late-2000s, Ramaphosa sat on nearly 20 boards including Alexander Forbes, SABMiller, MTN, and Bidvest. As an E-firm, he was a potent partner in bringing legitimacy to I-firms. However, operationally, the Shanduka model was driven by deal originators, mostly with investment banking backgrounds, who would look for deals that could exploit empowerment discounts on share prices (Butler, 2019). Most of these broad-based deals were set up as preferential shares varying between three to eight per cent discount to listed share price values, and this allowed Ramaphosa to generate his substantial wealth (2016). This model of wealth accumulation, however, has scarcely led to the creation of a thriving, productive enterprise. Notwithstanding, the 2009/10 period culminated in an opportunity to perhaps translate Shanduka into a black platinum firm in Lonmin. How did such a model of wealth accumulation – a version of BEE-based accumulation – square with the opportunistic disposition of Lonmin? The following section tells the story as a final part of the chapter's narrative.

7.4.3. Ramaphosa's brief partnership with Lonmin

The collapse of the Incwala scheme and controlling share of Xstrata in Lonmin facilitated the entry of Ramaphosa as the new BEE partner in Lonmin. Already mentioned, Ramaphosa's entry was timely. With the end of the Mbeki era, Ramaphosa was well positioned in the new ANC factional shift – an anti-Mbeki shift. Moreover, Ramaphosa was deeply connected to the government, and to the National Union of Mineworkers, and enjoyed intimate knowledge of the dynamics of labour relations (Butler, 2019). The deal was generous: Ramaphosa only needed to pay 0.012 per cent cash, with the rest given as a loan by Lonmin and Xstrata to be

[132] Glencore's origins lay in the dealings of an oil and metals trader, Marc Rich, who was notorious for his role in apartheid-era sanctions-busting (Butler, 2019). Similar to Lonrho, Glencore is known for its ability to work in resource-rich countries that often do not enjoy stable government or the reliable application of the rule of law. Their profits often involve corruption. For example, in 2014, corruption investigator, *Global Witness*, issued a damning report on Glencore's corrupt dealings with Congolese President Joseph Kabila relation to the DRC's Katanga mine (Doherty, Blum & Zihlmann, 2017). In 2019, the company was the subject of an investigation by the US Department of Justice into Glencore's trading activities since 2007 in several places such as Nigeria, Venezuela, and the DRC, linked to the Paradise papers (McKay, 2019). It was found guilty in 2022 (Howard, 2022).

paid back by Lonmin generated profits.[133] All Ramaphosa needed to do was take on a non-executive directorship position, and chair Lonmin's transformation committee (Lonmin, 2010), without the baggage of joint-venture production expectations. This kind of deal was consistent with the Shanduka model. What would prove especially important to Lonmin during Ramaphosa's tenure is that as chair of the company's transformation committee, he was responsible for monitoring social development plans and mineworkers' welfare. As a director, he could be called upon to facilitate the solution of major political and labour problems, where the cooperation and intervention of government or labour unions were required (Butler, 2019).

Through Incwala, Ramaphosa was securing "quite a high-quality asset" at the time, and this appears to be a driving consideration. However, Butler (2019) reflects that Ramaphosa must have considered the wider political implications of a partnership with a company with Lonrho's reputation, for "…Ramaphosa must have known that he was buying into a volatile and politically exposed business" (Butler, 2019: 451). The entity was known for its long history of exploitation and political manipulation on the continent, and famous deal-making in resource-rich dictatorships through its director, Tiny Rowland. In addition, both Glencore and Xstrata had a similar historical reputation – a widely publicised reputation. In doing a deal with Lonmin, Ramaphosa was acquiring considerable historical and contemporary geopolitical baggage, and not merely a share of the company's dividends (Butler, 2019). Nevertheless, Ramaphosa was seemingly comfortable with such partners.

By 2012, Ramaphosa had moved decisively back into politics. The 2012 Marikana massacre complicated that move somewhat but did not derail it.[134]. He eventually disposed of Shanduka as part of his ascendency to the ANC presidency. The deal-level dynamics with Lonmin, especially in relation to investment, will be covered in the next chapter. As the final section of this chapter will summarise, his track record since the early 2000s provides ample evidence place his approach to business along the patient-predatory spectrum.

[133] Lonmin raised the funds through a share issue to which Xstrata was the major subscriber. As a further sweetener, Shanduka was contracted to provide training and welfare services to Lonmin in a multi-million-dollar deal (Butler, 2019).

[134] The Marikana massacre of 16 August 2012 happened in Lonmin's Marikana mine, where 34 mine workers were shot dead by the South African Police Service (Alexander, 2013). Cyril Ramaphosa, newly installed Deputy President of the ANC and South Africa, and still acting as Lonmin's BEE partner, was implicated negatively through his direct involvement in the decisions taken to deal with the striking workers (Butler 2019).

7.5. Conclusion. Characterising Lonmin and Shanduka along the capital spectrum

Instead of bequeathing the lasting monument of a resilient multinational corporation, Rowland's legacy is his image as a rebel tycoon, charming dictators and chastising regulators, with the final account of a dream built upon sand and secrets still to be revealed (Bower, 1993).

The purpose of this chapter is to trace the corporate strategy of Lonrho (Lonmin) and Shanduka (Ramaphosa) to place the I-firm and the E-partner along the patient-predatory spectrum. Consistent with the analytic narrative methodology, the research compiled and distilled the story of the company using several sources dating as far back as the 1960s, to emerge with an analytic narrative of Lonrho in action, and later, of Shanduka. The other aim of the chapter was to study Lonmin's approach to BEE, with a particular focus on Incwala and Shanduka. What emerges is material that enables a provisional placing of Lonmin and Ramaphosa along the capital spectrum. Chapter 8 explores whether this characterisation holds empirically in terms of fixed investment performance.

7.5.1. How does Lonrho/Lonmin benchmark against the capital spectrum?

Studying the workings of Lonrho's corporate strategy illuminates the logic behind its actions during rapid political changes in Africa, and why the company thrived through losses and threats. Equally important is how the company managed to secure friendships with so many ruling political elites throughout Africa, particularly by exploiting local political incentives and information asymmetries.

The strategy of business as politics was a trumping strategy for Lonrho; not only in institutionally weak polities, but in arguably more institutionally developed South Africa. The company's strategy seemed to be based on the hypothesis that rules are there to be manipulated or managed via bad deals. Armed with this "hypothesis", the chapter found that Lonrho applied itself both politically and manipulatively to South Africa's rule-based BEE policy, designing the Incwala shell so that the latter could not, by design, become a self-standing productive mining company. This was an effective model to manage expropriation risk, for should Lonmin fall, Incwala would go down with it. Theoretically, therefore, any BEE partner would have wanted to ensure the success of Lonmin.

However, Lonmin's Incwala model that was premised on passive minority shareholders produced no real transformation that builds black operating mining companies. Lonmin's model was consistent with its parent's, Lonrho. The chapter found that Lonrho focused on

front-loaded, hollow deals that left only a few individuals financially (not productively) wealthier. The case shows how foreign capital can combine with domestic politics and material interests extremely effectively, but in this case with deeply problematic implications.

Table 20 - INSTRUMENT 1: Lonmin and Shanduka score on the capital spectrum

	Company types					
Attributes	Patient/Producer company *(farsighted)** *(1)*	Investment-holding company (2)	Opportunistic *(3)*	Predatory *(4)*	Lonmin (5)	Shanduka (6)
Incentives or behaviour						
Focus is on fixed investment, production, and skills	+++	++	+	0	2	1
Patient capital invests in exploration and mine development	+++	++	+	0	1	0
Patient capital creates a pipeline of fixed investment projects	+++	++	+	0	0	1
Patient capital seeks for patient JV partners	+++	++	+	0	1	1
Patient capital seeks long-term production-based deals with partners	+++	++	+	0	0	1
Patient capital deploys its own balance sheet capital to domestic investment	+++	++	+	0	1	1
Patient capital, or its corporate strategy, sits above political factions	+++	++	+	0	1	1
Majority of revenue comes from sales of produced goods and services	+++	++	+	0	3	1
Maximum score	24	16	8	0	9	7

Table 20 (Instrument 1) above is the capital spectrum presented in Chapter 2. Taking a conservative grading of Lonmin in column 5, Lonmin scores 9 out of 24 points, placing it at the opportunistic end of the spectrum. The story of Lonrho and of Lonmin, and importantly the corporate strategy through which the I-firm approached business and BEE provides some basis to place the company on the spectrum. However, an important test for the purpose of this research is the degree to which Lonmin translates itself into a capital-investing company, and whether its asset level deals perhaps supported the emergence of transformative productive mining companies. The next chapter will delve into the deal level (beyond the Incwala high level design) to evaluate the outcomes empirically.

7.5.2. How does Ramaphosa benchmark against the capital spectrum?

Reflecting on Ramaphosa's game over time, his dealings typify the model of BEE consisting of transfers of equity from white to black politically connected partners as an end in itself rather than as a basis for transformative industrial growth. As shown by Table 68 in the Appendix to

Chapter 7, the series of companies registered under Shanduka are now history, an undesirable outcome in terms of national development policy. In his career, Ramaphosa enjoys a far better reputation as a politician, but has often been cast with the group of failed, opportunistic BEE deals.

Butler (2019) collected some accounts from those close to Ramaphosa, who shed light on Ramaphosa in business. According to Butler, Phuthuma Nhleko, Ramaphosa's close colleague of two decades, believes that Ramaphosa "gave the *appearance* of a passion for business" (p. 393). This view was held by former Shanduka CEO Ndoda Madalane, for whom Ramaphosa is not a businessman but a politician. Michael Spicer, former Anglo American executive director is noted in Butler as saying "Cyril's first love is politics. He is not terribly interested in business… For him it is just a convenient waystation. It is just a vehicle for the necessary accumulation of wealth" (p. 393). Ramaphosa's business partner in NAIL, Nthato Motlana, contrasted Ramaphosa's performance with Patrice Motsepe, pioneer of successful black business. "His [Motsepe's] life is business. He went to the mining houses and told them he wanted to work their redundant mines. Then he went out and talked to the engineers and the workers, face to face, and he explained to them that they could all make money together… That is a real businessman'" (p. 391). Spicer also observed that "Shanduka was 'not an ARM [Motsepe's African Rainbow Minerals]'. Cyril was still 'not functional in the global big game'. He combined personal charm and insight to make good deals, but he remained 'in the middle spectrum of entrepreneurs'" (p. 444). This collation of views corroborates the narrative on Ramaphosa in this chapter. In terms of the capital spectrum in Table 20, Ramaphosa's Shanduka scores 7 out of 24 points, placing the E-firm on the opportunistic side of the spectrum.

The case study of Lonmin and Shanduka has contributed to the exploration of the hypothesis by providing a comparative case to the Amplats/ARM case. However, the question of how Lonmin and Shanduka/Incwala perform in terms of their deals and investment remains. This is the micro and nano level question, documented in the next chapter.

CHAPTER 8 (Micro and nano level). Lonmin. Tracing two-level deals, and subsequent investments and transformation

Abstract

This chapter studies the deals and capital investment outcomes of opportunistic capital. The case study is Lonmin, a company whose corporate strategy thrives on collusive deals and isomorphism. Using data collected from annual reports, archived company news, announcements, and circulars from McGregorBFA, and other journalism sources, the chapter traces Lonmin's deals with government and its BEE partners in order to investigate the extent to which these deals are compatible with investment and transformation. The chapter finds a clear case of capital whose corporate strategy is unable to stabilise BEE deals. Specifically, the IFC World Bank poster example of good transformation in mining, the Incwala BEE deal crafted by Lonmin, demonstrates a clear case of circumventing the "spirit" of productive transformation. The overall finding is that Lonmin's opportunism crafted deals that could not deliver – partners that could not deliver. This created missed investment opportunities.

Résumé

Ce chapitre étudie les résultats des transactions et des investissements en capital du capital opportuniste. L'étude de cas est celle de Lonmin, une entreprise dont la stratégie d'entreprise se nourrit d'accords collusoires et d'isomorphisme. À l'aide de données collectées dans les rapports annuels, les actualités archivées de l'entreprise, les annonces et les circulaires de McGregorBFA et d'autres sources journalistiques, le chapitre retrace les accords de Lonmin avec le gouvernement et ses partenaires BEE afin d'étudier dans quelle mesure ces accords sont compatibles avec l'investissement et la transformation. Le chapitre trouve un cas clair de capital dont la stratégie d'entreprise est incapable de stabiliser les accords BEE. Plus précisément, l'exemple affiché par la SFI et la Banque mondiale d'une bonne transformation dans le secteur minier, l'accord BEE d'Incwala élaboré par Lonmin, montre clairement que l'"esprit" de la transformation productive est contourné. La conclusion générale est que l'opportunisme de Lonmin a donné naissance à des accords qui n'ont pas pu aboutir - et à des partenaires qui n'ont pas pu aboutir. Cela a créé des opportunités d'investissement manquées.

8.1. Introduction

With reference to Amplats as a patient I-firm, Lonmin faced the same question of how to keep predation at bay. How did Lonmin mitigate expropriation risk, and to what extent did this mitigation support sustained investment in platinum? The argument advanced here is that deals will vary in their ability to address this question, and that this is systematically explained by the type of I-firm and its strategy, and the type of E-firms which are engaged.

This chapter empirically explores a case of I-firm opportunistic capital, and its BEE deals and partners in platinum. The proposition is that Lonmin closely represents an opportunistic incumbent and will play the game to maximise opportunism over sustained investments. In other words, in the story of building racially transforming, investment-led growth, Lonmin might represent a failure of national development policy – a failure to invest in and develop new mines.

The chapter is organised in two parts, the corporate-level deal, and the asset-level deal. The former explores how Lonmin engaged with the political class and government, evaluating the contents of the engagement and the investment implications drawing directly from this engagement. This part will focus on reinterpreting the political engagement of Lonmin seen in Chapter 7 as a corporate-political deal. Thereafter, the deal will be evaluated in terms of the extent to which it supported investment.

As asserted before, the corporate-level deal is incomplete without the nano level deals. The nano evaluates the mine-level partnerships and deals, and the associated subsequent investment outcomes. The variation, within Lonmin, lies at the partnership level, the E-firms and where they fall on the capital spectrum. The durability of the nano-level partnerships is important because the macro-meso level politics (e.g., ANC factions) can shift and change.

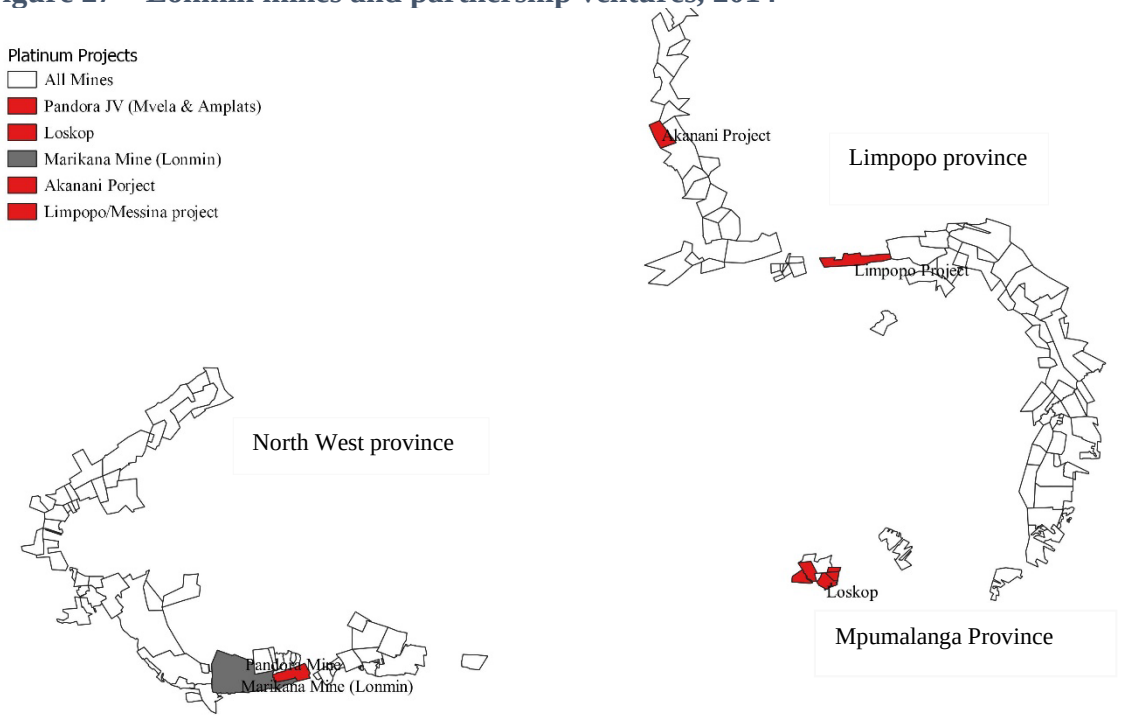
The hypothesis of good deals as good corporate-political deals and good asset level partnerships requires that the research cast a wide net to find out which partners Lonmin sought to engage, and specifically trace Incwala's longer-term trajectory. This provides empirical insight into the kind of partners in which Lonmin had an interest. The variation in the hypothesis includes deals that did not take off. The widely cast net returned two corporate-political level deals, and four asset level deals over time. The corporate levels consist of the Rowland-ANC deal of the early 1990s, and the Incwala deal which mainly served to manage Lonmin-wide expropriation risk. The four asset level deals consist of the Akanani project, the

Pandora project, the Messina/Limpopo mine deal, and the Loskop project. All these projects/deals will be studied in the sections that follow.

8.1. Lonmin Mines

Lonmin was, until its takeover in 2019, a London-based company with a subsidiary in South Africa called Lonmin Platinum (Lonplats), created out of the unbundling of Lonrho Plc (see Chapter 7). Lonmin's (or Lonplats') assets consist of Western Platinum and Eastern Platinum. Together, these own and operate three mining units, a smelter complex, a base metal refinery and a precious metal refinery. Collectively they are known as the "Marikana operations".[135] They constituted 95 per cent of Lonmin's production in 2006 (Lonmin, 2006a).[136]

Figure 27 – Lonmin mines and partnership ventures, 2014



Source: Author, using QGIS software. Data from (Zientek et al., 2014).

Figure 27 shows the suite of Lonmin's mines and partnership ventures. The Marikana complex is displayed in grey, while the partnership ventures are displayed in red (and labelled in the legend). The main basis of Lonmin's existence is the Marikana mine, while the story of the other leased mineral areas represents missed opportunities of investment. It will be shown and

[135] Located in the Marikana village in Brits in the North West province. This is the location of the Marikana massacre of 2012.
[136] Annual production of 1.2 million ounces of platinum group metals is extracted from the Marikana mining lease area which covers a strike length of some 27 kilometres of the Merensky and UG2 reefs.

argued below that these missed opportunities are a systematic result of the type of I-firm Lonmin was, and to some degree, the type of BEE partners with which Lonmin partnered.

8.2. Theoretical expectations: Lonmin as impatient and outcomes

The chapter is grounded on the part finding from Chapter 7 that Lonmin was a predatory I-firm. The predatory-leaning corporate-political levels deals are expected to generate unstable deals, resulting in low investment and poor transformation outcomes. In terms of the firm/asset level deals, the micro-level theoretical typology (Typology B) generated possible outcomes based on the types of BEE partnerships with which an opportunistic I-firm engages. Figure 28 below reproduces Typology B.

Figure 28 – TYPOLOGY B: Theoretical investment outcomes in I-predatory world

		Theoretical investment outcomes in I-predatory world	
		Type of BEE Partner	
		E-patient partner	E-opportunistic partner
Type of deal	Production deal	Empirically unlikely (I-Impatient company)	Low (subsequent) Investment
	Passive equity deal	Moderate (subsequent) investment	Low (subsequent) investment or deal collapse

Source: Author

Because Lonmin is predatory, the expectation is that Lonmin will have low to moderate subsequent investment across its asset level deals, generally. This will partly be the outcome of bad deals with opportunistic partners: (i) either Lonmin cannot stabilise BEE partners, or (ii) the I-firm cannot figure out the deals environment, or (iii) the I-firm dealt with partners that could not deliver credible commitment for Lonmin.

8.3. The Corporate-political deal

This section picks up from Chapter 7 to examine, describe and track Lonmin's corporate level deal, and evaluate its success in relation to investment and transformation. If evaluating the question, how did Lonmin achieve its legitimacy in democratic South Africa and how did it protect its main mines – the Marikana complex – then the answer is that the early relationship with Rowland was important in tying Lonmin with the early 1990s ANC, and later, the Incwala 'fronting' deal was the main legitimising deal. Therefore, the Incwala creation is viewed as a

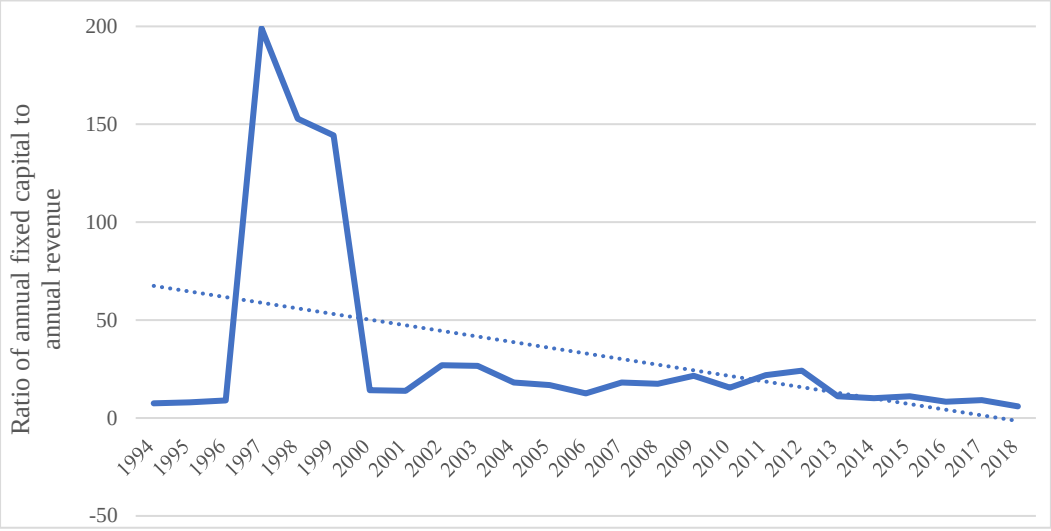
corporate-political level deal. The two deals are revisited below for the purpose of evaluating their role in Lonmin's capital investment performance.

1990-2013. The Rowland deal. Incwala as the next corporate-political level deal, and investment outcomes

Chapter 7 detailed the "cooperation" between Rowland and the leadership of the ANC in exile between 1990 and 1998 through two moves that speak to the former's astuteness and the latter's weakness. First was Lonrho funding for the ANC to relocate its offices from Lusaka to Johannesburg (*EIR*, 1993: 133). Second, in 1993, was the offer to fund the creation of a pro-ANC newspaper in time for the pending elections (Karl Maier, 1993).

Chapter 7 also noted that in 1987 , Lonrho started developing its Marikana mining complex in the North West in 1987. In 1993, during the Lonrho-sponsored launch of the ANC newspaper, Lonrho announced plans to develop its mining complex, then valued at £30 million, completing these in 1999. This substantial investment established Lonmin (and kept it) as South Africa's third largest platinum producer. Figure 29 shows Lonmin's large initial capital investment, relative to its revenue, and that subsequent investment – the question of sustained future investments for continuous growth and development – remained flat thereafter.

Figure 29 – Lonmin ratio of annual fixed capital to annual revenue, 1994-2018



Source: Author. Data from Lonmin annual reports.

From a BEE perspective, while other mining houses undertook proactive empowerment transactions, it was business as usual for Lonrho, with strong ties in the Mandela/Mbeki led

settlement. Given its newly found complex in the North West, Lonmin had done enough to sink substantial investment on the back of close ties with the ANC.

As related in the preceding chapter, 1998 marked an important shift in the BEE ad hoc deals game. While all major mining companies proactively explored BEE partnerships to secure mineral rights, Lonmin waited five full years. In its dealings with shareholders, Lonmin either inadvertently misunderstood the imminent law or deliberately misinterpreted it. It was not until late 2003, that Lonmin accepted that the Rowland relationship, with its benefits, was history.

Readers will also recall that in late 2003, Lonmin split itself into Lonmin (the I-firm), one quarter of which was named Incwala, supposedly the BEE partner, that it "bought' a substantial share of Incwala, and co-opted Mbeki-aligned BEE beneficiaries to conform with the letter of the law, reprising this performance with Shanduka, which replaced the first round of Incwala partners. Chapter 7 also documented how this BEE partnership strategy kept Lonmin close to the state, and how this relationship became unstable from 2012, with Ramaphosa distancing himself from Lonmin.

During this period of the Incwala deal, Figure 29 shows that Lonmin's subsequent investment remained flat, with no new expansion capital investment sunk into the company. Chapter 11 – the discussion of the case studies – compares Lonmin's investment performance (relative to its size), with Amplats' performance. Lonmin's subsequent investment remained flat partly because the Incwala shell and the BEE partners could not stabilise Incwala, bring in investment, or bring in other BEE deals.

What was the fate of Incwala post 2013? Could Lonmin have evolved by learning from the earlier rounds of South Africa's empowerment deals? The following outlines the attempts at renewal pursued by Lonmin, and whether these ignited a different investment trajectory.

2014-onward. Confusion, attempts at more deals, and eventual collapse of Lonmin

By 2014, Lonmin faced three critical problems that it needed to resolve to survive. First, it had to rebuild the Incwala BEE credentials. Lonmin had remained at its 2004 level of empowerment deals. By 2014, peers such as Amplats and Implats had enduring BEE partnerships that meting mining policy targets. According to the hypothesis being explored, unlike Amplats, Lonmin lacked the foresight to combine their political-legitimating deals with cultivating reliable E-firm partners who were the real anchors of sustainable BEE. Second, it needed to raise funds

to keep afloat by presenting a demonstrable investment pipeline for growth. Third, it needed to restore its public image and political legitimacy.

To address the first problem of BEE credentials and save its mining rights, in 2014 Lonmin turned to the Bapo-Ba-Mogale mining communities. [137] Lonmin concluded a BEE deal with the leadership:

> [Lonmin] entered into binding agreements with the Bapo ba Mogale … in relation to a series of transactions which are expected to enable Lonmin to meet its … BEE targets. Lonmin also stated its intention to implement an Employee Share Ownership Plan (ESOP) and a Community Share Ownership Trust (CSOT) …All three transactions will collectively provide the additional 8% equity empowerment which Lonmin requires to achieve the 26% effective BEE equity ownership target by 31 December 2014 (Lonmin, 2014a: 43).

Through a royalty equity swap, and the Mogale selling their 7.5 per cent of the Pandora joint venture (more below) to Lonmin, the Mogale received 2.25 per cent of Lonmin. The community took the deal to court, arguing that there was a lack of transparency and community engagement (Klein, 2015b). The poor quality of the deal is covered by Boyle (2015). This is one of the examples of how the rule of law in South Africa intervenes in disputed BEE deals, mostly involving communities. Section D documents more case studies of such BEE deals, and the rule of law as an enforcer of asset level rights.

To address the second problem of being cash strapped, in 2015, Lonmin went "cap in hand to beg for a $400 million bailout from shareholders in order to keep its struggling operations afloat…" (Klein, 2015). In November 2015, the company announced it would "write down the value of its assets by more than half by taking an impairment of as much as $2.05 billion. The current market value is $210 million, down from $13 billion in 2007" (Van Vuuren, 2015). [138] The rights issue did not raise enough money from the shareholders. Having not raised enough, the Public Investment Corporation (PIC) "had to mop up unwanted new shares" (McKay, 2016: 15). At the time, the PIC was holding seven per cent of Lonmin (Klein, 2015c).

[137] The Mogale community had rejected the Ramaphosa deal of 2010, arguing that the community should be offered the Incwala stake, given their pre-emptive rights to buy out distressed shareholders. "But Hugh Eiser, legal representative for the Bapo ba Mogale, said this right was ignored by Lonmin, which favoured the politically connected Shanduka Resources" *(Mail & Guardian*, 2012). In response to why Lonmin had not offered the loan to the Mogale community, Lonmin said it needed a partner that could add value.
[138] These numbers summarise the drastic loss of value Lonmin had suffered following the Marikana tragedy.

The third problem concerned Lonmin signalling that it was cleaning up its act, restructuring and buying some assets that would extend its life of mine. Lonmin chose the Pandora asset for this purpose, claiming it could make something of the asset that had shut down in 2013. (See Section 8.7. below). In November 2016, Lonmin bought out Amplats from Pandora to demonstrate it could implement its plan of renewal and growth (Creamer, 2016).

Despite the efforts at recovery and investments to kick start Lonmin, the company could not recover. In 2017, it was announced that Sibanye Stillwater, a fast rising platinum producer, was buying Lonmin entirely (Zama, 2019). The deal was closed in May 2019.[139] Stillwater's purchase included taking Incwala along with it. Shanduka was subsequently sold by Ramaphosa to Phembani Group, a company led by Phuthuma Nhleko, former CEO of telecoms company, MTN (Fin24, 2014). Stillwater kept Phembani and the PIC as BEE partners (McKay, 2021a).

Conclusion on the corporal-political level deal

To evaluate this corporate level deal, this section deploys Instrument 2, the tool developed in Chapter 2 to heuristically evaluate I-firms' corporate level deals. Lonmin scores 2 out of 9 on the transformative deal schema, and -6 out of -9 on the collusive deal schema, giving a total score of -4.

Figure 30 – INSTRUMENT 2: The corporate-political deal spectrum (Lonmin)

	Transformative deal	Score range (0-3)	Collusive deal	Score range (-3-0)	No deal	Full score	Lonmin score
i	Unlocking/unbundling assets for resourcing BEE	0	Closed party-funding focused deals	-2	No deal	0	-2
ii	Commitment to continuing investment	1	Rent-sharing arrangements, no commitment to investment	-2	No deal	0	-1
iii	Commitment to racially transforming company	1	Isomorphism tactics rather than transformation	-2	No deal	0	-1
	Total score	2		-6		0	-4

Source: Author

Lonmin did have a strategy of applying itself politically through a legitimating corporate-level deal, but this was mainly the predatory side of engagement, focusing largely on political party relationships and isomorphism without large subsequent investment (relative to Lonmin's size), and without tangible transformation outcomes, unlike Amplats' deal. In terms of the y variables – investment and transformation – Lonmin's corporate level deal did not support

[139] Sibanye Stillwater also purchased Aquarius, and several assets from Amplats.

investment, but it did support minimum maintenance of investment at the aggregate I-firm level at the Marikana complex. Figure 29, showing the ratio of Lonmin's fixed investment to its revenue, demonstrates that after developing the Marikana complex in the 1990s (one large investment), Lonmin's capital expenditure flattened, signalling a focus on sweating the assets. In other words, the company's revenue was not translating back into capital investment.

This result remains robust even when using operating profit as the denominator or year on year changes in capital investment (See Figure 43 and Figure 42 in Chapter 11). To support this finding, the company's annual reports did not document any expansion plans at the Marikana complex, but rather documented replacement expenditure, such as ageing shafts. Therefore, the corporate level deal did not support sustained subsequent investment. In addition, the deal did not support the emergence of a productive BEE partnership or company. This is consistent with the meso-micro level theoretical predictions of outcomes consistent with collusive and isomorphic corporate level deals. However, this is only part of the result. Section 8.4 will evaluate Lonmin's deals at the asset level to explore possible variation at that level in relation to the variables of interest.

8.4. Summary of Asset level deals and investment outcomes

This subsection introduces Lonmin's asset level deals through a summary of findings by rating investments into tiers, using Instrument 3 (firm/asset level deal success spectrum) developed in Chapter 2.

Table 21 – Summary of Lonmin's asset level deals and investment outcomes

Year of deal	Asset	Black Partner	Details of plans	Outcome in 2018
2000	Pandora	Mvelaphanda Bapo Ba Mogale community	The Pandora project was meant to be finished by 2007 and add to Lonmin's target of 2 million oz of platinum group metals by 2007.	**Fourth Three, z=2, t=0** Unsuccessful. Still to be developed
2003	Loskop projects	Boynton (with Bakgatla)	This was a joint venture with Boynton (BEE) to develop the Loskop project (Lonmin, 2003)	**Fourth Tier, z=1, t=0** Unsuccessful, not developed
2005	Messina mine	Incwala (Round One), Incwala/Shanduka (round two)	The Messina mine was acquired in June/July 2005. The acquisition was made for a total purchase price of $192 million (Lonmin, 2005a: 2). The deal was a "partnership" between Incwala and Lonmin, meant to be Lonmin's expansion project.	**Fourth Tier, z=1, t=0** Unsuccessful, mothballed
December 2006 to February 2007	AfriOre Limited/Akanani project	Mvelaphanda, Incwala	Lonmin bought 100 per cent of AfriOre Limited, thus acquiring its primary asset, Akanani project located in Limpopo province. The consideration for that company was $413 million. Lonmin took 74 per cent, while Incwala to 26 per cent "after paying…R800-million for it…with the intention of	**Fourth Tier, z=2, t=0** Unsuccessful, not developed

			becoming an operational miner and not a passive portfolio investor" (Creamer, 2011).	

Source: Compiled by author.

Table 21 summarises the extent to which Lonmin's asset level deals resulted in investment and transformation. All four deals did not sink the intended investment between the time the deals were made and 2018. The Pandora deal is a third tier investment, with one round of low investment, with the partnership eventually collapsing. The Loskop, Messina, and Akanani assets are all fourth-tier, that were not followed up with capital investment. Consistent with Typology B, the combination of an opportunistic I-firm with an opportunistic BEE partner or generally unstable deals results in low subsequent investment. The rest of the chapter documents each of these deals.

8.5. Akanani joint venture with Incwala

"*Lonmin has an established greenfield growth opportunity at Akanani*" (Lonmin, 2014a: 31)

Summary of the Akanani deal

The Akanani deal started in 2006 between Lonmin and Incwala and was planned to be a greenfield opportunity that never materialised because both objectives failed. First, Akanani was meant to eventually double Lonmin's platinum output, but the mine never took off (Bowman, 2016). Second, the deal should have turned Incwala into a platinum-producing E-firm, but the deal left the BEE partners heavily in debt. The Incwala partners had to raise substantial debt to purchase their 26 per cent stake in the joint venture, guaranteed by Lonmin. This significantly contributed to the fall of these partners (or Round One Incwala) in 2009. The rest of this section tracks the deal from its origin to its specific outcomes.

Tracing the Akanani deal

In 2005, a junior mining company called AfriOre secured gold and platinum exploration projects in South Africa, including the Akanani project. [140] AfriOre owned 74 per cent of the project, while 26 per cent of Akanani belonged to a BEE group consisting of several investors (Fin24, 2006a). [141] In 2006, Lonmin bought 100 per cent of AfriOre, thus acquiring 74 per cent of its primary asset, Akanani project located in Limpopo, for $441 million (Fin24, 2006b). The remaining 26 per cent of Akanani had to be separately bought from AfriOre's BEE partner (Fin24, 2006a). The portion was bought by Incwala Resources, "after paying the previous BEE partner R800 million for it…with the intention of becoming an operational miner and not a passive portfolio investor" (Creamer, 2011). To purchase its share, "Incwala announced it…had raised R900 million from local and international lenders to refinance the debt and redeem bridge financing it incurred in buying a stake in … Lonmin's Akanani operation" (Hill, 2008). The Incwala partners were thus highly indebted after this deal, requiring debt refinancing shortly thereafter.

[140] AfriOre was a Virgin Islands domiciled junior (Shelley, 2006) listed on both the Toronto Stock Exchange and the AIM of the London Stock Exchange (Matrix, 2006).
[141] The investors are not specified, except one group called Catalyst. In the same year, the company concluded a deal with Ramaphosa's Shanduka on a gold project to explore undiscovered goldfields in an extension of the Witwatersrand basin, Johannesburg. Shanduka would act as a BEE partner *(Engineering News*, 2005b; Davenport, 2006; Dladla, 2006).

Lonmin planned to develop a low cost, fully mechanised mine (Webb, 2006b). Initial mine development would start by producing around 250 000 oz of platinum, and an additional 250 000 oz per year of other platinum group metals. Attributable capital expenditure for mine, concentrator and infrastructure development was estimated at between $600 million and $700 million (Webb, 2006b). Significantly, a serious first step to becoming operational is committing a budget for capital expenditure, yet Lonmin did not report any budget for project development over a set number of years, despite estimating the development cost.

In June 2006, Akanani was awarded a new order exploration licence, giving the project a firm footing in terms of the security of lease rights (Webb, 2006b). In 2007, Lonmin reported that "drilling at Akanani continues to confirm potential of the project" together with its "anticipation" that the Akanani deposit would be developed into a low cost, fully mechanised mine (Lonmin, 2007: 6). In the same year, Incwala told *Mining Weekly* that they were exploring pool-and-share possibilities with Amplats (Creamer, 2007b). Therefore, the deal appeared to have made some progress during its first year.

In 2007, Incwala announced that they would be jointly operating the Akanani mine with Lonmin, converting the Incwala entity from a Lonmin investment holding company to an operating company. As such, Incwala announced that it was "recruiting personnel at 'very senior' management level as well as personnel for an operational team at Akanani" (Creamer, 2007b). Once again, from the media statements, the deal looked intact, while Incwala appeared to be driving the process. That same year the World Bank IFC recognised Lonmin for its Incwala transformative deal.

However, by 2009, there had been little progress from an investment perspective. Instead, the Incwala partners crumbled under the weight of the debt incurred buying this project. The Akanani project was placed on hold, with the CEO of Lonmin, Ian Farmer, noting in the company's annual report that Akanani was being treated as a *longer* term growth project (Lonmin, 2009: 9). In 2010, Lonmin reported that it would only be turning to Akanani in 2011 to develop the growth opportunity (Lonmin, 2010: 6). With Ramaphosa/Shanduka effectively taking 26 per cent of Akanani, the expectation was that Ramaphosa would play a central active role in getting the project going, as his first step towards becoming a platinum mining operator. In 2011, Lonmin reported that "Shanduka is carrying out a study into reopening and developing the mine which was placed on care and maintenance in 2009" (Lonmin, 2011: 15). In effect, Shanduka had picked up where the first round of Incwala partners left off.

In 2011, Lonmin reported that Akanani was undergoing an evaluation process (Lonmin, 2011: 5), emphasising that the project was a longer term prospect (Lonmin, 2011: 10). “Exploration and studies continue to develop a viable operation on this project...” (Lonmin, 2011: 15). In 2012, Lonmin reaffirmed its strategy of developing Akanani as a viable operation (Lonmin, 2012: 17). It repeated the same words in 2013 and 2014 (Lonmin, 2013: 9, 2014: 15). However, even at this point its annual reports failed to report a budget under its capital expenditure section.

In 2014, ahead of the mining law 26 per cent BEE target deadline, Lonmin presented Akanani as a project controlled by Shanduka through Incwala, even though Lonmin retained 74 per cent of the asset (Lonmin, 2014: 60). By 2018, there had been no change in the operational status, no capital expenditure and no production delivered by the project.

Conclusion. How does the deal fare in light of the hypothesis?

Lonmin’s opportunistic nature and inherent short-sightedness limited the possibility of high sustained investment. However, it could be argued that its BEE partners could not deliver enough growth opportunity or operational aspiration. What is clear, however, is that the Incwala model was not designed to become a self-standing company: it was and remained an arm of Lonmin. Lonmin could have led by sinking investment in the Akanani project as the principal owner, but from the hypothesis perspective this was unlikely. Lonmin thrived on managing BEE rules, including inviting BEE partners that would protect its status quo assets. These are not partners Lonmin expected would be farsighted investors who would want to truly become operators. It is not that the BEE partners could not become operators, but rather that Lonmin chose partners who would play no role beyond rent-sharing and protecting the company. Typology B expects that a combination of opportunistic I-firm and E-firm results either in low investment or deal collapse.

Table 22 – Intended versus actual capital investment expenditure on the Akanani project

Asset	Intended/announced investment (+year)	Actual investment 2006-2008	Actual Investment 2009-2013	Actual Investment 2014-2018	Total
Akanani	2006 Mine development cost: $600-million and $700-million (Webb, 2006b)	$0	$0	$0	c.$0
Total	Underinvested asset. Failed deal. **Fourth Tier deal.**				

Source: Compiled by author using Lonmin's annual reports (2006-2018) and triangulating with market announcements (SENS) and media reports.

Table 22 summarises the tracking of fixed investment sunk in the Akanani project. The outcome of this deal, a fourth-tier investment, essentially means that where there is a bad partnership, the deal will not be stable enough to materialise into investment. As such, the Akanani deal was a lost investment opportunity for South Africa during the 2000s commodity price boom.

8.6. The Messina mine

Summary

In 2000 a Canadian junior diamond mining company, Southern Era, bought the Messina platinum mine was owned by a Canadian junior diamond mining company, SouthernEra, which it had bought in (Botha, 2002; Le Roux, 2004). Lonmin acquired the operation from Southern Platinum in 2005 as a brownfield investment opportunity (Bigala, 2012). Purchasing the Messina mine was grounded by the deal between Lonmin and Incwala. However, beyond one round of low investment, the asset did not receive subsequent investment, remaining mothballed.

2005-2010 period

In 2004, mining media reported that SouthernEra was reorganising its assets portfolio, including potentially disposing of its platinum asset, the Messina mine, which was reported to have a production growth potential of 300 per cent between 2003 and 2006 (News24, 2004b). In April 2005, Lonmin – and Incwala as BEE partner – announced its move to acquire the Messina mine (Guha, 2005). The transaction was completed in September 2005 for R486 million (*Mining Weekly*, 2005). Lonmin acquired the asset to drive its production to around one million ounces of platinum in 2006 (Lonmin, 2006b). In its 2005 annual report, Lonmin noted that the Messina asset was identified as a high quality asset that could be developed with

Lonmin's technical and operational capabilities (Lonmin, 2005b). In the same year, the mine immediately began production, while Lonmin reported that it had begun the process of reengineering the mine to allow for full mechanisation to reduce costs (Mining Weekly, 2005). [142] Therefore, Lonmin had bought a good brownfield asset and had major plans requiring substantial capital investment on the mine.

In 2008, however, Lonmin placed the mine on care and maintenance, reporting constrained production at the mine due to "lack of ore reserve development" (Lonmin, 2008a: 9). The company hinted at selling the mine, saying that "[w]e believe the mine is uneconomic and intend to start discussions with the workforce and unions regarding the future of the operation" (Lonmin, 2008a: 9). The suggestion to sell failed, for unstated reasons, but perhaps partly owing to the global financial crisis. In 2009, Lonmin's CEO Ian Farmer described Messina as a longer term growth project (Lonmin, 2009: 9). In 2010, Lonmin reported that it would be turning to Messina in 2011 as a growth opportunity (Lonmin, 2010: 6).

2011-2012. Big plans with Ramaphosa. Getting Shanduka hands on

In 2011, Lonmin announced an agreement with Shanduka to explore the feasibility of managing and operating the Limpopo mine, in addition to the Akanani mine (Lonmin, 2011: 5). The agreement was the same as with the previous Incwala partners: Shanduka was to take care of the mines and projects already acquired by Lonmin, turning them into profitable mines, while Lonmin's management would focus on the main asset, the Marikana complex (Lonmin, 2011: 10). To ensure that Lonmin complied with the ownership target of 26 per cent owned by BEE, the plan was that Shanduka would take on a higher ownership stake in the Messina mine, a plan that Lonmin shared with the DMR (Lonmin, 2011: 11).

> At the end of the year, we reached an agreement with Shanduka on Limpopo [Messina]. The proposed transaction gives Shanduka the opportunity to gain a controlling equity interest in Limpopo and become a PGM mining and operating company, in line with DMR objectives. Ultimately, it gives Shanduka the opportunity to manage and operate the Limpopo [Messina] division…[this] creates the potential opportunity for Shanduka to become a Black Economic Empowerment (BEE) PGM mining and operating company, in line with the DMR's empowerment objectives (Lonmin, 2011: 11, 19).

[142] In 15 weeks from the date of purchasing the mine (15 June 2005), Limpopo produced 214,000 tonnes (11,524 ounces of platinum and 25,741 ounces of platinum group metals) (Lonmin AR 2005: 11).

The agreement also relied on Shanduka raising and contributing R1.1 billion in funding towards the ramp up and development of the operations. Shanduka was also entitled to acquire control and operational management of the operating entity (Lonmin, 2011: 29). During this time, no investment went into the asset. Analytically, this demonstrates why, at the deal level, investments that were announced during the commodity price boom did not materialise, and why others succeeded.

2012-2018. The deal did not materialise

In 2012, Shanduka delivered a feasibility review of the mine showing a positive net present value. In response, Lonmin reported that it had not yet independently peer reviewed the report (Lonmin, 2012: 17). In its annual report of 2013, Lonmin referred to Messina as "formerly an operational mine", confirming the status of the asset during this period. In the report, Lonmin reemphasised the agreement with Shanduka to turn around the mine and take a controlling stake (Lonmin, 2013: 9). A year later, Lonmin announced that Shanduka was reworking its bankable feasibility study and the Shanduka board would return with a decision. Lonmin placed a deadline for Shanduka to exercise its option by March 2015 (Lonmin, 2014: 177). In 2015, Lonmin extended the deadline to 30 April 2016 due to Shanduka merging with Phembani (Lonmin AR 2015:47). By 2018, even after the merger, the asset remained mothballed.

Conclusion. How does the deal fare in light of the hypothesis?

Part of what the mining law meant to achieve was to drive investment upward in mining through the "use it or lose it" principle. The idea was to disincentivise hoarding of mineral rich rights for other developers who could capitalise the opportunities. The Messina mine opportunity appears to be related to such a situation, where an investor continually announces future plans to invest, but never gets around to do it. It is possible that Lonmin was genuinely trying to get its BEE partners assets to become operating entities, but this would not conform with the broader corporate strategy of Lonmin, and its design of Incwala.

Table 23 – Intended versus actual capital investment expenditure on the Messina mine

Asset	Intended/announced investment (+year)	Actual investment 2005-2008	Actual Investment 2009-2013	Actual Investment 2014-2018	Total
Messina/ Limpopo	**2005**: Lonmin plans to spend **$75-million** over the next three years on the development of the Messina Phase I projects (Mining Weekly, 2005)	$3 million	$0.00 "The Limpopo assets have not produced an ounce of platinum group metals since 2009" (Matomela, 2011)	$0.00 Mothballed: Care and maintenance	c.$3million, far below the $75 million due to be spent on the Phase 1 project
Total	Underinvested asset. Failed deal. **Third deal.**				

Having carefully studied each annual report by Lonmin, as well as market reports, and Nedbank's annual list of all capital mining investments in South Africa, Table 23 presents the findings.[143] Compared to $75 million capital expenditure Lonmin announced it would spend on Messina between 2005 and 2008, the company only spent $3 million during that period, and then placed the mine on care and maintenance. This overall story of the Messina mine corresponds with both the period when Messina was in production (2005-2008), and the period thereafter when the mine was idle. the Messina story is a third tier investment story, a deal with one round of low investment. This is also a deal that promised transformation into a mine operated by a BEE partner, but which did not materialise. The outcome corresponds with the overall story of Lonmin's opportunism, poor partnerships and as a result, unstable deals.

8.7. Pandora joint venture deal. Lonmin's perspective

Summary of the Pandora deal

The Pandora deal was initiated in 2000 between Lonmin as operator, with partners Amplats, Northam (Mvelaphanda), and later the Bapo ba Mogale community. The deal remained unstable over the years, partly owing to Lonmin's lack of commitment and/or its attempts to stabilise its BEE partners unsuccessfully. The consequence is that the greenfield project, meant to sink R3.3 billion in 2004 terms over six years, only managed failed to reach more than 15 per cent of that investment by 2018. This section tracks the deal from Lonmin's perspective as a partner (using its reports, announcements, and media coverage).

[143] For example, see Nedbank Group Economic Unit (2017).

Tracing the Pandora deal

In the year 2000, with the platinum industry ramping up production, Lonmin, Amplats, and Northam came to a deal to establish the Pandora platinum project. In terms of ownership, Lonmin and Amplats had 45 per cent each, and Northam had 10 per cent. The property abutted Lonmin's Marikana complex, as shown in Figure 27 above. This was also a period when mining I-firms presented their deals to the Department of Minerals and Resources (DMR). The DMR rejected the ownership structure of the deal on the basis that it did not involve BEE partners or the local community on whose land the project was located (Fin24, 2004b). The DMR during this period (2002-2004) required mining companies to show how they planned to meet targets to transfer 15 per cent equity by 2009. The sooner a company complied, the sooner the conversion of the company's or project's mining rights was completed. This problem was resolved by allocating the community (the Bapo ba Mogale community) 7.5 per cent stake in the project. Northam also had a BEE partner, Mvelaphanda Resources, which agreed to house Northam's shares of a revised 7.5 per cent until the conversion of rights. Lonmin reduced its stake to 42.5 per cent, so did Amplats. Lonmin would be the mine operator, leveraging its infrastructure in its Marikana mining complex (Lonmin, 2012: 1).

From the conclusion of the deal in 2000, Lonmin noted in its annual report that Pandora was integral to its long-term production plan. Expressions of long-term expansion plans were expected of platinum producers because of the greenfield opportunities and indications of rising platinum prices. Amplats also announced major expansion plans during this period (See Chapter 6), also citing Pandora as a deal it hoped would contribute to scaling up production. Building the mine was intended to start on 1 July 2001, by using and expanding existing infrastructure owned by Amplats and Lonmin. The capital expenditure would be R2.8 billion in 2002 terms (R3.3 billion in 2004 terms), with Amplats providing only its portion of the capital and refining only its portion. The mine would have an expected life of 30 years.

However, in its 2004 annual report, Lonmin excluded Pandora from its future production growth targets. Brad Mills, the CEO at the time, said he was confident Lonmin would be "delivering more from our current infrastructure at better capital returns and lower costs than a major Greenfield development at Pandora" (Lonmin, 2004: 7). In place of Pandora, Lonmin managed to develop a "New Mine Extraction Plan" and a "Mechanisation and Automation strategy" that would exploit its current assets" (Lonmin, 2004: 11–12). In terms of the sequence of events described thus far, this change probably signalled a lack of commitment from Lonmin, which was responsible for running the project. That said, from this study's theoretical

expectations, an opportunistic I-firm would much rather sweat its assets to extract the maximum value, than to embark on long term greenfield investments. This is consistent with sweating assets. Reflecting back on the Akanani deal, which came later in 2006, the question is: did Lonmin really intend to take on new projects, given Mills' statement above?

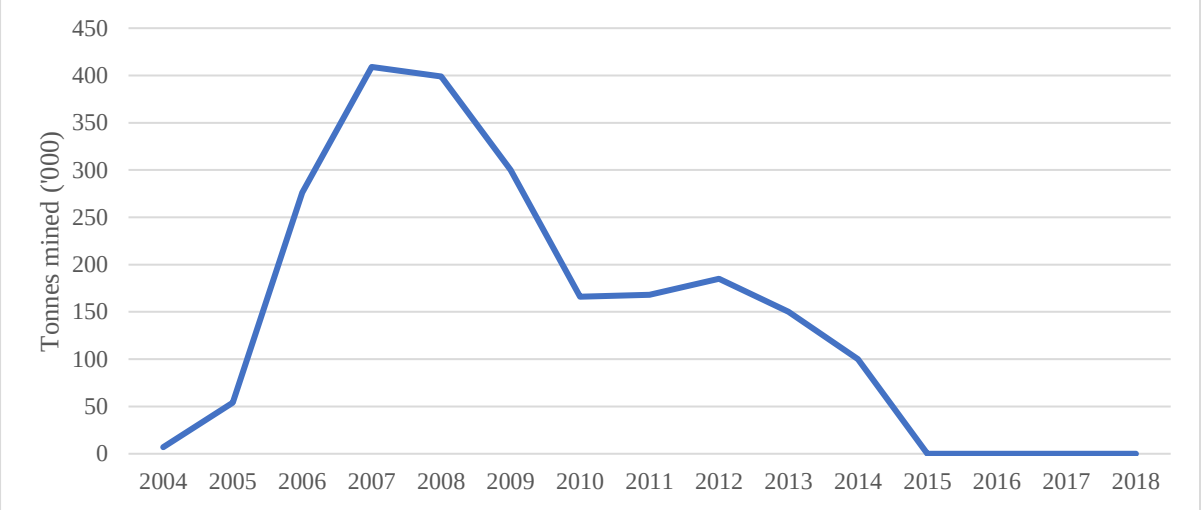
In 2005, Lonmin noted a shift in plans that directly affected the future ownership structure of Pandora. Using Incwala as a vehicle, Lonmin planned to acquire a controlling stake in Mvelaphanda Resources, the BEE partner housing 7.5 per cent of the Pandora project. Acquiring Mvelaphanda would have brought Lonmin closer to the DMR, which had a good relationship with Mvelaphanda (Fin24, 2004b). The deal would have also increased Lonmin's stake in Pandora to a controlling share, perhaps shifting the scales on its commitment to the project. Other lucrative reasons included the assets under Mvelaphanda, as well as future BEE deal flow. Consequently, Incwala's CEO Arne Frandsen announced on 22 December 2005 that Incwala would buy a 23 per cent stake in Mvelaphanda Resources for R760 million, including taking over Mvelaphanda's management contract and the right to appoint Mvelaphanda's chief executive and chief financial officers (Reed, 2005). On 23 February 2006, Mvelaphanda's CEO Pine Pienaar reported that he estimated that "the deal between its parent company, Mvelaphanda Holdings, and Incwala Resources would be consummated by the end of March [2006]" (Mawson, 2006).

However, on 27 February 2006, Incwala's Frandsen and Mvelaphanda's Pienaar publicly divulged the tension in the deal. Both companies were BEE dealmakers and were poised to compete for the same deals. To assure Mvelaphanda, Frandsen said that "Incwala did not have any ambitions of becoming an operating company. He added that Incwala might actually be well placed to assist Mvela in structuring and financing deals" (IOL, 2006b). On 3 April 2006, the Mvelaphanda Group announced that the deal with Incwala had collapsed. In order to agree to the deal, Mvelaphanda required Incwala to "offer all new business opportunities in the resource sector to Mvela Resources … until April 2009" (Mail & Guardian, 2006). The Pandora BEE partners temporarily parted ways. In the meantime, the Pandora project was hardly making improvements in development, remaining undercapitalised, and delivering limited production. The proposition is that the deal was not stabilising in manner that supported investment for this greenfield project.

In 2007, the founding leadership of Incwala exited Lonmin/Incwala to establish a separate (controversial) platinum company (See Section D). The new leadership of Incwala, the BEE

partners, approached Mvelaphanda Resources for a merger, in 2008 (Mail & Guardian, 2008). Had this second attempt succeeded, it would have strengthened Incwala from collapse, but also could potentially have brought the Pandora project firmly within the control of Lonmin. The Incwala/Mvela deal did not materialise. It appears that the sum of this unstable deal contributed to further underinvestment of the Pandora project. In 2008, Lonmin reported a decline in production from Pandora, but an operating profit of $18 million to itself from the operation (Lonmin, 2008b: 9). Further decline in production was announced in the following year. In 2010, Lonmin reported its intentions to focus on Pandora post 2013 as a growth project (Lonmin, 2009: 10), although in 2011 it reported some work to extend the life of the mine to 2029. No specifics nor expenditures were stated (Lonmin, 2011: 25). In 2014, Amplats announced its intention to exit the Pandora JV (IOL, 2014). In 2016, Amplats announced the sale of its Pandora shares to Lonmin, officially exiting the joint venture in 2017.

Figure 31 – Pandora's production trend, 2004 – 2018



Source: Compiled by Author using Lonmin annual reports

Figure 31 shows the production statistics provided by Lonmin. Read in conjunction with Amplats' annual reports, the project was in elementary production stage, hardly adding significant tonnage to the I-firms' annual production output. Therefore, the bulge in the figure is not of relative significance. What is evident, however, is that the project kept declining from the 2007-08 period and failed to recover. By 2015, the project had stopped operating despite Lonmin's later efforts to restructure Pandora and use the asset to prove itself to shareholders as a company that remained a growth opportunity.

Conclusion – How does the deal fare in light of the hypothesis?

Table 24 – Amplats' share of investment in Pandora project, 2001-2018

Asset	Intended/announced investment (+year)	Actual Investment 2001-2007	Actual Investment 2008-2014	Actual Investment 2015-2018	Total
Pandora project	**2002**. R2.8 billion in 2002 terms **2004**. R3.3 billion in 2004 terms	R35.1 million	R252 million	R0	Huge, billions worth of underinvestment in the project. Amplats' share of investments totals c.R287.1 million. Together with JV partners, the investment estimate is c.R574.2 million.

Source: Author's calculations from Northam Annual reports.

Lonmin did not provide capital investment data on the project (its portion of contribution as a partner). However, the information above suggests that the outcome of the deal can be classified as Tier 3: a deal with low investment that eventually crumbles (z=2, t=0). Reflecting back on the hypothesis and the theoretical framework, the story of the Pandora deal highlights the instability or "deal mess" associated with an opportunistic I-firm, but also with opportunistic E-partners. Amplats, as a partner in the deal, mostly reported optimistically about the deal, including reporting its own share of capital investment, though dying out very quickly. It is not clear what other role Amplats played in either supporting or compromising the deal.

8.8. Loskop JV with Boynton (and the Bakgatla)

The Loskop project is documented as a case that demonstrates the hypothesis in deals that really never take off. The case is brief because nothing much happened, but important because it shows how deals between opportunistic partners work, and why these might struggle to become sufficiently stable and robust to support investment.

The Loskop project was a 50-50 joint venture deal between Lonmin and black-empowered Boynton Investments[144] (Lonmin, 2009). The project was first mentioned by Lonmin in 2005 when the company reported discovery of platinum ore in the area (see map in Figure 27). The project was a greenfield opportunity for Lonmin (Lonmin, 2005b: 16). During this time, Incwala was under the leadership of Arne Frandsen.

[144] Boynton Investments was owned by a Canadian junior miner, Platmin, with BEE partner Moepi group of companies.

As mentioned in the preceding section, in 2007 the Incwala founders Arne Frandsen (CEO) and Brian Gilbertson (Chairman) left Lonmin to focus on their newly established company, Pallinghurst Group, to exploit resources in the Bakgatla ba Kgafela areas (Mnwana, 2014) (See Chapter 11). [145] Soon after Pallinghurst was founded, it bought a controlling stake in Boynton.[146] This made Pallinghurst and Lonmin partners in the Loskop project. The problem was that, as documented in Chapter 11, Pallinghurst soon became known for its collusive deals with predatory chiefs, spending time in court over several deals. This did not bode well for the stability of the Loskop deal.

Although Lonmin did not divulge much detail on the project in its annual reports, in 2010 and 2011 the company did report that the project was part of Lonmin's assets. However, in 2014, Lonmin announced that it had "held arbitration proceedings against Boynton on the basis that it failed to comply with its promise to deliver an unencumbered asset to the joint venture. We are currently awaiting the arbitrator's decision." (Lonmin, 2014: 177). It appears that the unravelling of Pallinghurst's deals with predatory chiefs presiding over concerned mining communities had also reached the Loskop deal. The statement by Lonmin suggests that only later was it discovered that the asset was "encumbered". As a result, in 2015, Lonmin reported that the partnership lost the rights to Loskop, because the DMR declined to renew the application submitted by Boynton. Lonmin also reported that it would continue with arbitration against Boynton (Lonmin, 2015: 47).

Conclusion

The Loskop deal captures the hypothesis as follows: The hypothesis expects that opportunistic partners will work with similar partners, and this compromises the chances of success because the deals cannot be robust enough to buttress capital investment. As seen in this case, ultimately nothing actually happens in terms of investment. It is also important to note, however, that the rule of law is active as a resort to solving deal issues. This drives the point that the rule of law plays an important supportive institution in the game of deals. Overall, the deal is classified as a fourth-tier deal: deal but no subsequent investment.

[145] IDC followed the duo in funding the company with R3.24 billion (Creamer, 2012).
[146] Pallinghurst bought a controlling stake in the parent company of Boynton, Platmin (Pallinghurst Resources, 2008)

8.9. Conclusion

The empirical process of tracing Lonmin's two-level deals broadly corroborates the narrative and characterisation of Lonmin as opportunistic as set out in Chapter 7. While the period being studied was certainly associated with several investment-dampening factors such as poor infrastructure, red tape, and financing constraints, the hypothesis and research methodology have cut through the general macro explanations to expose deal level dynamics that explain variation in deal and investment success.

In terms of investment performance, the Marikana asset, buttressed by Lonmin's corporate-level deals, is a story of one substantial investment during its development phase in the 1990s, thereafter a relatively flat year on year growth. The mine was, however, well developed and complex enough to deliver large output that could make great returns during the 2000s commodity price boom.

Apart from replacing ageing shafts, Lonmin sunk no expansion investment in that asset. In terms of asset level deals, the study found no evidence of moderate or substantial investment in any of the deals. The Messina mine and the Pandora project saw very little investment, and both missed the commodity price boom. The Akanani and the Loskop projects are examples of missed greenfield investment, because Lonmin could not stabilise either of the deals with its partners.

Overall, Lonmin misses the value of having reliable, production-oriented BEE partners that are arms-length from the political-power-players of the day. This kind of farsighted approach is very far from Lonmin's corporate DNA.

SECTION D – Deals with mining communities

CHAPTER 9 The Bafokeng and the Bakgatla. The corporatisation of communities under developmental versus predatory leadership

Abstract

This chapter is a case study of the Royal Bafokeng and the Bakgatla ba Kgafela communities as BEE partners of Amplats. The case study documents how these communities progressed from marginalisation through land dispossession, to the corporatisation and commercialisation of their platinum interests. The case study highlights how a combination of a patient I-firm, a patient, traditional authority leadership, and the support of the rule of law, can produce coherent partnerships. The case study also shows that where one of these elements is lacking, it can lead to weaker partnerships with less beneficial results. These findings are further explored in the next chapter in terms of investment outcomes.

Résumé

Ce chapitre est une étude de cas des communautés Royal Bafokeng et Bakgatla ba Kgafela en tant que partenaires BEE d'Amplats. L'étude de cas documente comment ces communautés ont progressé de la marginalisation par la dépossession des terres, à la corporatisation et à la commercialisation de leurs intérêts dans le platine. L'étude de cas montre comment la combinaison d'une entreprise industrielle patiente, d'un leadership patient de l'autorité traditionnelle et du soutien de l'État de droit peut produire des partenariats cohérents. L'étude de cas montre également que lorsque l'un de ces éléments fait défaut, cela peut conduire à des partenariats plus faibles avec des résultats moins bénéfiques. Ces conclusions sont approfondies dans le chapitre suivant en termes de résultats d'investissement.

9.1. Introduction

Section D is a continuation of the I-patient world story of Amplats. It documents the important role of land-owning, mining communities in the platinum belt. The case studies demonstrate the dynamics of deals between an incumbent and communities as BEE partners.

How did the communities corporatise successfully to engage as BEE partners in mining deals? This chapter documents the story of two landowning communities in the platinum-rich areas where Amplats leases some of its mining rights. The two communities are the Royal Bafokeng and the Bakgatla ba Kgafela, both BEE partners with Amplats. Both communities (each consisting of several villages) are located in the North West province, and each number about 300,000 residents (Roberts, 2020). The study explores the rules-deals hypothesis by studying success in deals based on the variation of the leadership of the two communities along the capital spectrum. What is particularly insightful is how two landowning, neighbouring communities begin with similar initial conditions, and eventually diverge in terms of their development and participation in BEE deals. The study of communities as BEE partners is important for the following reasons:

1. It sheds light on the important process of corporatisation of platinum-rich land-owning communities.
2. hypothesis: just as individual BEE partners vary along the capital spectrum, so too do tribal community leaders vary along the patient-predatory spectrum. This has implications for BEE deals, investment, and transformation outcomes.
3. So far, this research project has highlighted the important role of South Africa's relatively robust rule of law. This role of the rule of law has not surfaced explicitly, but implicitly in how the rule of law supports asset-level deals. The study of the struggle for better BEE deals by communities happens in the courts of law. Therefore, the community case studies explicitly provide case evidence of the role of law in BEE deals.
4. The cases provide a useful insight into how land-owning communities can organise under coherent leadership to assert themselves in the BEE game, just as politically connected individuals have been doing. It also demonstrates the corrosive role of predatory leaders.
5. Finally, the cases show how a high degree of coherency within mining land-owning communities can translate into successful investments and transformation.

The chapter is structured as follows. Section 9.2 documents a brief history of the discovery of platinum in the land of the Bafokeng and the Bakgatla, and how the communities came to own the land. Section 9.3 provides the context of the messy politics of governing the platinum rents. Section 9.4 focuses on the question of how the Bafokeng asserted themselves against I-firms

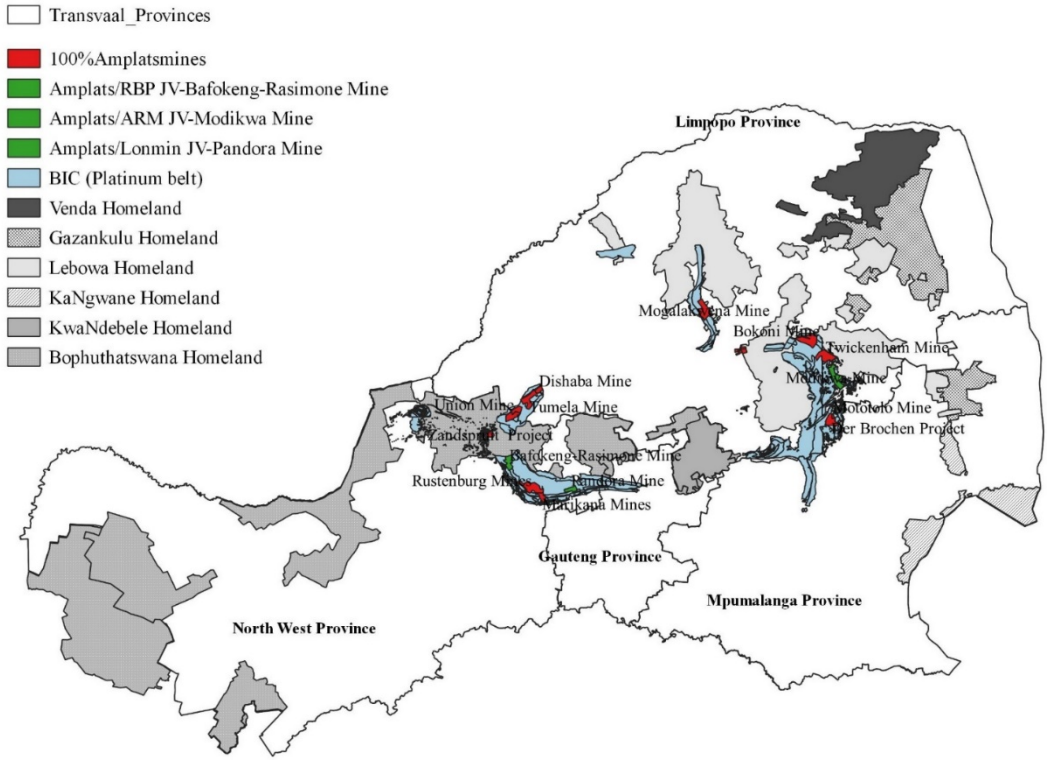
to get better, developmental deals. The rule of law was key. This section also includes the story of the community's relationship with Amplats. Section 9.5. reflects on the importance of the "Bafokeng-like" community leadership in BEE deals. Section 9.6 shifts to the second community, the Bakgatla, and documents this community's story of battling to corporatise and its relationship with Amplats. Altogether, the narratives provide a basis to characterise the communities along the capital spectrum, in section 9.7. Chapter 10 comprises an empirical investigation of the degree of success of the communities' deals, mainly with Amplats – the patient partner.

9.2. Historical outline of community landownership, homelands, and the platinum belt

Platinum in South Africa was discovered in 1924 in the North West Province (formerly Western Transvaal, consisting of the Bophuthatswana area). Chapter 5 documented that JCI/Amplats mines first developed in this province. Some of the mineral rights of Amplats, and its peer, Impala platinum (Implats), overlapped with the Bafokeng and the Bakgatla owned land – specifically, the fragmented Bophuthatswana homeland.[147]. As such, the I-firms rented mining rights from these land-owning rural communities. The overlap between the Bophuthatswana homeland and the platinum belt is shown in Figure 32. To understand the history of the communities and the subsequent deals with I-firms, it is necessary to outline the history of this land ownership from the 1800's.

[147] This history of homelands is detailed in Part II, Chapter 13.

Figure 32 – The Bushveld Igneous Complex and the homelands in northern (former Transvaal) South Africa



Source: Nxele, 2022

Through various conflicts from the 1600's, black people were dispossessed of land in many parts of South Africa. This spatial marginalisation of black people intensified throughout the 1800's, culminating in the Natives Land Act of 1913 and the Native Trust and Land Act of 1936 that decisively forced black people to occupy less valued land in the country's margins. These areas would eventually be known as homelands or Bantustans, reserved for the permanent removal of black people from South Africa (Manson, 2013). However, in some parts of the North West province (former Transvaal), an opportunity arose for black people in the 1860s to acquire farmland, on a "tribal" basis, through missionary intercession. Generally, the name of the "tribe" chief – as traditional authority – would appear in the title deed. Missionary mediation was only allowed up until 1881, after which black people could purchase land in the name of a functionary of the state, such as a minister of Native Affairs. The process of re-registering the farms under this new law required the chief as representative. This enabled Transvaal-based black people to retain the right to purchase land outside the designated areas set aside for them under the 1913 and 1936 Land Acts. In the Rustenburg region alone, more than 80 farms were acquired through such means (Manson, 2013).

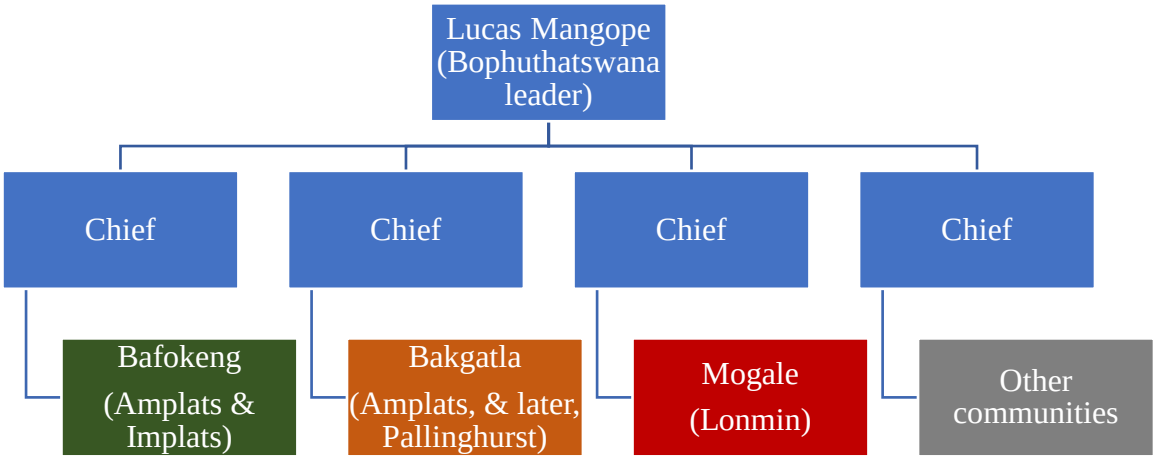
As outlined above, only in the 1990s were platinum deposits discovered in this land that some communities in this area had already purchased. With the arrival of large prospectors such as JCI (Amplats) and Gencor (Implats), the chiefs of these areas sold prospecting rights for income to these companies (Manson, 2013). Thus, throughout the 1920s to 1980s, incumbent companies thrived on this comfortable arrangement of privately held rights and leased rights from these rural communities and government.

9.3. Bophuthatswana and the Bafokeng under the leadership of Lucas Mangope

Part of the plan of creating homelands was to incrementally declare each homeland an independent, self-governed state. To this effect, the Bophuthatswana homeland, consisting of several villages including the Bafokeng and the Bakgatla, was declared an independent state in 1977. This period coincided with ongoing platinum mining developments in the area, mainly by Anglo, Gencor and, soon after, Lonrho. Having been declared an independent state, with the oversight of the apartheid government, the homeland constituted its own government, presided over by President Lucas Mangope. All mines operating in these areas came under the jurisdiction of Bophuthatswana laws (*African Business*, 1994). In effect, Mangope became the custodian of the land owned by the different communities which had purchased land in the 1800's (See Figure 33).

Shortly into his tenure, Mangope became locally associated with misappropriation of state funds, expropriation of tribal land without compensation, and other forms of maladministration. The accumulating accusations of this leadership led to his overthrow in February 1988 by members of a local military police unit. However, the South African Defence Force soon reversed this coup, reinstalling Mangope as the leader of Bophuthatswana (Manson & Mbenga, 2003). In the same year, 1988, the Mangope government was made the official trustee of all communities in Bophuthatswana, with all royalties flowing into a centralised treasury under Mangope's oversight. This gave Mangope and his "tribal chiefs" presiding over the various villages unilateral decision-making power over mining deals (Manson & Mbenga, 2003). Furthermore, Mangope had outlawed the Ramaphosa-founded National Union of Mineworkers (NUM), giving Mangope prime position as the sole dealmaker. These conditions worked very well for the three leading platinum producers in these areas. Anglo Platinum leased areas in the Bafokeng and the Bakgatla land, Impala Platinum leased areas in the Bafokeng land, and Lonrho leased areas in the Mogale land.

Figure 33 – The hierarchical governance arrangement in the former Bophuthatswana homeland



Source: Author.

The drawback of the Mangope regime was that Mangope appointed community chiefs who would be compliant to him, often usurping sitting chiefs and replacing them with rival siblings. This was the case in the Bafokeng. Sitting chief Edward Lebone Molotlegi of the Bafokeng opposed the apartheid-enforced government in the land, and later opposed a deal by Implats over the Bafokeng land. Although Implats had been mining in the area from the mid-1960s, the company operated under highly favourable terms brokered by the tribal authority under the oversight of the (South African) Minister of Bantu Affairs (Capps, 2012). By the mid 1980's, Impala platinum's success was soaring, and the company decided to extend its operation into a new and unexploited portion of the Bafokeng reserve. However, the Bafokeng chieftaincy asserted its interests by questioning the amount of past royalty pay-outs. When the planned expansion was nullified by the Bafokeng, Impala sought Lucas Mangope to intervene in his capacity as state trustee of the tribal land in Bafokeng. The Bafokeng chief was forced into exile in Botswana by Mangope. Mangope replaced him with his compliant brother, George Molotlegi. This ensured that the windfalls from mining could be channelled unchallenged (Manson & Mbenga, 2003; Capps, 2012).

However, the transition to democracy reunited homelands into South Africa. A lobby of traditional leaders, including Bophuthatswana homeland leader Lucas Mangope opposed the re-incorporation of the homelands because the change threatened to undermine the system of

chieftaincy that presided over rents, specifically platinum rents for the Mangope "presidency" (Claassens, 2019). In March 1994, however, in a dramatic and popular uprising, Mangope was ejected from power, allowing for the Bafokeng to resume the struggle for control over their political and economic affairs (Manson & Mbenga, 2003). The fall of the Mangope government meant that the exiled chief Edward Lebone Molotlegi could return to his post as chief in 1994, and top of his agenda was to challenge the validity of the deals Mangope had signed with Implats and Amplats. Molotlegi died soon after his return in 1995, but was succeeded by credible heirs, chief Mollwane Molotlegi (1995-2000) and chief Leruo Molotlegi (since 2000), who continued the mission to recover the benefits belonging to the Bafokeng.

The immediate implication of this reincorporation of homelands and the reorganisation of chiefs was that platinum-producing companies might have to renegotiate mineral agreements initially made with the deposed government of Lucas Mangope (*African Business*, 1994). This turn of events surfaced longstanding problems of royalty payments to the different communities. The Bafokeng were dissatisfied with the royalty deals with Impala Platinum and, to a lesser degree, Anglo (Rustenburg) Platinum. In addition, they raised questions about over R400 million of missing royalties channelled to the Bophuthatswana's/Mangope's Treasury by Implats and Amplats (*African Business*, 1994). Specifically, this community owned 84 per cent of Impala mine's lease area. The circa R400 million royalties from Impala was a cumulative sum since the late 1960s, while Amplats had smaller royalty contributions because of a smaller lease area.

9.4. How did the Bafokeng assert their rights and successfully "corporatise"?

The fall of Mangope gave way to a long court battle between Implats and the Bafokeng. The Bafokeng were challenging Implats' historical, state-business agreements over their land, especially to set aside the 1990 agreements with Mangope. Implats, in turn, wanted to challenge the status of the Bafokeng as legal owners of the land, because if they were not, then it would render them incapable of bringing the case against the company. Secondly, Implats alleged that the Bafokeng were not owners of the land, but merely beneficiaries of a trust (Manson & Mbenga, 2003). After a series of long and protracted court battles between the Royal Bafokeng Nation and Implats over the platinum taken from their territories, in 1999 Implats finally settled out of court. and Royal Bafokeng would receive 22 per cent royalty on all platinum taken from their territory (Manson & Mbenga, 2003). This was a landmark agreement as the

Bafokeng not only stood to gain income from royalties from metals obtained from areas over which they held the mineral rights, but they also became a major shareholder in the company with board representation (Implats, 2002). This deal shifted the Bafokeng from the precipice of marginalisation and exploitation to one of the wealthiest communities in South Africa. The value of the Bafokeng's stake in Impala tripled to more than $50 million by 2001, with annual royalties of approximately $63 million from platinum mining, because at the time, Implats was the second largest platinum producer (Commey, 2014).

The Bafokeng was able to build solid relations with experienced people in the mining industry such as Steve Kearney, who played a crucial role in the negotiations with Implats and with Anglo American platinum (Moneyweb, 2020). As chairman of Royal Bafokeng Resources (RBR), Kearney ensured the Bafokeng gained from his fair and transparent negotiation style, as well as his shrewd comprehension of the Bafokeng's legal ownership of their land and mineral reserves (Royal Bafokeng Holdings, 2020).

By early 2000, the Bafokeng had resolved internal issues and built themselves into a coherent community with good leadership. They could act as one and present themselves as "a BEE partner". Through several BEE deals, the Bafokeng continued to expand their wealth and commercial interests as incumbent mining companies bartered for greater community relations and land access (Bowman, 2019). At the end of 2005, it was announced that Implats would give Bafokeng a 30 per cent discount for Implats shares, estimated to be around R5 billion (£442m). Implats believed this move would bring them in line with new legislation requiring mining companies to have 26 per cent of their shares held by black South Africans within 10 years (Meldrum, 2005). In 2007, the Bafokeng converted their royalty agreement into an equity share in Implats in response to rumours of government seizing mining royalties on the basis that mining rights form part of national patrimony for the gain of all South Africans (Moneyweb, 2020). Through its investment vehicle RBH, the Bafokeng successfully diversified their portfolio from solely mining to a varied asset base in financial services, real estate, infrastructure, and telecommunications (See Table 25).

Table 25 – The Royal Bafokeng Empire

Company	Year of registration	Operating Status as at 2022	Industry	Notable Crossholdings	Notable Acquisitions
Royal Bafokeng Resources	2002	Active	Mining of Platinum Group Metals	Govt. Employees Pension Fund	Not stated
Royal Bafokeng Management Services (Pty) Ltd	2002	Active	Financial Intermediation	RBN Development Trust	Not stated
Royal Bafokeng Finance	2004	Voluntary Liquidation	Financial Intermediation	RBN Development Trust	Zurich Insurance Company SA Ltd (2009)
Royal Bafokeng Capital (Pty) Ltd	2005	Active	Other Financial Intermediation	JSW Energy Ltd	Zaptronix Ltd (2007); Yomhlaba Resources (2007)
Royal Bafokeng Holdings (Pty) Ltd	2006	Active	Financial Intermediation	RBN Development Trust	Bafokeng Rasimone Platinum Mine (2008)
Royal Bafokeng Sports	2006	Active	Hotels, Camping Sites	Cross Point Trading	Not stated
Royal Bafokeng *Platinum* Holdings	2007	Active	Financial Intermediation	RBN Development Trust	Bafokeng Rasimone Platinum Mine (2008)
Royal Bafokeng Platinum Ltd	2008	Active	Mining of Platinum Group Metals	Govt. Employees Pension Fund	Maseve Investments (2017)
Royal Bafokeng Platinum Management Services (Pty)	2009	Active	Mining of Platinum Group Metals	Govt. Employees Pension Fund	Not stated
Royal Bafokeng Resources Properties	2012	Active	Real Estate Activities with Own Property	Govt. Employees Pension Fund	Not stated
Royal Bafokeng Housing	Not stated	Not stated	Fund	Public Investment Corporation SOC Ltd	n/a
Royal Bafokeng Metair Trust	Not stated	Not stated	Trust	RBN Development Trust	n/a
Royal Bafokeng Nation Development Trust	Not stated	Not stated	Trust	Moumo Integrated Development, Platinum Stars FC	n/a
RBN Platinum Province BBBEE Trust	Not stated	Not stated	Trust	YeboYethu (RF) Ltd	n/a

Source: Author. Compiled from *Who owns whom*.

As patient BEE partners to Amplats, the Bafokeng participated actively in building the Bafokeng mine, and became joint operators as soon as the mine was active. A few years after listing the Royal Bafokeng Platinum on the JSE in 2010, the company fully took over the Bafokeng mine operations.

9.5. Why the success of the Bafokeng leadership is particularly miraculous

The democratisation process of South Africa did achieve the feat of reincorporating homelands back into South Africa. However, land-owning communities, particularly in mining areas, hoped that they would control the revenue generated from this land. This would not be so, except for a few communities like the Bafokeng who corporatised successfully – through aggressive court-won battles.

On the contrary , when the ANC nationalised mineral rights under the programme of national development, the land-owning communities introduced a different complication: the ownership of surface rights. To remedy the problem, parallel to the new mining law and BEE law, the government issued a set of laws which effectively gave community chiefs the decision-making power over their communities.[148] For communal areas, the mining law transferred control from

[148] The laws issued were the Traditional Leadership and Governance Framework Act (TLGFA) of 2003 and the Communal Land Rights Act (CLRA) of 2004.

homeland "presidents" to the national government, specifically the Minister of Mineral Resources. In addition, the law gave powers to premiers, who are province-level presidents, to preside over communal trusts, which receive windfalls from mining deals. This created an enabling framework for the pervasive abuse of power to channel rents into private pockets. In effect, mining deals could straightforwardly be concluded by mining companies, the ANC government, and the "tribal" chiefs (Claassens, 2019). Public Protector Thuli Madonsela's reports in 2017 issued explosive findings of the extent of looting of these trusts and underhand deals (Khunou, 2017; Claassens, 2019). [149]

Unlike the leadership of the Bakgatla, as will be detailed below, and despite the incentives to enrich themselves, the Bafokeng leadership opted for a commercial route to develop the Bafokeng community, thereby making it the most self-developed and empowered community in South Africa. This case addresses the proposition that BEE partners differ: in this case, the leaders of communities differ in their orientation to accumulation and transformation. Finding incumbent-community partnerships that resolved these tensions and threats to create stable deals is difficult and rare. However, platinum is mainly located in these areas, making platinum communities, especially land-owning communities, central to the study of deals and investment in platinum.

9.6. The Bakgatla-ba-Kgafela community and Amplats

Amplats (through JCI) also owned a prime asset in the North West, the Union mine. This asset is located in the Bakgatla community. The Bakgatla case study provides a comparative assessment of the challenges that landowning communities face in attempting to corporatise and commercialise the mining opportunities in their land. This "group entrepreneurship" is important in understanding successful partnerships in the exploitation of natural resources.

The Bakgatla community share a similar story with the early years of the Bafokeng, also having acquired platinum rich land in the mid-1800's. However, the Bakgatla only started receiving royalties for the mining carried out in their land in 1982 (Capps & Mnwana, 2015). Following the end of Apartheid, similar to the Bafokeng-Implats dispute, the Bakgatla challenged Anglo over historical royalty payments (Amplats, 2018b). This eventually led to a better royalty

[149] Relating to the Bakgatla, the Baloyi Commission set up in 2008 investigated billions of rands lost through secret deals negotiated between Kgosi Nyalala Pilane and Pallinghurst Resources (Claassens, 2019; Wicomb, 2019).

agreement between Amplats and the Bakgatla over Amplats' Union mine, whose rights overlap the community's land. The union mine had been Amplats' third-most profitable operation for decades.

The battles fought and won by the Bafokeng show what is possible for other communities provided that if they can organise themselves. The Bafokeng had turned their court victories into commercial success, and by the mid-2000s were well positioned to convert their platinum company into a JSE listed entity. The Bakgatla were sufficiently organised enough to call for a renewed deal with Amplats in the mid-2000s that would convert the Bakgatla's interest into equity stakes in Amplats' Union mine.

Table 26 – The Bakgatla ba Kgafela registered businesses

Company	Year of registration	Operating Status as at 2022	Industry	Notable Crossholdings
Bakgatla Ba Kgafela Investments and Resources	2007	Active	Service Activities Incidental to Mining	
Bakgatla Ba Kgafela Investment Holdings	2013	Active	Financial intermediation	Sibanye Rustenburg Platinum Mines (26%)
Siyanda Bakgatla Platinum Mine	2016	Active	Mining of Platinum Group Metals	Siyanda Resources (Pty) Ltd
Bakgatla-Ba-Kgafela Tribe			Trust	Siyanda Bakgatla Platinum Mine, Sedibelo Platinum Mines Ltd

Source: Who own who database.

To that end, Amplats sold 15 per cent of the Union mine to the Bakgatla, who were represented by the chief, Nyalala Pilane, for R420 million in cash. [150]

Contrary to the leadership of the Bafokeng, chief Nyalala Pilane used his position to exploit the community treasure for personal benefit. Having ascended to chieftaincy in 1996, he benefited from the traditional authority law of 2004 that gave traditional chiefs powers over the administration and control of communal land and natural resources (Mnwana, 2018). Pilane used the platform to appropriate rents privately, partly by using ANC connections and links to major commercial players to barter mining rights in exchange for royalties. While the Bakgatla appeared to follow the Bafokeng model, registering companies for the purposes of BEE deals, the corruption and mismanagement of funds by Pilane undermined the prospects of uniting and

[150] Chief Pilane was a taxi company boss and labour unionist, before ascending to the leadership of the Bakgatla (Mnwana, 2018).

commercialising the platinum rich land into a successful producing company like the Bafokeng's, or a successful trust devoted to local development (Mnwana, 2014).

The leadership of the Bakgatla community has been documented in recent literature for other cases of misappropriation of mining rents linked with further underhanded deals, particularly with a company called Pallinghurst (Bloom & Wales-Smith, 2018; Mnwana, 2018; Wales-Smith, 2019). Pallinghurst was founded by Gilbertson and Frandsen, the Lonmin executives who founded Incwala and left the entity when it was failing (The Economist, 2007). The company has been widely documented in scholarly articles and media as a scandalous platinum company in a collusive deal with the Bakgatla leadership (Mnwana, 2014).[151] The cases of collusive deals involving Pilane were examined by the Baloyi Commission (Claassens, 2019; Wicomb, 2019), as well as a recent constitutional court case linked to another Pilane related deal that failed to consult adequately with land owners, giving away mining rights (Louw & Chris Stevens, 2018). Overall, although the Bafokeng and the Bakgatla share a similar history, culture, and platinum mining opportunities, the extent to which one community could turn the opportunity into success for all has largely depended on the orientation of the leadership.

9.7. Conclusion. Placing the Bafokeng and Bakgatla leaderships on the capital spectrum

In conclusion, the Bakgatla-ba-Kgafela represent communities on mining land that obtained wealth and power through their ancestral claims. By exchanging mining rights for royalties and equity, the Bakgatla-ba-Kgafela was able to navigate and ascend the Minerals-Energy Complex (MEC), generating a substantial amount of wealth that could have been pumped back into the community through social development programmes. However, unlike the RBN, the Bakgatla have had to contend with predatory leadership, which prevented the Bakgatla from realising the full benefits of their ancestral lands.

[151] IDC followed the duo in funding the company with R3.24 billion (Creamer, 2012).

Table 27 – INSTRUMENT 1: The Bafokeng and the Bakgatla leadership score on the capital spectrum

	Company types					
Attributes	Patient/Producer company *(farsighted)** *(1)*	Investment-holding company (2)	Opportunistic *(3)*	Predatory *(4)*	Bafokeng leader score (5)	Bakgatla leader score (6)
Incentives or behaviour						
Focus is on fixed investment, production, and skills	+++	++	+	0	3	1
Patient capital invests in exploration and mine development	+++	++	+	0	3	0
Patient capital creates a pipeline of fixed investment projects	+++	++	+	0	1	0
Patient capital seeks for patient JV partners	+++	++	+	0	3	1
Patient capital seeks long-term production-based deals with partners	+++	++	+	0	3	1
Patient capital deploys its own balance sheet capital to domestic investment	+++	++	+	0	3	0
Patient capital, or its corporate strategy, sits above political factions	+++	++	+	0	3	1
Majority of revenue comes from sales of produced goods and services	+++	++	+	0	2	1
Maximum score	24	16	8	0	21	5

In conclusion, the Bakgatla-ba-Kgafela represent communities on mining land that obtained wealth and power through their ancestral claims. By exchanging mining rights for royalties and equity, the Bakgatla-ba-Kgafela was able to navigate and ascend the Minerals-Energy Complex (MEC), generating a substantial amount of wealth that could have been pumped back into the community through social development programmes. However, unlike the RBN, the Bakgatla have had to contend with predatory leadership, which prevented the Bakgatla from realising the full benefits of their ancestral lands.

Table 27 is the capital spectrum that places the post-apartheid leadership of the Bafokeng and the Bakgatla along the spectrum. The Bafokeng leadership evidently committed to creating a coherent, cohesive community. The Bafokeng Nation deployed the rents from mining to build not only an investment portfolio of assets, but also an operating platinum mine which eventually became independent. This demonstrates very clear qualities on the patient side of the capital spectrum. As such, the Bafokeng leadership score 21 points out of 24. However,

this score will be challenged in the next chapter by an examination of the quality of the Bafokeng deal with Amplats.

In contrast, the Bakgatla leadership score 5 out of 24 points, placing it on the opposite, opportunistic end of the spectrum. The leadership of the Bakgatla clearly adopted an extractive accumulation strategy, diverting funds away from the community and away from development, into private gain. This exemplifies predatory leadership inclined towards collusive, rent-seeking deals. What do the deals between traditional authorities and I-firms look like in practice, and how do they lead to investment and transformation outcomes? This is explored in the next chapter.

CHAPTER 10 Micro and nano level. Amplats and deals with communities, and subsequent investments and transformation

Abstract

This chapter builds on the stories of the Bafokeng and the Bakgatla to trace the communities' deals with Amplats. The study finds that although the quality of deals between the two communities varies, both cases produce successful subsequent investment. The Royal Bafokeng stand out as a case of thriving, first-tier investment, and social transformation.

Résumé

Ce chapitre s'appuie sur les histoires des Bafokeng et des Bakgatla pour retracer les transactions des communautés avec Amplats. L'étude révèle que, bien que la qualité des accords entre les deux communautés varie, les deux cas produisent des investissements ultérieurs fructueux. Le Royal Bafokeng se distingue comme un cas d'investissement de premier plan et de transformation sociale florissants.

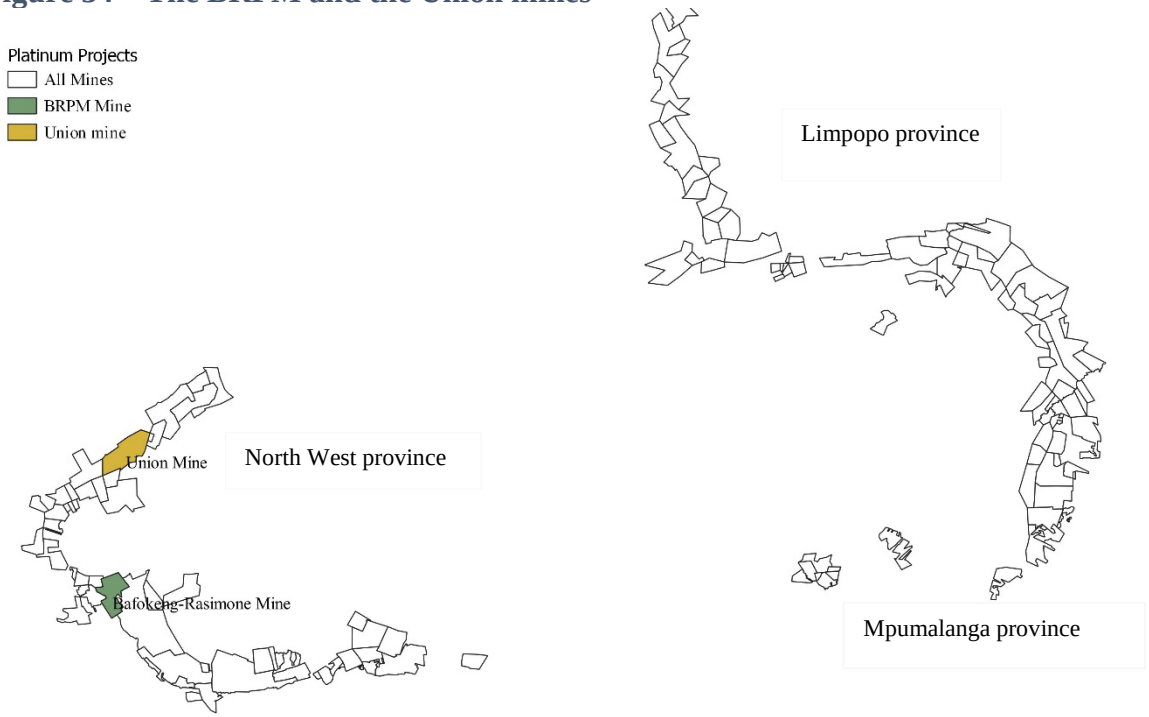
10.1. Introduction

How did the "deal as credible commitment" play out with communities in ways that supported certainty and investment, especially given the contentious and capricious politics in mining communities? Chapter 9 has already suggested that the role of traditional leaders is a key ingredient to the success of deals. This chapters aims to examine the individual deals between Amplats and the communities using a comparative lens. The answer to this question of communities as BEE partners gives better insights into the variation of deals and partners in the BEE deals space.

10.2. Summary of Asset level deals and investment outcomes

This section provides a brief summary of the mines over which Amplats and the communities have established joint ventures. The Royal Bafokeng jointly built and operated the BRPM mine, shown in Figure 34. The Bakgatla, added much later to a mine-level deal, own shares in the Union mine, also shown below.

Figure 34 – The BRPM and the Union mines



Source: Author, using QGIS software. Data from (Zientek et al., 2014).

Table 28 summarises the extent to which Amplats' community-asset level deals resulted in investment and transformation. Both deals are examples of success, though differing in the degree of success. The Royal Bafokeng deal is a case of patient traditional authority leadership, one that was able to work effectively with Amplats, while employing capable people to run the mining affairs of the Bafokeng people. In contrast, the Bakgatla do not have this kind of patient leadership. Likely as a direct result of this, the community does not graduate to becoming joint operating partners with Amplats. Instead, they remain as passive minority shareholders, with reports that the windfalls are not trickling down to community members. Despite this fragmentation in the community, the Union mine remains a successful case of subsequent investment.

Table 28 – Summary of Amplats' joint venture assets with communities and investment outcomes

Year of deal	Asset	Black Partner	Details of plans	Outcome in 2018
2001	Royal Bafokeng Rasimone mine and Styldrift	Royal Bafokeng community	Amplats and the Bafokeng were joint operating partners at the Bafokeng mine, which also included the Styldrift project.	**First Tier** Successful investment with stable deal and transformation
2006	Union Mine, Rooderand, Magazynskraal	Bakgatla ba Kgafela community	The deal was mainly a minority shareholding by the Bakgatla at Union mine. The community could not convert two other deals with Amplats into investments.	**Second Tier** in respect to Union mine. **Fourth Tier** in respect to Rooderand and Magazynskraal.

Source: Compiled by author.

The following sections trace the individual deals.

Asset level deals

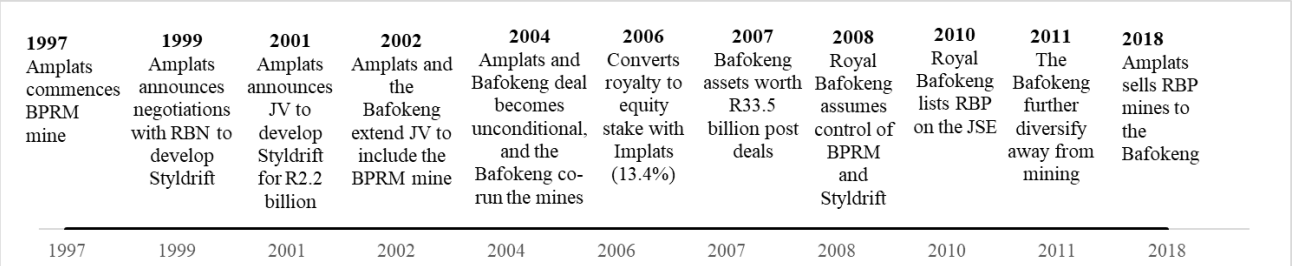
10.3. The Royal Bafokeng BRP mine platinum deal

The deal concerns the Bafokeng Rasimone Platinum Mine (BRPM), and Styldrift mine, in North West

Summary of the BRPM deal

The arbitration process described in Chapter 11 supported the settlement of the matter in the form of a joint venture deal between Amplats and the Bafokeng. From the perspective of the hypothesis, this was likely an outcome of two patient partners coming into agreement on long-term projects that would establish certainty by sharing the risks, the work, and the returns of mining in the Bafokeng area. The deal materialised into two projects that were eventually merged. The first project was the Rasimone Platinum Mine (BRP mine) where the Bafokeng would get a share of the returns generated by the mine. The second project was the Styldrift project, a brownfield opportunity to extend the BRP mine (life of mine to 2062) (Amplats, 2010). The two areas were combined under a 50/50 joint venture, where both partners would co-manage the mine.

Tracing the BRP mine deal



Sources: Amplats annual reports

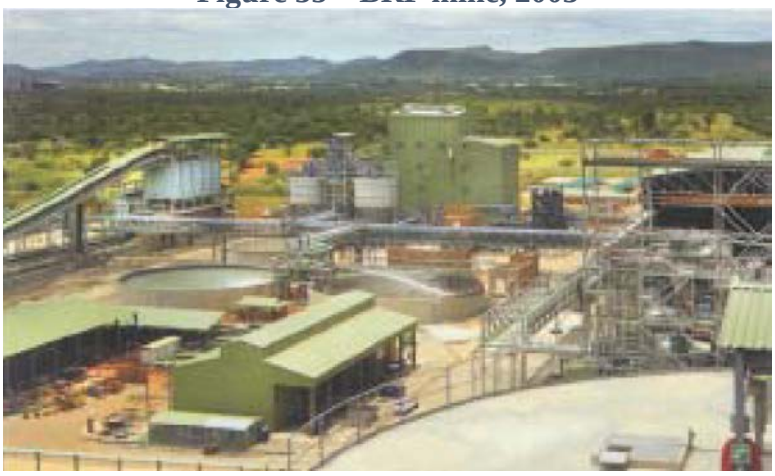
Pre-deal period (1997-2003). An early success in investment

In 1997 Amplats announced a new mine in the Bafokeng land at an initial capex of R900 million in 1997 money terms. The mine was named the BRP mine.[152] In 1998 Amplats expected the BRP mine to commence production in 2000 and reach full production in 2002. In 1999 over R700 million was invested in the mine, including towards building a concentrator. In 2000, Amplats reported extensive progress in developing the mine. Estimated capital expenditure was revised to R1.2 billion with a complement of 2800 employees. In 2001, Amplats announced a 50/50 joint venture with the Royal Bafokeng to develop the Styldrift ground, neighbouring the BRP mine. The partners jointly owned farms in the area. The project would take five years, costing R2.662 billion in 2001 money terms. This deal followed extensive discussions between the two partners. The discussions came after the Royal Bafokeng had won their court battles with Implats

In 2002, the BRP mine began producing, adding R433.9 million to Amplats' operating profits (See Figure **35**39 below). In 2003, substantial capital expenditure continued to be sunk, all invested in mine expansion. Amplats announced it would declare the BRP mine a steady state mine in 2004. In the same year (2003), Amplats announced that the initial deal on Styldrift with the Bafokeng would convert into a collective deal including the BRP mine, on a 50/50 joint venture deal.

[152] The opportunity was incredible. A head grade of 6.1g/t, double what would already be considered a good grade.

Figure 35 – BRP mine, 2003



Source: Amplats annual report 2003

Firm deal period (2004 – 2018)

The Bafokeng-Amplats joint venture became operational in March 2004. Amplats effectively transferred 50 per cent of the BRP mine to the Bafokeng, in exchange for certain mineral rights (Amplats, 2005c: 168). In the same year, the BPR mine reached steady state. Between 2004 and 2006, Amplats and the Royal Bafokeng ramped up investment in expanding the BRP mine and Styldrift project. This coincided with significant increase in production at the mining complex. In 2006, the mine expansion focused on Phase 2 expansion of the BPR mine. The project was expected to be completed in 2011. The feasibility study for the Styldrift project began as scheduled in 2006. The mining rights application was submitted with the hope of ministerial approval during the third quarter of 2007. Project execution would then begin in early 2008.

Table 29 – Key projects at the Royal Bafokeng mine between 2005 and 2012

Announced date	Project name	Announced value (R million)	Estimated completion date	Project Status
Aug-05	BPRM Expansion Project	1,200	Dec-09	Complete
Oct-08	Styldrift 1 expansion project	7,500	Mar-19	Complete
Jun-11	North shaft chairlift	110	Mar-15	Complete
Jun-12	Bafokeng Rasimone North Shaft Phase 3	11,010	Aug-17	Underway as at 2017

Source: Nedbank (2017)

In October 2008, Amplats and Royal Bafokeng Holdings (RBH), the investment arm of the Royal Bafokeng, agreed to restructure their BRP mine joint venture with the Bafokeng managing and assuming control of the mine. The new company, RBP, would hold a 67 per cent

interest in the joint venture. During the same year, the Bafokeng-Amplats partnership further increased investment in 2007 by over 46 per cent compared to 2007. Amplats cited that the investment was funding the BRP mine Phase 2 expansion, as well as the Styldrift project, which had concluded its feasibility studies and was said to require an initial project capital of approximately R10.3 billion (Amplats, 2008a).

In December 2009, the restructuring of the BRP joint venture was concluded, clearing the way for the Bafokeng to list on the JSE and take full control of the mining operations. RBP was successfully listed on the JSE in November 2010, making the Bafokeng the first platinum mining community to have a listed, producing company.

In terms of the site work on the Styldrift project, the work began in March 2009, to be completed in 2017. In 2010, the Styldrift vertical shaft was successfully sunk. During the same year, the joint venture approved Phase 3 of the BRP mine project, which meant deepening the mine and extending its life-of-mine by 8 years.

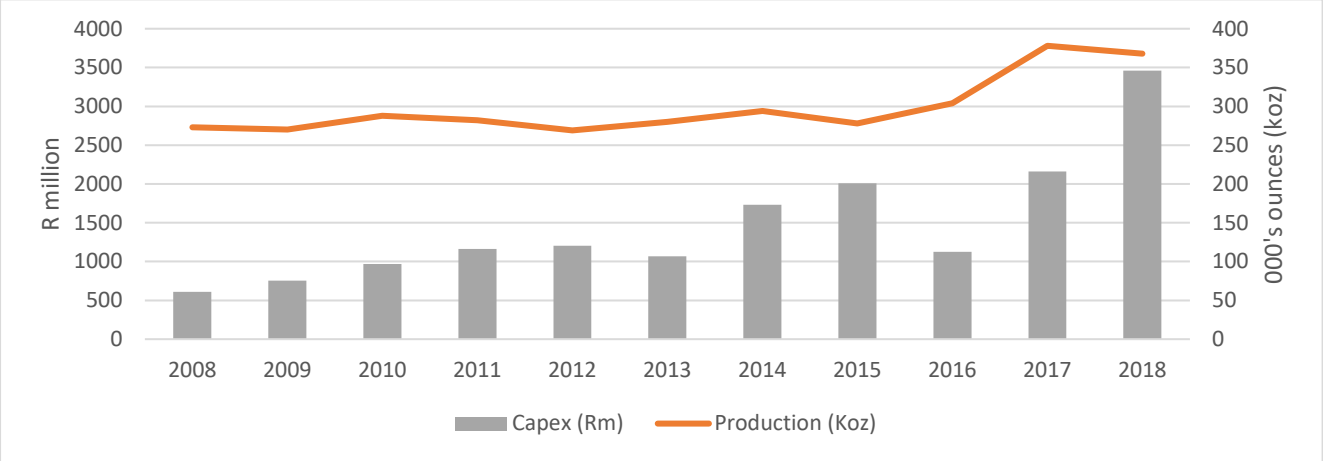
Between 2011 and 2015, the joint venture managed to complete the BRP mine phase 2 and phase 3 and make significant progress in the Styldrift project. During a very challenging time of protracted platinum protests, the BRP mine managed to secure wage settlements with unions that kept the projects going.

In July 2018, Amplats accepted an offer from Royal Bafokeng to buy its 33 per cent in the BRP mine. The transaction was concluded in November 2018, making the Royal Bafokeng a fully independent company.[153]

[153] In 2021, in an aggressive competition between Implats and Northam, the two companies bid for RBP, and took over control of the company, paying a very high premium for the company (McKay, 2021b).

Conclusion – How does the deal fare in light of the hypothesis?

Figure 36 – The production and capital investment trends in the Royal Bafokeng Platinum, 2008 – 2018



Source: RBP annual reports, 2008-2018

Table 30 shows the production and capital investment performance of the Royal Bafokeng mine. From the year the RBP company was officially founded, it is evident that the mine was performing at full capacity, which it was able to maintain, and even increase, when the Bafokeng took full control over the mine. In terms of capital investment, the graph shows the Bafokeng's share of the capital investment, which continues to increase over the years, though these are likely nominal figures.

Table 30 – The capital investment performance of the Amplats-Bafokeng deal

Asset	**Intended/announced investment (+year)**	Actual investment 1994-2001	Actual Investment 2002-2007	Royal Bafokeng becomes independent producer	Actual Investment 2008-2014	Actual Investment 2015-2018	Total
BPRM	1996. Initial 1.2 billion	R1.46 billion	R1.283 (Amplats portion)		Phase 2 expansion of BPRM begins (Amplats, 2007). **R6.608 billion** (Amplats portion) **Plus R6.772 billion** (RBP portion)	R5.295 billion (Amplats portion) R8.335 billion (RBP portion)	Positive, healthy subsequent investment even in real money terms. Amplats' share amounted to R8 billion between 1997 and 2018.
Styldrift	**2001**. R2.243 billion initial. **2008**. R7.6 billion in 2008 money terms in order to reach steady state. Steady state in 2015 (Amplats, 2008b). Completion revised to 2019.	n/a	R2.7 billion (as intended, initial project completed)				
Tier	**First Tier investment, transformative**						

Source: Amplats annual reports and RBP annual reports

It is evident from ***Table 30*** that the joint venture between Amplats and the Bafokeng maintained high subsequent investment, buttressed by a good partnership. The RBP went on to become a fully independent operating miner, during the period under study. Like Motsepe's African Rainbow Minerals, the Royal Bafokeng case study is one of multiple rounds of investment (First tier) and a thriving productive BEE enterprise.

10.4. The Bakgatla-Ba-Kgafela Union platinum deal

Summary of the Union mine deal

The story of the Bakgatla-Amplats deal demonstrates the effectiveness of the rule of law in South Africa in providing a way into rent-sharing with mining incumbents that mine on land the community had -bought and owned. This is not a case of traditional communal property, but rather property that was purchased. The story also stands in contrast to the Bafokeng story related in the preceding section. Amplats is the common denominator in the deals explored between the two communities, but it becomes apparent that Amplats responds differently to the two communities, from a deals perspective. First, while the Bakgatla won their case in court to gain better royalties from Amplats' Union mine, Amplats delayed exploring a joint venture with the community until 2006, while the I-firm was very willing to explore a deal with the Bafokeng much earlier. Second, even when a deal was online, despite multiple opportunities for the Bakgatla leadership to capitalise on the deal in "the Bafokeng way", this did not happen. Instead, up until the end of the study period, the Bakgatla did not manage to get their act together. Finally, the internal divisions within the Bakgatla did not discourage Amplats' investment in the Union mine. The proposition is that the sum of all Amplats' deals provided the credible commitment to insulate the Union mine as well.

1. Pre-deal Union mine (1995-2005)

By the time Amplats was formed in 1995, the Union mine was already in the company's portfolio and well established, employing 6000 people annually. The changes brought by the court processes documented in Chapter 11 between the Bakgatla and Amplats did not deter the investment appetite that Amplats had for the Union mine. Amplats was operating the mine on a 100 per cent ownership basis. From the hypothesis perspective, was there a risk of expropriation to deter Amplats from investing? The answer would be no, because the Union mine fell under two deals during the 1995-2005 period. The first was not so much a deal, but rather a settlement from the court process. There was a clear agreement about the royalty rate that Amplats would pay the Bakgatla for mining in their land. The second deal was the corporate-political deal with the DMR, that, as had been argued, bought space for Amplats to run some of its mines on a 100 per cent ownership basis. The Union mine was part of that protection.

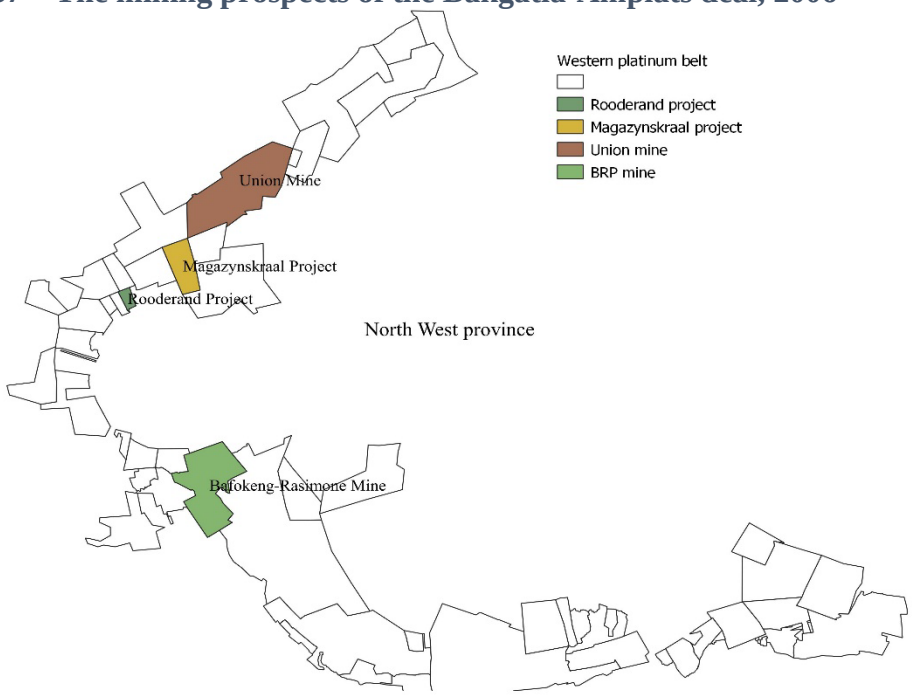
Between 1995 and 2005, Amplats reported sustained annual investment in the Union mine, of which a significant portion was dedicated to expansion. In total, Amplats spent about R2 billion on the mine during this period.

However, in July 2006, the DMR and Amplats undertook a joint review of Amplats' progress towards BEE ownership targets – as mentioned before. This was part of the process that would inform the DMR's decision relating to the conversion of Amplats' old-order rights to new-order rights. It appears that of the gaps identified, Amplats saw an opportunity to explore a more concrete deal with the Bakgatla on the Union mine. This deal is traced in the section that follows.

2. Deal period: 2006-2018

Shortly after the review meeting with the DMR in 2006, Amplats ramped up its empowerment profile by bringing in the Bakgatla as a BEE partner in the Union mine, transferring 15 per cent of the mine in December 2006. In exchange, Amplats converted the royalty agreement it had with the Bakgatla. Amplats would then buy the Bakgatla's 15 per cent share of the concentrate produced by the Union mine (Amplats, 2006). For this part of the deal, the Bakgatla were essentially a passive shareholder, in contrast to the Amplats-Bafokeng deal.

Figure 37 – The mining prospects of the Bakgatla-Amplats deal, 2006



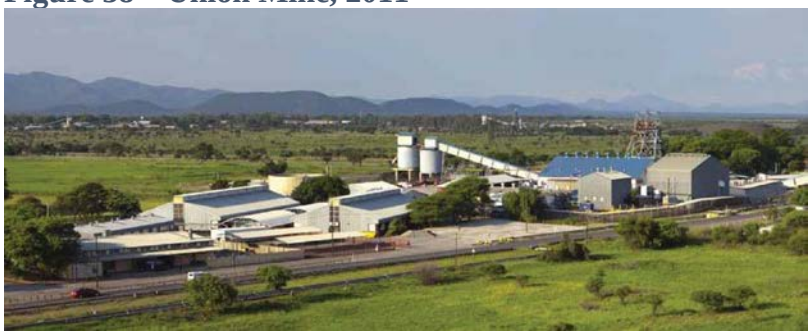
Source: Author, using QGIS software. Data from (Zientek et al., 2014).

However, Amplats extended two possible greenfield opportunities to the Bakgatla, with conditions that the Bakgatla do some of the heavy lifting. The opportunities pertained to two

prospecting properties in the Union mine area, Rooderand and Magazynskraal, shown in Figure 37 above. In relation to the Rooderand property, Amplats disposed of a 55 per cent interest in the mineral rights of Rooderand to the Bakgatla to explore opportunities for developing the area, claiming the Bakgatla were strategically well positioned to add value to Rooderand (Amplats, 2006). On the Magazynskraal property, Amplats and the Bakgatla entered into an exploration joint venture, with the Bakgatla taking an initial of 26 per cent. The agreement was that the Bakgatla (potentially with a suitably qualified partner) would procure funding for and completion of the necessary exploration and feasibility work in relation to developing the property. If the Bakgatla managed to conclude the feasibility work, the agreement was that they would have a majority stake in the asset. Amplats retained the right to increase its stake in the asset by contributing a disproportionate share of the development capital expenditure required (Amplats, 2006: 61). The comprehensive deal was accepted by the DMR, which helped with the conversion of 18 of Amplats' prospecting rights.

Between 2006 and 2011, Amplats continued with large annual investments in the Union mine (to be shown shortly), both for replacing declines as well as sinking new shafts, an expansion programme that was completed on time.[154] In 2011, the Union Mine was successfully restructured into the Union North and Union South mines, creating two mines under the Bakgatla joint venture. However, the Bakgatla made no progress on the prospecting opportunities related to Rooderand and Magazynskraal during the period under study.

Figure 38 – Union Mine, 2011



Source: Amplats annual report 2011

Between 2011 and 2015, Amplats further increased capital expenditure to fund "Phase 4" of the Union mine expansion plan, as well as improving overall operation of the mine. However, in 2016, given the deteriorating platinum prices, Amplats announced its restructuring plans to

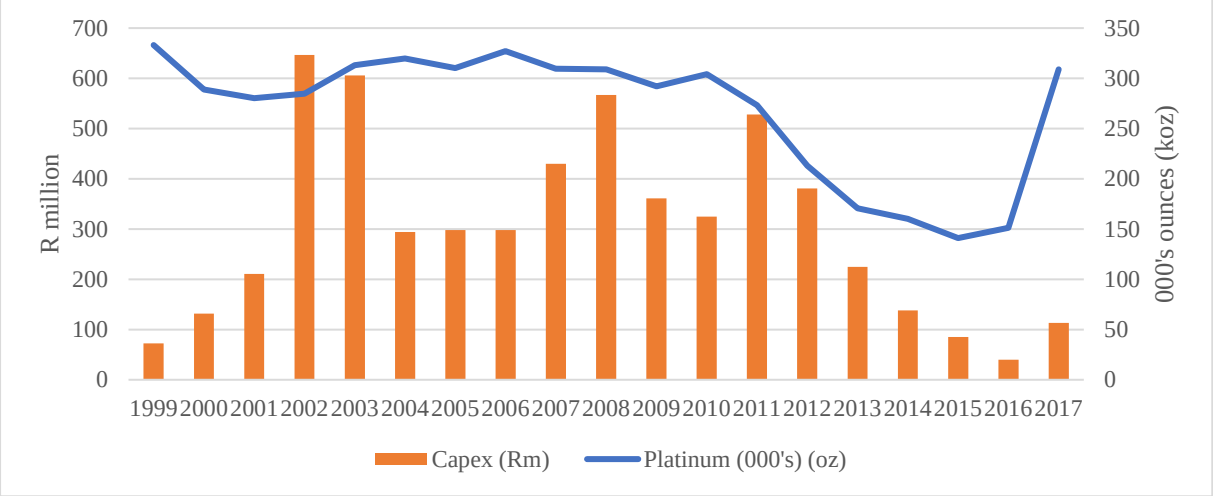
[154] Specifically, the project mainly related to extending 4B phase 3 and 4; South phase 3; and the three South phase 1 declines systems to access the UG2 reef horizon.

modernise and reposition itself by focusing on core long term assets. This entailed selling some of its assets, including the Union mine.[155] Amplats stopped expansion capital on Union mine.

Conclusion. How does the deal fare in light of the hypothesis?

The Bakgatla-Amplats deal adds value to this study in two important ways. First, it is difficult to conclude and sustain BEE deals that involve communities on the "Bafokeng model" which produce a thriving, independently owned company. These challenges mainly arise from contestations within the community, and leadership failures or opportunism. Therefore, turning royalty deals into active joint ventures is challenging, given how this PhD study defines transformation in relation to deals. Secondly, not all asset-level deals undertaken by an I-firm need to be as robust as the best deals in order for an I-firm to invest. The Union asset is clearly embedded in the suit of robust deals Amplats concluded. Thus, even when the Bakgatla partnership was an I-patient and E-opportunistic combination, Amplats could continue with healthy investment projects, while signalling commitment to the partnership via the prospecting venture, in addition to the Union mine co-ownership deal.

Figure 39 – Union mine platinum (000's ounces), 1999-2017



Source: Amplats annual reports, 1999-2017

[155] Other assets to be exited included Rustenburg, Pandora, Kroondal, and Bokoni. In relation to selling the Union mine, Amplats entered a deal with Siyanda Resources to acquire its 85 per cent of the mine. A binding sale and purchase agreement with Siyanda Resources was signed on 14 February 2017.

Table 31 – Intended versus actual capital investment expenditure on the Union mine

Asset	Intended/announced investment (+year)	Actual Investment 2001-2007	Actual Investment 2008-2014	Actual Investment 2015-2018	Total
Union mine	The deal transferred an already existing mine. The test is whether Amplats continued substantial investment into the asset post the deal	R2,783.7 million	R2,525 million	R238 million	Large subsequent investment until 2014. Amplats invested c.R5,546.7 million between 2001 and 2018
Tier	**Second Tier investment**				

Figure 39 shows the overall trend of the capital investment and production of the Union mine between 1999 and 2017. Amplats maintained modest subsequent investment in the Union mine, which supported the productivity of the mine. Table 31 groups the chunks of subsequent investment into three periods between 2001 and 2018. This shows a relatively healthy subsequent investment performance – at least until 2014.

Taking this overall trajectory, the Bakgatla-Amplats deal is Second Tier investment, with modest subsequent investment. Unfortunately, the transformation aspect remained complicated by community dynamics arguably outside the control of any I-firm. Overall, the Bakgatla case provides a helpful comparative case in the study of deals and investment with communities as BEE partners.

10.5. Conclusion

This chapter has highlighted the role of deals with communities as BEE partners. This is an important feature, and a unique one, in the BEE story in the platinum belt of South Africa where communities had a window of opportunity to purchase and own land. The case study has found, at least in the I-patient world, that deals with land-owning communities can thrive in terms of investment and transformation. The hypothesis has been central in researching and interpreting these cases. Chapters 11 and 14 will reflect in more detail on the role of communities in the story of BEE.

SECTION E – Discussing the findings so far

CHAPTER 11 Firm level (micro and nano level) paths to transformation and investment. From BEE rules to "productive transformation"

Abstract

This chapter discusses the findings in Part I of the PhD, in relation to what we learn about BEE, deals, and investment. In other words, the chapter reflects on the hypothesis that good deals, rather than rules, bring and sustain capital investment. Chapter 14 will provide the overall conclusion, reflecting on the overarching research question of reconciling racial class transformation with investment growth. Chapter 14 will include conclusions stemming from findings in Part II of the PhD.

Résumé

Ce chapitre examine les résultats de la première partie du doctorat, en relation avec ce que nous apprenons sur le BEE, les transactions et l'investissement. En d'autres termes, le chapitre réfléchit à l'hypothèse selon laquelle les bonnes affaires, plutôt que les règles, apportent et soutiennent l'investissement en capital. Le chapitre 14 fournira la conclusion générale, en réfléchissant à la question de recherche primordiale qui consiste à concilier la transformation de la classe raciale et la croissance des investissements. Le chapitre 14 comprendra les conclusions découlant des résultats de la deuxième partie de la thèse.

Introduction

The argument in this chapter is structured around three firm/deal level findings and two country/sectoral level findings arising from the BEE game of transformation. The first is that "good deals" are key to investment. Good deals are achieved when patient incumbent capital and patient BEE capital partner with one another. The second is that the rule of law matters, but there remains residual uncertainty which can be resolved not by more rules (so as to "complete the contract"), but by good cooperative deals around productivity. Third, good deals get the law, the economics, and the politics right. At the country and sectoral level, the argument is structured around two important findings. First, the ethos of cooperation trumps a pre-occupation with rules as the means. Second, transformation with productivity – "productive transformation" – is a superior, win-win developmental strategy.

11.1. Firm/deal level findings and discussion

11.1.1. "Patient capital" and "good deals" account for the large majority of investment in platinum

Section A argued *why* investment matters. The case studies in Sections B to D showed *how* investment happens and how failures in investment happen. Investment was an undertaking of productively inclined firms:

a. Amplats, as a patient I-firm, made large, fixed investments in mines, contrary to the "South Africa missed the mining boom" observation. This was the case for Amplats despite the company also having "bad" deals that failed. Anglo exemplifies a large, influential firm that engaged with political power in a transformative, investment-compatible manner, while championing productive deals with BEE partners.[156] Lonmin, on the other hand, played a short-sighted game that supported its extractive rather than investment-driven corporate strategy. It is a strategy that was sufficient for managing expropriation risk, but inherently vulnerable.

Table 32 – Adding up capital expenditure of Amplats, Lonmin, and BEE deals, 1994-2018

	1994-2000 (Rm)	2001-2007 (Rm)	2008-2014 (Rm)	2015-2018 (Rm)	**Total incumbent investment** (Rm)
Patient capital: Amplats (100% owned assets)	**9,304.2**	43,427.3	61,492	20,802	135,025.5
Amplats + ARM, RBP, Xstrata, Aquarius	n/a	3,877.6	2,839	4,349	11,065.6
Opportunistic capital: Lonmin (100% owned assets)	10,563.2	10,245.3	15,649.13	5,344.1	41,801.73
Lonmin + Incwala, Shanduka, Boynton; Pelawan, Khumama, Mvelaphanda, Bakgatla ba Kgafela	n/a	4,598.58	4,869	R304	9,771.58
Total investment	19,867.4	62,148.78	84,849.13	30,799.1	**197,664.41**

Source Author. Note: These figures are taken from the asset level case studies in the PhD.

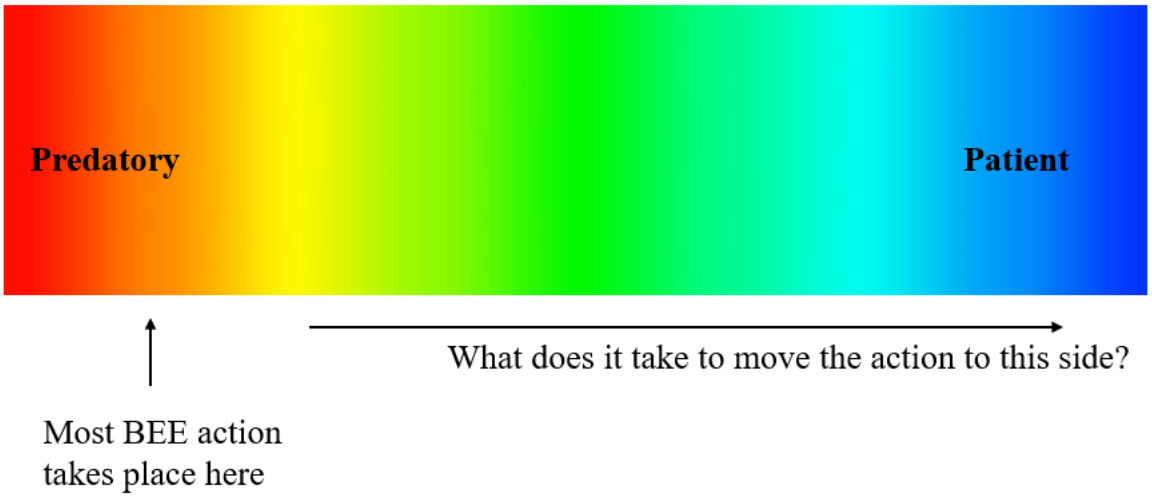
Table 32 above adds up the capital investment presented in the case studies. The table shows two important points. Patient capital, including BEE related projects, explains much of the capital investment in the mining sector over the two and a half decades covered by the study.

[156] Simply because there is a high-quality ore body does not mean investment will follow. Investment depends on credible commitment/expectations of the future. The case of Lonmin, with excellent ore bodies, demonstrates this point.

Second, even when considering the opportunistic BEE deals, most of the investment is carried out by Amplats, in relation to Pelawan, Mvelaphanda, Khumama, and the Bakgatla ba Kgafela community. (A limitation of the table is that it does not control for differences in absolute size between Amplats and Lonmin. The discussion will shortly provide more comparisons that control for size differences.

b. The orientation of the firm matters. For I-firms that are in for the long haul, the challenge is to strike deals which are robust over time – capable of providing reliable (and sufficiently influential) partnerships, even as who is "in" and who is "out" within the ruling political party changes over time. By hypothesis, the strength of E-patient partners is that, even as they bring sufficient influence, they are sufficiently "independent" of politics in their identities and so can provide the requisite credible commitment over the long haul. (When both or all partners exemplify "patient capital" the result is a good deal).

Figure 40 – The capital spectrum



Source: Author. Note that this is a summarising representation of the capital spectrum presented in Chapter 2.

Figure 40 shows an alternative way of representing the capital spectrum. The disproportionate failure to successfully transform the ownership of the private sector and simultaneously grow capital investment is partly the result of a predatory corporate strategy. Placing the Amplats and the Lonmin cases side by side, the fall of Lonmin is a case of a predatory corporate strategy and its consequences.[157] This corporate strategy often "window dresses" itself as developmental

[157] The Marikana massacre did not cause this failure. The case study traced the process of the Lonmin corporate strategy, showing consistently opportunistic behaviour. The Marikana massacre is part of the outcome of Lonmin's behaviour, rather than an exogenous cause of its ultimate fall.

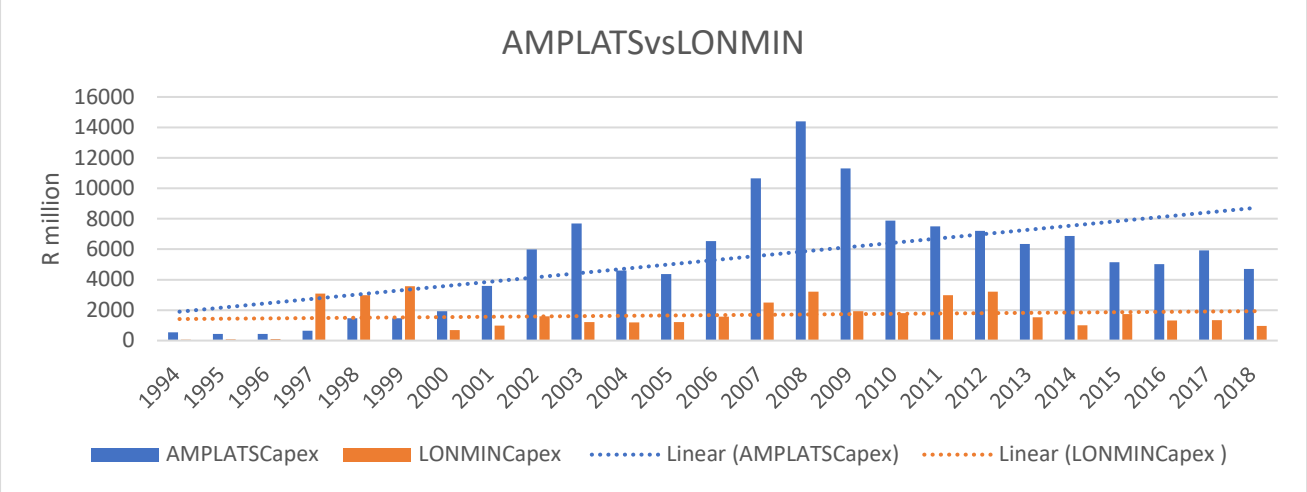
or transformational and has strong collusive deals with predatory actors within the state, keeping real accountability or scrutiny at bay. By contrast, patient corporate strategy embeds itself in a developmentally oriented vision of the country's political economy, and cooperates with political champions of that vision. Not only does the latter translate into a firm's ability to endogenise developmental political economy dynamics, it also translates into a firm that actively participates in fostering positive corporate citizenship. Anglo exemplifies this type of firm by its response to unionisation in the 1980s, when faced with BEE in the 1990s, and when faced with court cases by communities (See Section D).[158]

The following analysis places Amplats and Lonmin side by side to surface a comparative perspective at the investment level.

11.1.2. Comparative capital expenditure trends, Amplats and Lonmin

Since Amplats was the biggest platinum producer between 1994 and 2018, it would not be surprising to observe (as Figure 2 shows) larger year-on-year investments by the company, relative to the third biggest producer, Lonmin. What is also evident in the figure, however, is that Amplats has a largely upward trajectory of nominal fixed investment, while Lonmin does not.[159]

Figure 41 – AMPLATS & LONMIN absolute annual fixed investment* (nominal), 1994-2018



Source: Company annual reports

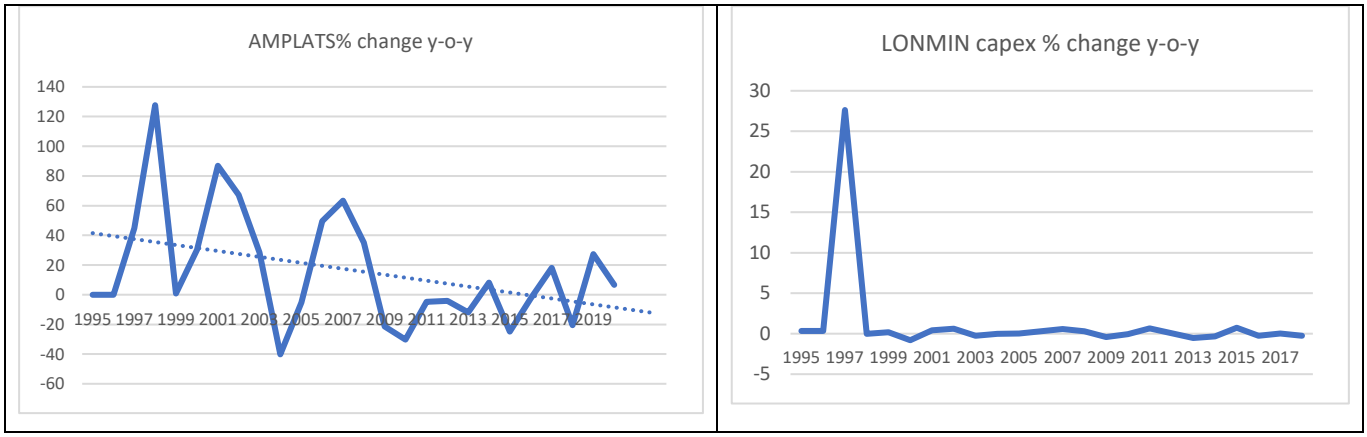
[158] Anglo is not a saint of a company. It also functions in ways that foster crony capitalism, and these have their negative ends (Nxele, 2022). The current empirical study examines a spectrum. To place something on a spectrum, one asks the question: "To what extent or to what degree…". The answer begins with the clause: "The firm is patient or predatory to the degree that…".

[159] One can provide a clear comparative picture by using the correct denominator: company investment relative to its size. This is shown in Figure 43.

*Note: Fixed investment is defined as capital expenditure on mining assets, mining projects for expansion and for renewals and replacements

An alternative way to present the investment performance of the two companies is year-on-year annual changes in fixed investment.

Figure 42 – Amplats and Lonmin: Percentage change in fixed investment, year on year, 1995 to 2018

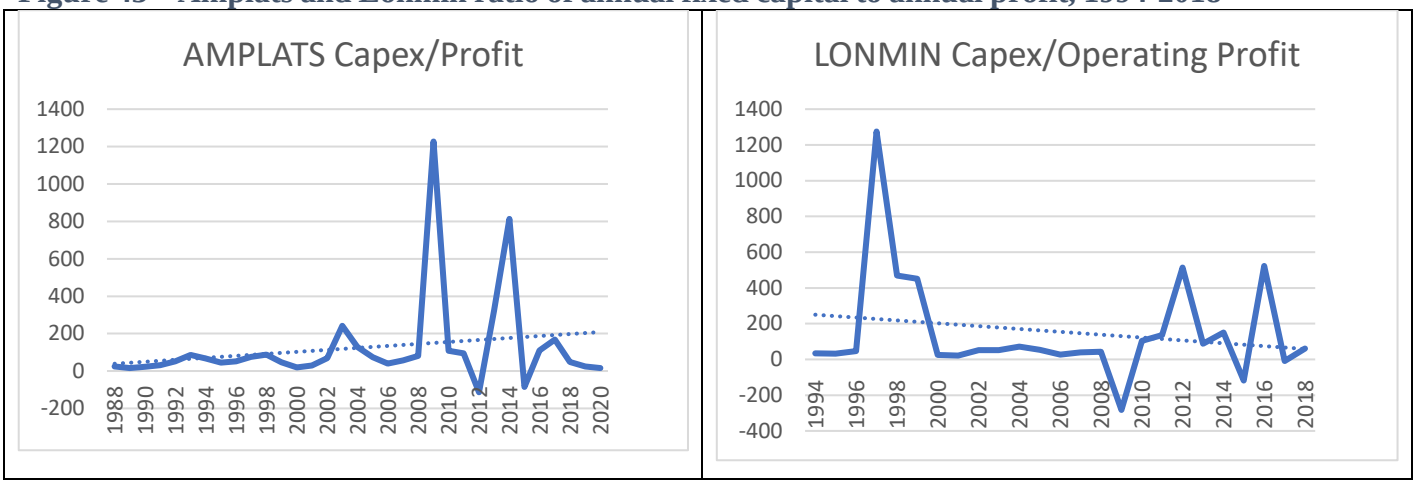


Source: Company annual reports

Figure 42 above shows the rate of change of investment over time. It shows net positive fixed investment by Amplats even during the period of uncertainty in the 2000s. Importantly, it is evident that Amplats was sinking large tranches of subsequent investment. This was, even controlling for absolute differences in the size of investment, not the case with Lonmin. Per the hypothesis, opportunistic capital might indeed contribute large initial investment, but subsequent investment will be low due to opportunism and the instability of opportunistic deals.

A final way to compare the two cases of patient I-firm versus opportunistic I-firm is to compare the reinvestment rate over time as a percentage of profits of the two companies. This shows appetite for investment by calculating how much a firm reinvests its profits into the business's capital expenditure.

Figure 43 – Amplats and Lonmin ratio of annual fixed capital to annual profit, 1994-2018



Source: Company annual reports

Figure 43 above shows that Lonmin spent the entire 2000s reinvesting very little of its profits into production. Its attempts to ramp up investment post the Marikana massacre (See Chapter 7 and 8) failed to resuscitate the company. By contrast, on average Amplats progressively increased its profit re-investment rate, correlating with its expansion strategy during the 2000 to 2014 period, before the fall in profits post 2014 associated with the falling commodity prices. Between 2000 and 2018, Amplats invested twice as large a share of annual profit back into production, while keeping debts low. On balance, the numbers support the proposition that patient capital is able to sustain investments.

Looking beyond 2018, Amplats announced an increase in its total investment commitment in the country to R100 billion to 2025. This is an increase of R15 billion over its previous commitment to invest in sustaining or expanding its South African operations, as well as implementing green technologies. Amplats' investments in green technologies includes initiatives like developing a world-first hydrogen-powered fuel cell mine haul truck at the Mogalakwena mine (Hall, 2021).

11.1.3. Rule of law matters, and institutions matter, but even in relatively developed countries, there is residual uncertainty that gives scope for strategic interaction.

How far can relatively strong impersonal institutions/bureaucracy take us? North (1990) identified that a set of rules of the game provided by institutions still leaves considerable scope for strategic interaction between agents. This PhD has argued that this strategic interaction, in the case of elite class transformation in mining, is essentially deals between the economic leadership and the political leadership. The deals are strategic in so far as they manage the

expropriation risk that persists because of the residual uncertainty resulting from “incomplete contracts”.

The legal, rules-based BEE framework was meant to push firm behaviour towards a transformative direction. What the rules could not do was constrain the predatory actions of elites, politicians, and other powerful groups. This remained part of the uncertainty of the programme, as seen in the research study. In fact, BEE has been a poor institution. Rather than generating a stable and predictable environment, it became a source of conflict and unpredictability in the economy. This uncertainty has been significant enough to stall the process of capital investment formation, locking the country into a low investment trap. Building credible commitment into the BEE process emerges as a way of reducing this uncertainty, at least in part.

11.1.4. Good deals get the law, the economics, and the politics right

The study has shown that the features of a good deal are “above ruling party factional battles”. Instead of colluding with a particular faction, patient capital relies on creating corporate level deals that demonstrate cooperation with the ruling party’s objectives. As Amplats illustrates, this buffered the firm from the fragilities of competing interests and increasing fragmentation with the ANC and within organised black business.

After the lessons of Anglo in the earlier periods, at the asset level Amplats sought to engage with partners that had skilfully positioned themselves to avoid being caught up in factions. Crafting co-producing joint ventures aligned a set of black partners’ interests with that of Amplats. The operational role of BEE partners in the deals demonstrated the cumulative operational capability of Royal Bafokeng Platinum and African Rainbow Minerals, with both becoming independent producers that continue to thrive.

The patient-type asset level deals suggest a resolution of South Africa’s long-standing “once empowered, always empowered” debate, mentioned in Chapter 1. The debate pertains mainly to incumbent firms that have sought assurance that once they have met BEE ownership targets, they would not be required to “re-empower” their companies should BEE partners sell their stakes. The case of productive asset level deals suggests that the implications of this debate have been exaggerated or mistaken. If the law is ambiguous, then the best way for shaft-sinking big capital to avoid its risks is to strike a deal with a shaft-sinking BEE capital partner, provided

that the deal includes a binding commitment to a long-term partner relationship. The features of such deals, as detailed in the study, are as follows:

i. Long-termism: Operational level ownership and involvement provides a natural lock-in "empowered for life". In practice, such deals approximate "once empowered, always empowered" because they reduce the incentive and the possibility of BEE partners cashing out.

ii. Tangible BEE vehicle: the beneficiaries become proper businesses in their own right, able to raise capital to invest, grow, and become independent. Creating black operational mining companies give the "BEE entrepreneur" access to reserves, smelting and refining capacity, technical expertise, and prevents dilution of existing shareholders.

iii. Path to building new industrialists: the deals demonstrate a path to building new industrial capabilities rather than new tradable claims in the existing economic base.

iv. Credible commitment: the asset level deals become pockets of credible commitment that are supported by the relatively robust rule of law.

If "once empowered, always empowered" were enshrined in law, as it eventually was in 2021, then the incentive for "big capital" to strike deals along the lines of the above would be removed.

The alternative is a weaker form of deals, a form which characterises the failures of BEE. Features characterising some of these deals are as follows:

i. "Fronting": a Lonmin type "window dressing" where black partners are co-opted into deals but are not substantively involved in the business. Such deals might be good enough to produce some investment, but they do not produce productive black companies.

ii. Highly leveraged deals: these are often equity transfers to BEE partners, where repayment hinges on volatile equity market returns. The result is unstable deals, characterised by lacklustre fixed investment.

iii. Equity-based deals: these kinds of deals often create an incentive for market timing behaviour. Therefore, these deals are fragile deals.[160]

[160] Exiting investments is a key means through which most BEE beneficiaries translate ownership into income.

Therefore, two and a half decades of BEE deals provide lessons about the types of deals that lead to success in the developmental direction. At the deal level, partnerships among patient firms (both incumbent and BEE) provide a basis for reconciling elite transformation with capital investment accumulation.

11.2. Country and sector level implications. The ethos of productivity and the role of deals as a cooperative mechanism in facilitating investment

11.2.1. The ethos of cooperation

In the quest for profit and tenure, the ethos behind the patient capital approach to deals was cooperation and productivity. The cooperative deals were crafted ("counter-culturally") in an environment where there was disproportionate rule-boundedness and a failure to cultivate stronger inter-elite developmental cohesion. There was limited embrace of proactive, productivity-oriented, hybrid rules/deals initiatives – both flexibility and champions were missing – and thus there was greater vulnerability to larger political winds of change (e.g., state capture). Increasingly, rules made it possible to create empty shells – "isomorphic mimicry" – while the value of a triumphalist "good governance" narrative was generally overstated.

Good deals by patient capital thus emerged in an environment where the large-scale business establishment generally was not championing economic transformation. Instead, large scale business in South Africa was pre-occupied with free capital flows and offshoring, with very little interest in pro-active, productivity-enhancing initiatives. Indeed, the established business community (and those broadly within its orbit in media, academic, and policy circles) generally framed the economic discourse around a narrow pre-occupation with growth via an improving business environment. Beneath the radar of the discourse, cooperation between capital and political elites increasingly became a deal-level phenomenon, rather than a country-wide reality.

What is to be done? The deal level lessons are instructive for building a sectoral and a country level ethos of cooperation – where cooperation is a positive sum game. The case study lessons show what not to do:

i. Not the Pelawan story: government cannot force bad partners into productive deals, and expect a successful story of investment and transformation

ii. Not to simply block productive black entrepreneurs from future productive deals – the ARM story: the case of the government instructing Amplats to avoid entering into further deals with ARM was not a helpful approach. Instead, investment opportunities were lost by coercing Amplats to work with opportunistic partners.

iii. Not to rely on a "political connections strategy": this crowds out genuinely patient BEE partners, who are denied opportunities because the state works with and for its own insiders

The following are the "big D" deals that could move capital investment to a higher level:

i. **State-business relations**: a positive path depends on renewed inter-elite consensus on a "next generation" pathway which offers renewed promise for inclusive development
   - Champion local/sectoral/cluster economic development, with multistakeholder coalitions
   - Welcome renewed efforts at enhanced and flexible business-government co-operation around shared purpose (weak inter-elite cohesion is unlikely to provide a sustainable development platform). A narrow pre-occupation with growth via improving business environment does not address the problem of credible commitment nor of cooperation

ii. **Business-trade unions relations (for post-doctoral research)**: this is the missing deal in South Africa. The trade union-liberation movement alliance of a democratic revolution is an outdated model that worked during opposition to Apartheid because of the common enemy of a domineering, exploitative and collusive private sector. That was the means to dismantle an undemocratic regime. Once that happened, the partnership became an anachronism.

Labour absorption is ultimately a function of corporate strategy. What is needed is transformation of industrial expansion in a labour absorbing direction, which business and labour can implement through cooperation. A new kind of pact between business and labour can give a mandate to government to support such a path. Cooperation involves sharing the upside and the downside. If labour were to benefit from higher revenues and profits in the manner of shareholders, their interests would align with business. This is a fundamental shift, different from employee share ownership

schemes, that enables labour to become a crucial partner in driving investment strategy. Given such a partnership, labour can drive the process of incentivising investment, for instance, by initially taking below equilibrium wages, while taking part of the upside of business through revenue and investment growth.

In South Africa there has been little effort to imagine unions as a dynamic part of the future. Almost every capitalist funded development such as technology and green development is conceived as a threat to labour. However, what is possible is the transformation of labour unions. Unions require a certain theory, thought and practice that is cooperative, with the goal of growing employment through expanding investment and productivity. The simple theory of high wages as outcome, and protests and violence as the means, and the private sector as the enemy, is outdated. There is a superior way: building partnerships that collaborate their way into investment and employment.

iii. **In the case of mining: Business-community cooperation**.

An important feature of mining is that minerals are location specific. In the South African case, almost all of mining activity happens in poor areas, as will be shown in Part II. Mining communities have largely been left behind in the crony, elitist accumulation process of BEE in mining. Since the 2010s, however, there has been a collective response by mining communities and mine workers to disrupt operations through protracted wage strikes and blocking of roads to mines. Mining communities are using these potent actions to demand inclusion in the economic benefits of local mining operations. Through these actions, communities control what literature and Amplats refer to as the "social licence to operate", contrasting this to the government-imposed "regulatory licence" required to access mineral rights. "Social licence" refers to the power that labour and communities have to secure the operating environment on the basis of sharing in the economic benefits of mining activity (Nxele, 2022).

There are different forms of land ownerships in the mining areas. In most cases, either communities own the land where mining happens, such as the Royal Bafokeng, or the land is communally owned but in practice decisions of allocation are taken by the tribal chief or leadership, or the land is owned by the government through a municipality. Notwithstanding these forms of ownership, mining companies that cooperate with communities to ensure that the latter receive local mining related benefits are more

likely to transform the presence of mining from enclave to inclusive economic activity, reversing the “resource curse” at the local level (Nxele, 2015).

For communities that own land, the case studies of the Royal Bafokeng and the Bakgatla ba Kgafela demonstrated how mining capital can work with community-owned mining firms to participate directly in the ownership and production process. This is not always straightforward because of the complexity inherent in organising communities into a single body with farsighted leadership. However, even in imperfectly unified communities, the case of the Bakgatla working with Amplats shows that there are investment-compatible opportunities that can secure the operating environment by ensuring the community has a stake in the operations.

Beyond ownership deals, there are opportunities to foster inclusive mining operations through targeted efforts to localise specific part of the mining value chain. Such an approach can transform mining communities by building sustainable livelihoods through economic participation (See Nxele 2016 for a detailed discussion of developing local economic linkages in mining communities).

11.2.2. The ethos of productivity

Productive transformation moves the action to the patient side of the spectrum

Historically, the logic of BEE has been narrow, because it has focused only on transformation while assuming investment growth will accompany the process. The rules made it legally binding to include historically disadvantaged individuals, but politically and empirically, these “historically disadvantaged individuals” were overwhelmingly the politically connected elite. The law did not (and cannot) make it legally binding to be productive, nor did the accompanying policies such as the mining charters provide incentives to encourage investments and productivity. In other words, the rules failed to induce productive behaviour, and they equally failed to discourage predatory behaviour. Empirically, this study has shown that to the question “how does capital investment happen?”, the answer is that productively inclined firms invest because their corporate culture depends on generating profits through continuous capital investment rather than rent seeking, speculation, or asset sweating. While all mining firms faced the problem of expropriation, patient capital resolved the credible commitment problem through cooperative, productive deals. The two-level deals mastered the politics, the law, and the bottom line of profit.

Therefore, transformation with productivity is the trumping political strategy. Facilitating conditions of "transforductivity" (country to firm level) yields the following:

- Creates a positive sum game around capital investment (productive economic activity). The logic of "getting from here to there" becomes rooted in productive economic activity. A productivity-focused country aligns policies towards productivity. The study has shown that "productive" need not mean "anti-transformative" or vice-versa.
- Productive economic activity (and ethos) grows the economy, which in turn makes it possible to steer the economy in a labour absorbing direction. In other words, productivity creates jobs and sustainable tax revenues
- A productivity-focused country is also one that values property rights because that is the basis of driving productivity and investment

11.3. Conclusion: Updating the strategy to win the game

The case studies have addressed some of the following important questions relating to black empowerment deals and investments. Why were some investments in mining successful and transformative, and why were some investments not so successful? Why did some BEE deals take off, and why did others fail? What explains the variation in outcomes between the deals that managed to reconcile the pressures of BEE with investment and transformation, and those that failed to do so?

Part I of the PhD contributes by theorising on the causal mechanisms of successful deals and failed deals, in relation to investment and transformation outcomes. That deals are the basis of credible commitment – why and how – is an important contribution of this PhD. The study seeks to shift policy thinking from a pre-occupation with getting rules right, to a focus on creating conditions for good deals to thrive. This study contributes to closing the gap between rules and deals by offering a hypothesis that can guide a process of tracing causal mechanisms between deals and investment. It departs from the "more rules" approach thus far pursued in South Africa. The hypothesis of this study suggests that the way forward is not merely crafting more rules, but complementing South Africa's "good enough" legal framework by crafting an ethos that supports good deals.

Contrary to a narrow pre-occupation with rules as the means, the study has explored how a new business class emerges in post-Apartheid South Africa, and how these entrepreneurs are heterogenous and therefore follow divergent trajectories. The BEE policy does not envisage

these differences and importantly, does not envisage predatory opportunists as (1) real and (2) enemies to national development policy. Enemies to national development policy have always been seen outside of the ANC coalition, and perhaps even outside of those designated as historically disadvantaged. There is a need to update this understanding based on empirical evidence. The finding in this study is that good patient entrepreneurship is the path to BEE success, and there are successful case studies as well as cautionary case studies.

The path of patient capital is also a political win. The political elite could play a superior game if the strategy of building and maintaining power had in its foundation the game of building capability in the economy. The struggle for liberation – liberation politics – is no longer a winning strategy in South Africa. The next frontier of governance and power is understanding how to leverage broad-based partnerships to create wealth, how to create employment, because creating a dynamic, investment-compatible economy is the very foundation of building durable power both domestically, regionally, and globally. A political party that masters the idea of wealth creation and economic dynamism will win and grow. This is an ideational shift.

Finally, a helpful meaning of "transformation" is needed. There is a tangible difference between seeing the share of black-owned business registrations rise, versus creating black-owned productive businesses that grow the economy and drive inclusive economic participation. In other words, there is the isomorphic route to transformation that simply focuses on the numbers of black people represented in the commanding heights of the economy, or there is a focus on value-adding transformative presence. Failure to shift towards a definition of transformation that South Africa truly needs will maintain the status quo of rules, uncertainty, low investment, and shallow, isomorphic transformation.

PART II OF THE PHD. INDUSTRIAL MINING AND SOCIAL INVESTMENT IN MINING COMMUNITIES

To what extent do mining investments in Part I translate to social investment in local communities?

Part I explored the political economy of securing mining fixed investment in the platinum belt. Those investments are found in South Africa's poorest provinces. The impact of mining at local community level is a contentious issue, yet the evidence is vague. Though several qualitative studies mainly explore the negative impacts of mining on health, the environment, and the underhand deals between mining companies and local traditional authorities in these broadly rural areas, there exists no quantitative/empirical evidence on the impact of mining on local community livelihoods. This part of the PhD contributes statistical evidence using large-scale individual level census data merged with geocoded mining data for the period 1996 to 2011. By so doing, this project becomes the first empirical study to carefully estimate the impact of mining on local community poverty and employment. The study is representative because it isolates the mining provinces of South Africa, and with a sample of 20-million-person observations at ward level – small geographical units within municipalities – it can compare those living in mining areas with those living outside these areas. Part II, therefore, extends Part I by clearly identifying the distributional impacts of what begins as elite-level mining deals. This evidence helps to create the conditions for mining policy that is not only normative but is also based on empirical evidence.

Structure of Part II

Part II consists of two papers, noted as chapters. The first paper (Chapter 12) is an econometric study on the impact of industrial mining on local communities in the five major mining provinces in South Africa. The dependent variables are income poverty and employment. The second paper (Chapter 13) studies the effects of the policy of Separate Development that created homelands and the coincidental discovery of mineral resources in and around these homelands.

CHAPTER 12 – The economic impact of industrial mining investment on income poverty and employment in local communities in South Africa, 1996-2011

Abstract

This chapter examines the local economic impact of industrial mines on local communities in South Africa. The research concretely addresses this question by using a large, locally representative census sample of roughly 20 million observations across five major mining, poor provinces between 1996 and 2011: from the start of democracy to the peak of the commodity price boom and mining BEE deals. The dataset is merged with geocoded data of roughly 400 mines per year, along with world commodity prices. The main challenge of the study is to isolate the causal impact of mine expansion on local income poverty and employment outcomes. To achieve this, the study exploits three sources of variation. First, the commodity price boom; this captures the expansion of mining activity. Second, changes in distance to a nearest mine driven by openings or closures of mines; this serves as a source of heterogeneous exposure to mining activity. The third source of variation is the different geological commodity clusters, which have different localised linkages and therefore different net impacts. Given these sources of variations, the study explores different subsets of samples, such as restricting the data by province, by distance to mine, and by commodity type. The study is essentially a difference-in-differences procedure that uses the opening and closing of mines, as well as the price boom, as the treatment.

Generally, when a mine opens locally, the probability of an individual moving out of income poverty increases significantly. Similarly, the probability of gaining employment increases significantly. The commodity price boom is an important moment. It amplifies both the benefits and trade-offs of mining activity. Intensity of mining produces the same effect. Impacts differ by commodity, and by province. Platinum and gold are major drivers of poverty reduction and employment creation during price booms, with the Limpopo province exhibiting a lion's share of the impacts. The study worries about the short term gains of the price boom, and the long-term harmful effects of mining.

Résumé

Ce chapitre examine l'impact économique local des mines industrielles sur les communautés locales en Afrique du Sud. La recherche aborde concrètement cette question en utilisant un vaste échantillon de recensement localement représentatif d'environ 20 millions d'observations dans cinq grandes provinces minières pauvres entre 1996 et 2011 : du début de la démocratie jusqu'à l'apogée du boom des prix des matières premières et des accords BEE dans le secteur minier. L'ensemble de données est fusionné avec les données géocodées d'environ 400 mines par an, ainsi que les prix mondiaux des matières premières. Le principal défi de l'étude est d'isoler l'impact causal de l'expansion des mines sur la pauvreté des revenus locaux, l'inégalité des revenus et les résultats en matière d'emploi. Pour y parvenir, l'étude exploite trois sources de variation. Premièrement, l'explosion des prix des produits de base ; cela permet de saisir l'expansion de l'activité minière. Deuxièmement, les changements dans la distance à la mine la plus proche en raison de l'ouverture ou de la fermeture de mines ; ceci constitue une source d'exposition hétérogène à l'activité minière. La troisième source de variation est constituée par les différents groupes de produits géologiques, qui ont des liens localisés différents et donc des impacts nets différents. Compte tenu de ces sources de variation, l'étude explore différents sous-ensembles d'échantillons, en restreignant par exemple les données par province, par distance à la mine et par type de produit. L'étude est essentiellement une procédure de différence dans les différences qui utilise l'ouverture et la fermeture de mines, ainsi que l'explosion des prix, comme traitement.

En général, lorsqu'une mine ouvre localement, la probabilité qu'un individu sorte de la pauvreté de revenu augmente de manière significative. De même, la probabilité de trouver un emploi augmente de manière significative, mais l'inégalité relative des revenus augmente également. Le boom des prix des produits de base est un moment important. Elle amplifie à la fois les avantages et les inconvénients de l'activité minière. L'intensité de l'activité minière produit le même effet. Les impacts diffèrent selon les produits de base et les provinces. Le platine et l'or sont les principaux moteurs de la réduction de la pauvreté et de la création d'emplois pendant l'envolée des prix, la province de Limpopo se taillant la part du lion des impacts. L'étude s'inquiète des gains à court terme du boom des prix et des effets néfastes à long terme de l'exploitation minière.

12.1. Introduction

12.1.1. Studying the impact of mining at the local level

What is the statistical impact of industrial mining on local hosting communities in South Africa? Following the seminal work of Aragón and Rud (2013), who empirically estimated the impact of a large gold mine on real incomes of local surrounding areas in Northern Peru, there have been several studies of local rather than national impacts in many developing countries. Chuhan-Pole et al. (2015) study the local impact on poverty, inequality and employment of the gold rush in Ghana between 1993 and 2013. Tolonen (2014) uses geocoded Demographic Health Surveys in Burkina Faso, Ghana, Mali, and Tanzania to study the impact of mining on local female empowerment and child mortality between 1975 and 2013. Berman et al. (2017) combine geocoded data on mining extraction with information on conflict events in several African countries to study the local impact of commodity price booms on local welfare in the years 1997 to 2010. Bazillier and Girard (2020) study the impact of the gold boom in Burkina Faso on local per capita consumption between 1998 and 2014. By and large, the studies show both short- and long-term trade-offs at the local level in several African countries.

In South Africa there is no extensive empirical evidence about the impact of mining on local communities. Two working papers currently exist. Nxele (2015) studied the impact of industrial mining on income poverty in the Limpopo province between 2001 and 2011. Axbard, Benshaul-Tolonen & Poulsen (2019) empirically examined the impact of mining on local crime between 2003 and 2012. South Africa is Africa's largest mining country (Berman et al., 2017), but apart from these papers, there are no econometric studies of this question. This matter is important for three reasons. First, the Marikana massacre of 2012 highlighted the poor conditions of communities despite residing in mining areas (Alexander, 2013; Nxele, 2022). Second, mining policy in South Africa seeks to transform the industry's effect from creating enclaves in communities to fostering inclusive, locally embedded mines. To assess policy, the prior question must be: what is the impact of mines on local communities? Third, such an empirical question studied using suitable data and techniques is important to balance influential qualitative studies such as that by the Benchmarks Foundation (2012, 2017a,b) that highlighted the damage caused by mining in communities. More evidence covering broader mining areas is needed to understand and address the size and direction of the impact of the economic threats to South African mining

communities – poverty and (un)employment. There have been so few studies because of limited data availability. This thesis seeks to fill this gap by using the available census data in post-Apartheid South Africa. It is the first study to cover South Africa's main mining provinces in relation to examining, econometrically, the threat of income poverty and unemployment due to mining, at the local level .

The study focuses on the five largest mining provinces in South Africa: Limpopo, North West, Mpumalanga, Northern Cape, and the Free State ("the five provinces"). In 2015, these provinces had poverty rates of 72.4 per cent, 64.3 per cent, 59.3 per cent, 54.9 per cent, and 54 per cent, respectively. These mineral rich provinces are some of the country's poorest. Moreover, these are largely rural provinces.

The thesis proposes using the South African censuses 1996, 2001 and 2011, which are the only waves available[161]. It will use individual level data, provided specially by Statistics South Africa (StatsSA). This facilitates access to roughly 20 million working age individual observations over the five provinces. Spatially, the individuals are studied at the lowest governance unit, the ward council level[162]. Together with firm level data of all mines in these provinces and registered mine locations data from the then South African Department of Minerals and the United States Geological Survey (USGS), this chapter offers a comprehensive study of the impact of mines on local poverty and employment.

The study's main challenge will be to isolate the impact of mine expansion on local income poverty and employment outcomes during the designated period. To achieve this, the study exploits three sources of variation. First, the commodity price boom; this captures the expansion of mining activity. Second, changes to the ward's distance to a nearest mine due to opening and closing of mines; this is a source of heterogeneous exposure to mining activity. Third, the different geological commodity clusters, which have different localised linkages and therefore different net impacts.

However, the study also notes that the recent advancements in literature that deal with staggered treatments. Staggered treatment or a rollout design is when there is a difference in difference setup

[161] Census 2021/22 was underway at the time of writing. Census data before 1996 is not available at individual or household level, nor is it comparable to post-Apartheid South Africa censuses.
[162] Ward councils are local level geopolitical boundaries used for electoral purposes and accountability. They are smaller than local municipalities. Each local municipality is subdivided into several wards.

where a treatment goes into effect at different times to different groups. Two-way fixed effects forces these treated groups that are already treated to act as though they are control groups when in fact they are not (Callaway & Sant'Anna, 2021). This problem means these results must be read with this caution in mind. The study will improve on this problem through further iterations of this study.

The findings are as follows. Generally, when a mine opens locally, the probability of an individual moving out of income poverty increases significantly. Similarly, the probability of gaining employment increases significantly. The commodity price boom is an important moment. It amplifies both the benefits and trade-offs of mining activity. Intensity of mining produces the same effect. Impacts differ by commodity, and by province. Platinum and gold are major drivers of poverty reduction and employment creation during price booms, with the Limpopo province displaying the lion's share of the impacts.

The rest of the paper proceeds as follows. Section 12.2 contains a literature review of empirical studies of the impact of mining on local economies. Section 12.3 outlines the analytical framework for the empirical strategy of this study. Section 12.4 outlines the data and descriptive statistics. Section 12.5 presents the empirical strategy. Sections 12.6 to 12.8 document the results. Section 12.9 undertakes robustness checks. Section 12.10 offers alternative explanations and limits to the study. Finally, Section 12.11 concludes.

12.1.2. The importance of mining in South Africa

South Africa is a leading country in minerals and metals mining. It boasts 80 per cent of the world's platinum group metals, manganese, and substantial deposits of gold, coal, copper, iron ore, and other commodities. In 2010, Citigroup reported that South Africa is the world's richest country in terms of the value of its mineral reserves, estimated at US$2.5 trillion (Minnitt, 2014). In 2021, mining contributed 8.4per cent to the country's GDP (R372 billion), US$37 million in export sales, and employed 453,000 people (Minerals Council South Africa, 2021). However local mining communities do not benefit enough from communitywide upliftment. This was evident during the 2000s price boom. Over 80 per cent of mining in South Africa is in the five provinces. These provinces boast over 1000 mines registered with the Department of Mining and Energy, mining different commodities. Together, these provinces account for 40 per cent of South Africa's population, and 30 per cent of the country's GDP. These are mainly rural provinces, and the

country's poorest. This study proposes an investigation of the impact of mining activity on local communities between 1996 and 2011.

12.2. Review of empirical studies of local level impacts

Most of the evidence of the impact of natural resources on living standards historically came from aggregate data at country level and offered limited insight about the local economic effects of resource abundance. However, cross-country regressions have come under scrutiny, and the frontier of research on the impact of mining on economies has now moved to studying within-country local level impacts (Jacobsen & Parker, 2016; Van Der Ploeg & Poelhekke, 2017). This review aims to extend that frontier.

In general, these studies have been inspired by the seminal work of Aragón and Rud (2013), who examine the local economic impact of a large gold mine in Northern Peru using annual household data over a period of ten years. The authors exploit the expansion of mine production and distance to a mine as sources of variation. This allows them to use difference-in-differences analysis to estimate the impact of mining on local communities. Almost all the literature on local impacts of natural resources has followed their method.

Aragón and Rud (2013) found evidence of a positive effect on real income of the mine's demand for local inputs, diminishing with distance. This finding is confirmed by a similar study by the World Bank which uses a new district-level database on Peru and finds evidence that producing districts have better average living standards than otherwise similar districts (Loayza, Mier y Teran & Rigolini, 2013). However, this study also finds that consumption inequality increases in all districts belonging to a producing province. This may explain the social discontent that arises in conjunction with mining activities in the country (Loayza, Mier y Teran & Rigolini, 2013). The latest study to support these positive short-term impacts include Cavalcanti, Mata & Toscani (2019), who study the impact of oil discoveries in Brazil on local development, using municipalities as units of analysis. They find positive spill overs from oil discoveries, while decline in agriculture is interpreted as evidence of structural transformation. Unfortunately, the authors do not consider the possibility that the decline in agriculture is potentially caused by harmful mining-related effects. Santos (2018) provides evidence for Colombia, using gold mining post 2002 and

exploiting changes in gold price. He finds a trade-off between increases in local employment and decreases in human capital accumulation, which arguably has longer-term effects.

Kotsadam & Tolonen (2016) also undertake an investigation on the empirical impact of industrial mining on local communities, focusing on female employment. The authors explain that it is unclear whether mines increase or decrease female employment, because mining may reinforce gender disparities in economic opportunities to the detriment of women. The authors expect that although overall employment emanating from mines should increase for both genders, they expect to find gender segregation; female employment increases in the services and sales sectors, while male employment is concentrated in manual labour. The study finds support for a structural shift resulting from the opening of a mine through which women shift from agriculture work to the service sector, or out of the labour force.

This study of the gendered impacts of mines is supported by more recent work from Aragón, Rud and Toews (2018). They examine the effect of resources on non-primary employment by gender. They use a self-constructed dataset of British coal mines between 1981 and 2011, four rounds of the UK Population Census during the same period, and confidential data from the UK Labour Survey. The census data is disaggregated at the ward level and district level. The empirical strategy is designed to estimate the effect of mine closures on local employment outcomes by gender. Using a difference-in-differences approach, two sources of variation are the closure of mines over time (a negative shock on labour markets) and distance to coal mines to identify mining and non-mining districts (30 miles). The study confirms the heterogenous effects by gender of extractive industries on labour markets.

Another dimension of impact is criminality. Axbard, Benshaul-Tolonen & Poulsen (2019) exploit spatial variation to investigate the role of mine operations on levels of local criminality in South Africa. They find that the start of natural resource extraction is not linked to higher levels of crime. However, mine closure leads to a large and significant increase in both property and violent crime. The study shows that migration flows and income opportunities created by the mining industry are two important channels through which mining affects criminality. Therefore, this study supports the view that mining could potentially threaten local social stability and security.

Mining also affects local economies through its impact on the environment. Aragón &and Rud (2016) empirically investigate the impact of mine operations on the environment, on agricultural

productivity and on poverty in Ghana, using spatial variation between farmers located near mines and those farther away. The study found that pollution from mines decreased agricultural factor productivity by almost 40 per cent between 1997 and 2005. Therefore, the study provides evidence of negative environmental and socio-economic externalities that affect living conditions in rural areas, particularly in the absence of policy to mitigate such externalities.

Perhaps the most exciting expansion of the literature of natural resources on local communities relates explicitly to distribution and governance. Maldonado (2017) is developing research using variation of resource rents and mineral production among Peruvian municipalities to analyse the impact of resource booms on local politicians' behaviour and citizens' wellbeing. The paper exploits changes in resource prices and changes in rules of natural resource rent distribution to show impacts on re-election outcomes, political competition, public goods provision, clientelism, and community welfare. The study finds that the impact depends on size of rents in a non-monotonic fashion. While a promising study, the empirical strategy needs to overcome endogeneity, as it relies on an argument that mining rents (used as treatment) are not endogenously stimulated by production levels induced by mineral prices.

Another recent study on governance and distribution is by Bazillier and Girard (2020). The authors extend the frontier of research on the impact of natural resources on local communities by examining the distributional impact between artisanal mining and industrial mining in Burkina Faso. The former is a case of common property management, while the latter is private property extraction. With access to rich household level data and exploiting temporal and spatial variation in a difference-in-difference analysis, the study finds that artisanal mining is income-improving and inclusive, while industrial mining is enclave, and does not contribute to raising local incomes. The study therefore contributes important evidence on the role of artisanal mining in local communities, the impact of opening and expanding a mine, and the distributional impacts of different property rights regimes in local communities.

Overall, several published literature reviews on local mining impacts are available, including Cust and Poelhekke (2014), Gamu (2015), and Van Der Ploeg and Poelhekke (2017). The main areas of convergence in this empirical literature are that mining as a local activity can and does create local employment and raise local average incomes. Trade-offs include rising local inequality, rising local crime levels, reallocation of labour from agriculture to mining, environmental effects,

and possibly reduced years invested in education. For the present study, a focus on income poverty and employment is important but insufficient, given all the possible trade-offs of mining at the local level.

12.3. Analytical Framework – the impact of mining in surrounding areas

The framework mainly follows Aragón and Rud (2013), and is influenced by Kotsadam and Tolonen (2016), Berman et al., (2017), and Bazillier and Girard (2020). Aragón and Rud build a framework to assess the impact on local communities of an expansion of a mine that is driven by the growth of gold production and the introduction of a new policy to increase local employment and localise supply linkages. The work of Morris, Kaplinsky and Kaplan (2012) explains these linkages by providing a conceptual framework to understand the types of economic linkages from mine operations.

The Aragón and Rud (2013) paper provides an opportunity to develop a framework that addresses as closely as possible the impact of mines on local livelihoods. In the presence of local economic linkages, the economic activity stimulated by mine operations, , may create positive economic multipliers on local economies and therefore help reduce poverty and increase employment. However, because industrial mines cause pollution, their effects on the environment and health could exacerbate local poverty and loss of jobs in agriculture. Therefore, estimating the impact of mine operations on local income poverty and employment would be capturing the net average effect: both the negative impacts, and the positive impacts.

Aragón and Rud (2013) use the framework of local labour demand shocks developed by Moretti (2010). Moretti builds on the premise that the opening of a new business generates a new job in the local economy, which may generate additional jobs through increased demand for local goods and services. With this framework in mind, one may regard the communities surrounding mines as a local economy , while those farther away as another economy.

The local demand shock will then increase nominal wages in the local services sector around mining areas relative to locations farther away. Given labour mobility between sectors, the increase in wages will increase for other workers not directly linked to mining. This will then lead to an increase in demand and price of local goods, such as locally traded agricultural produce, thus benefiting agriculture. Given low levels of inter-regional mobility and an upward-sloping supply

of local goods, this would have a positive effect on individuals' real income (Aragón & Rud, 2013). As a result, in addition to employment creation, some individuals will be lifted out of income poverty.

Following Aragón and Rud (2016), the framework also takes into account that mining creates an interplay between traditional agricultural activities and modern industry,.

Most of the mining areas studied are predominantly rural, and both commercial and subsistence agriculture is a large source of local livelihood. Close to agricultural commercial farms and backyard farms are industrial mines that release pollutants which accumulate in the surrounding areas and can travel some distance.

Table 33 – Percentage GDP contribution by sector per province, 1996 and 2016

		Agriculture	Mining	Manufacturing	Tourism	Government
Limpopo	1996	2.1	33.86	3.33	14.29	18.2
	2016	2.99	28.59	2.88	15.82	18.99
North West	1996	3.12	44.74	5.17	10.51	12.07
	2016	2.57	29.03	6.47	12.73	13.92
Mpumalanga	1996	3.68	31.84	11.97	13.1	12.69
	2016	2.69	24.85	13.94	15.14	12.19
Northern Cape	1996	6.34	34.63	3.34	10.05	14.23
	2016	7.01	28.53	3.3	12.62	14.99
Free State	1996	6.1	23.45	9.4	15.39	15.08
	2016	4.37	12.82	10.89	17.31	15.96
Rest of country	1996	3.25	3.59	18.82	14.92	20.96
	2016	2.74	1.20	16.10	16.22	16.63

Source: SALGA Municipal Barometer (http://www.municipalbarometer.org.za/DataBank). Note: only sectors of comparative interest shown.

As demonstrated by Aragón and Rud (2016), such a spatial arrangement has implications for agricultural factor productivity, where pollution-related effects reduce agricultural productivity. In turn, this exacerbates local poverty and loss of agricultural employment in a context where agriculture is an important source of income in the local economy. Therefore, the interpretation of this framework in isolating the impact of industrial mines on local communities has to take into account both the negative and positive impacts that arise from mining activity.

The following sections use the above framework to build a model to estimate the impact of mining on local communities.

12.4. Data and overview statistics

12.4.1. Prices, production, and poverty trends

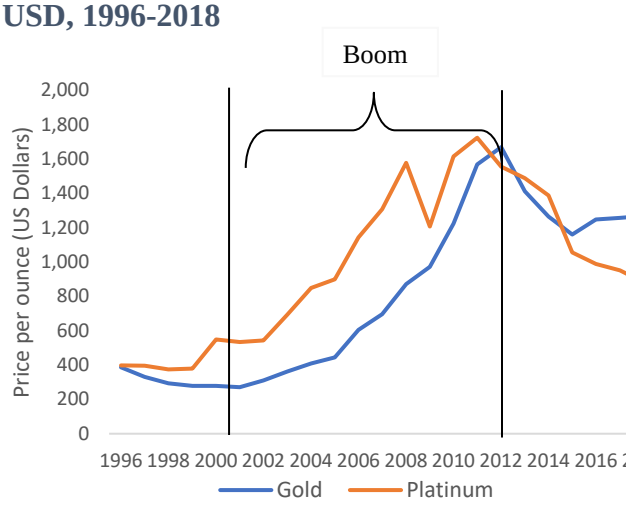
The first decade of the millennium coincided with a commodity price boom, shown in Figure 44 by the world price of gold and platinum. A resource rich country, South Africa consequently experienced a rise in mineral export earnings (see Figure 45)[163]. As will be shown in this chapter, the rise in export earnings was mainly driven by the rise in prices, with some instances of new mines opening and some mines expanding[164]. Both the rise in prices and the rise in mining activity in the form of the development of new mines and the expansion of existing mines are important sources of variation for this study.

There are two important relationships to discuss that relate to mining commodity prices. The first is the relationship between price and production, and the second is between price and local poverty. The relationship between price and production is complicated by the political economy story discussed in the first part of the PhD, as well as geology or commodity specific factors. While an increase in price led to an increase in overall platinum production, iron, and copper, for example, the gold industry underwent several mine closures due to mined-out ores which required ever deeper digging, uneconomical and impractical despite the price increases. As such, this chapter will carefully disaggregate changes in mining activity by both the impacts of mine opening, mine closing, and by commodity.

[163] According to the Chamber of Mines of South Africa, South Africa is generally a price taker of commodity prices (Baxter, 2016). The expectation therefore is that the world price is exogenous to local conditions. However, this may not be completely true for platinum, where South Africa is the leading global supplier – as discussed in earlier chapters of the PhD.

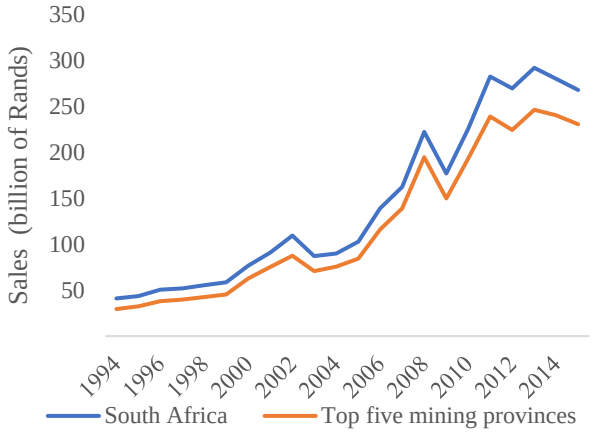
[164] In the case of platinum, some of these expansions are documented in the earlier chapters, specifically the Amplats related deals.

Figure 44 – Gold and platinum prices, USD, 1996-2018



Data Source: Index Mundi Commodity Price Indices (2022)

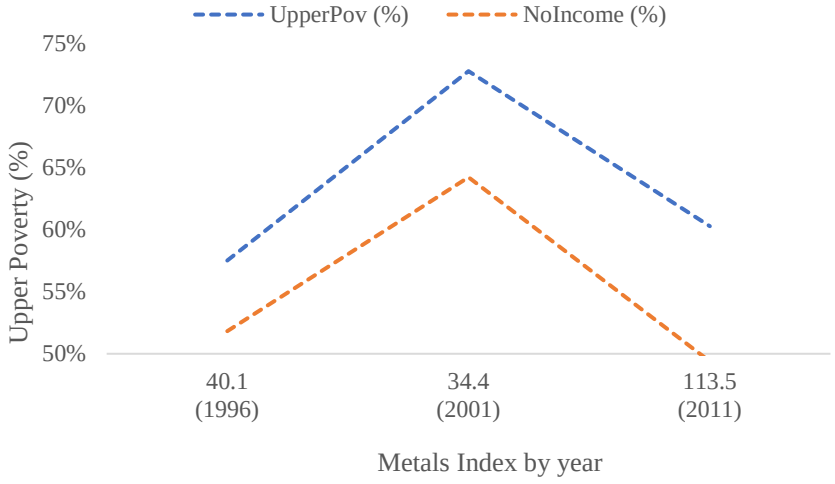
Figure 45 – Estimated primary export sales, 1994-2015



Data Source: Department of Mineral Resources (2016). The "top five" mining provinces are Limpopo, North West, Mpumalanga, Free State, and Northern Cape.

In terms of the relationship between price and poverty, Figure 46 shows that between 1996 and 2001, world commodity prices fell, while coincidentally, poverty rates rose in South Africa. Between 2001 and 2011, commodity prices rose substantially, while poverty rates in South Africa also fell. The point of this observation is not to suggest correlations or causations, but rather to contextualise the study.

Figure 46 – Relationship between price and poverty

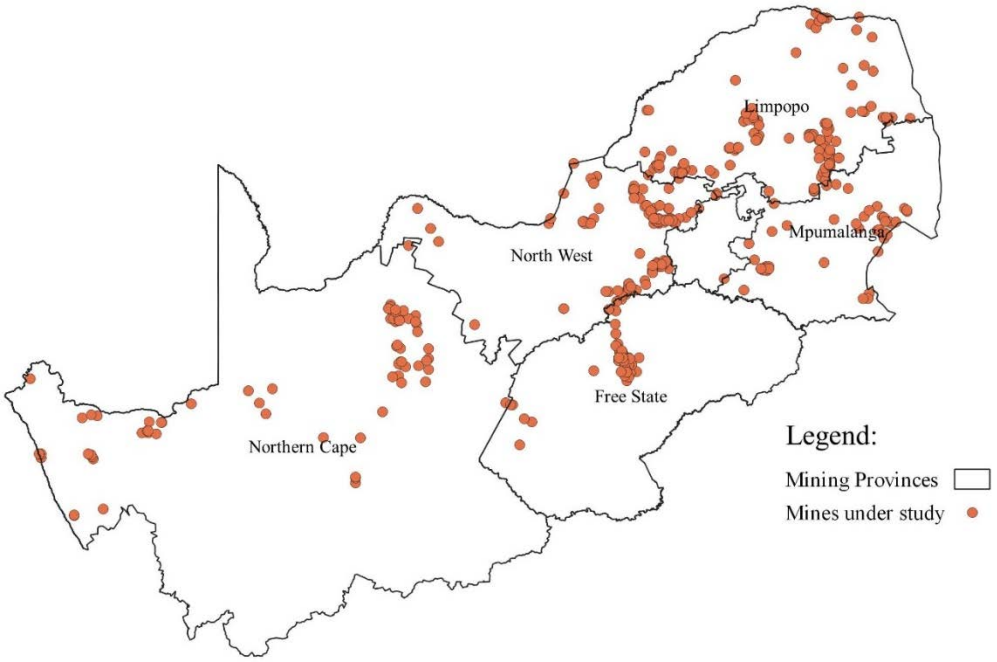


Data Source: Index Mundi Commodity Price Indices (2022) and StatsSA (2022)

An analysis of the literature provides overwhelming evidence that income poverty increased between 1996 and 2001 (Leibbrandt et al., 2005; Leibbrandt, Levinsohn & McCrary, 2005; Bhorat & Kanbur, 2006; Özler, 2007), while poverty declined significantly thereafter until 2010 (Finn, Leibbrandt & Woolard, 2013; Gumede, 2014). Most of these studies, such as Leibbrandt et al. (2006), and Bhorat and Kanbur (2005), also used the census data. The confirmation of this poverty trend is important because the trend features in the rest of this chapter and the following chapter.

12.4.2. Areas studied and mines

Figure 47 – Map of the five mining provinces, with all mines under study



Source: Mapped using QGIS using mining data from USGS and shapefile from ArcGIS

Isolating the five provinces shown in Figure 47 for a study of the impact of natural resources is ideal for several reasons. Firstly, these are South Africa's poorest provinces, consistently above the national mean (StatsSA, 2014, 2017) – see Table 34.The large poverty headcount provides a strong context for a study on poverty and unemployment. The gradual decline in poverty between 2001 and 2011 provides an opportunity to understand the role of mining, given its importance in these provinces.

Secondly, the provinces are predominantly rural. The study can isolate the mining industry and evaluate its impact. The two other major sectors of the provinces are agriculture and tourism (see Table 69 in APPENDIX A).

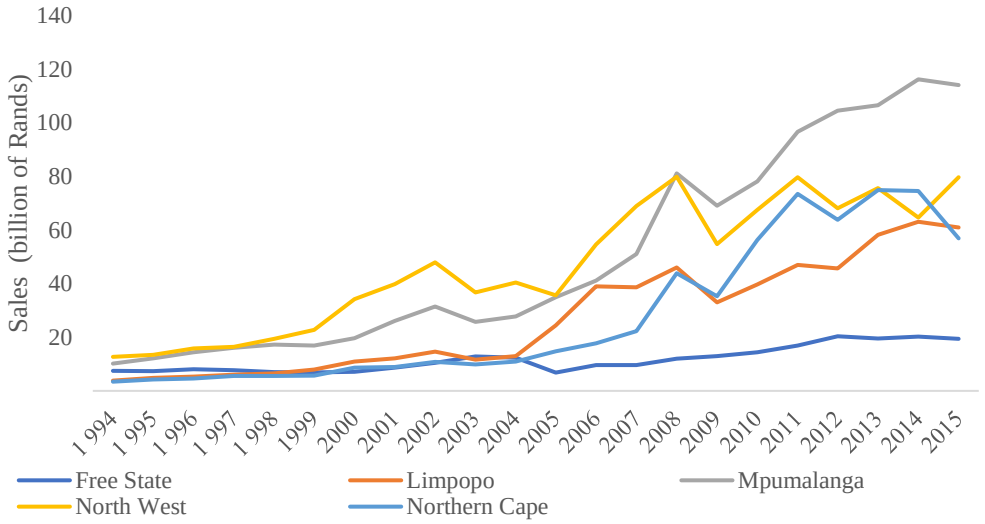
Table 34 – Headcount poverty in the five provinces under study, 1996 to 2015

	1996	2001	2011	2014/15
Free State	62.0	77.3	52.4	54.9
Northern Cape	64.5	72.3	58.2	54.9
North West	62.1	75.6	59.9	64.3
Mpumalanga	63.0	79.1	63.8	59.3
Limpopo	72.4	82.5	70.1	72.4
National average	58.6	74.0	53.2	55.5

Data Source: StatsSA census data 1996, 2001 and StatsSA (2017)

Thirdly, the provinces contain an abundance of mineral resources. Total mineral sales of these provinces constitute 80 per cent on average of South Africa's total mineral sales between 2000 and 2018. Their deposits include platinum, copper, coal, gold, iron ore, and diamonds (Department of Mineral Resources, 2016). Therefore, this sector is large enough to explain part of the socio-economic wellbeing of these provinces.

Figure 48 – Estimated primary mineral total sales, 1994-2015



Data Source: (Department of Mineral Resources, 2016). *Note that it is not clear whether the prices are nominal or real.*

Finally, in these provinces there has been a significant increase in both the intensity of mining (the number of mines) and the size of mining (see Figure 48). This feature is critical for the success of the empirical strategy of this paper, which uses this increase in mine activity (prices) as a treatment, and therefore allows comparison with communities not exposed to the demand shock.

12.4.3. Data and Main Variables

The empirical analysis combines individual data with information about mines and the 2000s commodity price boom for a 15-year period between 1996 and 2011. This means the dataset is able to capture the start of the commodity boom to its peak in 2010/11, but not to the end of the boom. StatsSA granted access to the only existing post-apartheid census data of 1996, 2001, and 2011 at individual level. This census data is representative at the municipal ward level (ward level or ward(s)) and has been transformed to allocate individuals to wards[165]. Wards are the smallest geopolitical subdivisions of municipalities used for electoral purposes. Each local municipality is delimited by the Municipal Demarcation Board[166]. The dataset consists of 6 million *working age*[167] individuals per wave in 1996, 2001, and 2011 across five provinces, across 1,240 wards. This results in 19.5 million observations in total[168].

The outcome variables are income poverty and employment. In each census survey, individuals report income by indicating their income category. Therefore, the income variable is a categorical variable[169]. To determine poverty lines for each wave, the study follows StatsSA's inflation-adjusted poverty line guidelines for each of the years[170]. The main measure of poverty is the Upper-bound poverty line ("Upper poverty"), which is meant to describe those who are poor but are just able to afford sufficient nutrition and non-food items. The study also uses "No Income" poverty line as an alternative, being those who report receiving no income in each survey round.

[165] The census data provides place names (i.e., residential suburbs), which enable the dataset to be transformed into ward level by locating people in their respective wards. APPENDIX F, Table 38 provides details and sources of information.
[166] The geopolitical boundaries, from largest to smallest are national state, provinces, district municipalities, local municipalities (or metros in cities), and wards.
[167] Working age = 15-65 years, following StatsSA's definition; see (Statistics South Africa, 1998).
[168] It is a limitation that the data only has three waves. Census 2021 is underway and could update this study.
[169] The exact question in the survey is: "Please indicate this person's income category before tax". The income asked includes income earned from work and other income.
[170] Focusing on the working age in relation to poverty is consistent with the literature on poverty in South Africa, where children and pensioners are taken care of by the welfare system of income grants and other government services such as healthcare (Leibbrandt, Wegner & Finn, 2011). Further, StatsSA explicitly advises users to restrict analysis involving income to the working age population (Statistics South Africa, 2002a).

APPENDIX E outlines the income categories, the poverty lines, as well as how the variable was calculated. The employment variable is a dummy equalling one (1) if a person is employed.

The control variables at the individual level include gender, education, race, and age. The ward level controls include access to electricity, water, sewerage, the ratio of those living in traditional or informal housing, as well as the population number per ward.

The data on mines is collected from the Department of Mineral Resources (2015), the USGS (2014), and annual company reports. The data is limited to industrial mines of varying size[171]. The compiled dataset contains just over 400 industrial mines per wave, including the GPS coordinates of each mine, when a mine was opened/closed, and what commodities each mine produces or produced. To measure the exogenous impact of mine activity, data on commodity prices was collected from Index Mundi (2022).

To measure the impact of mine activity on surrounding communities, the study constructs a measure of distance between a ward and its nearest mine during a given year. This variable varies per year with the development of new mines or closure of old mines. That is, the opening of a new, closer mine changes the distance variable for the affected wards. The study calculates distance from each ward to the nearest mine by using a trigonometric and radians function that estimates the arc distance between two coordinates on the surface of the earth (see APPENDIX E for details). A municipal ward's GPS coordinates are a ward's central voting station. This method considers that voting stations are chosen by the Independent Electoral Commission (IEC) based on communitywide accessibility. The study uses the IEC's *Voting Station finder* to locate the precise ward GPS coordinates. Caution is taken that the within-ward internal variation of distance could differ due to size of mine and size of ward. Some wards are very large, and distances from the centre of a ward could be large. Since the choice of distance drives the size of the estimates, the study will include results for different distances (in the appendices).

Distance is a source of heterogeneous exposure to the increase in mining activity. The study uses 10 kilometres as a threshold to divide wards into two groups – "close to mine" and "far from mine". This creates a dummy variable of mining activity, $M_{w,t}$, defined as $M_{w,t} = 1$ where individuals

[171] By "limited", the data does not include information on artisanal mines or mining.

are located within 10km. This dichotomy will be referred to as “mining” and “non-mining” areas or communities.

At the outset, this study does not know the correct distance threshold. The choice of distance is important to correctly estimate the effects (Tolonen, 2014) and to estimate the true counterfactual. To determine the threshold of mining communities, or the treated communities, the study considered several tools to calculate this distance. First, the study ran several regressions at different distance thresholds to determine the threshold by which impacts of mining tend to zero. This mostly happens beyond 10km. Second, the study collected data on the size of each of the municipal wards. While the study found that the size range within province is large, from 1km^2 to north of 70km^2, the average ward distance (by taking the square root of the size of ward) is 8-10km except in Northern Cape.[172]

Third, the study considered South African literature that examines local mining communities. Qualitative studies focusing on the impacts of mining in South Africa mostly use this threshold to define local mining areas (Magak, 2022; Mine Health and Safety Council, 2022)

Beyond the Mwt variable, a crucial point about the data is that mines are often close to each other, either occurring within a ward, or overlapping a few wards simultaneously. Therefore, the data might have 10 mines in a ward, and this might change to 12 in the subsequent wave, but the dummy variable Mwt will only code 1/0, which ignores the true picture of mine openings. In fact, if there were 10 mines in 1996, then 12 in 2001, then the dummy will code it 1 and 1 for both years. So, the difference in difference will be zero.

Nevertheless Mwt (0/1) is also interesting because it shows if there is an effect of mine opening/closing in a place without mining already. The study calls this the extensive margin. To account for situations where there are several mines in proximity, the study created the “count” variable. The variable captures how many mines are within Mwt (e.g., 10km, and other alternative specifications of distance). Therefore, the study will present information on the effect of mine

[172] The Northern Cape averages to around 40km. However, the Northern Cape is the least mining province in the dataset, mainly mining diamonds. The denser a ward, the smaller is the boundary. For the rest of the provinces, the averages are as follows: North West = 6.19km, Mpumalanga = 11.28km, Limpopo = 8.37km, and Free State = 17.3km (where Free State is the second least most representative province in the study, mainly offering a story of [closing] gold mines over time).

opening/closing in a ward with no other mines (extensive margin) and information on the additional effect of a mine opening/closing in ward with mines (intensive margin).

Table 35 – Descriptive statistics: Poverty and Unemployment, and mine opening/closing trends between 1996 and 2011

	1996	**2001**	**2011**	Detail
All five provinces				
% People in *Upper* poverty	58%	73%	60%	
Number of people in Upper poverty	4,197,320	5,103,103	5,119,088	
% People in No Income poverty	52%	64%	49%	
Number of No Income poor people	3,782,618	4,504,092	4,194,752	
% People employed	25%	26%	30%	
Within 10km of a mine				
Number of people in $M_{w,t} = 1$	3,852,140	4,615,396	5,297,001	
Number of poor people in $M_{w,t} = 1$	2,176,299	3,307,646	3,180,487	
% People in poverty in $M_{w,t} = 1$	56%	72%	60%	
Employment in $M_{w,t} = 1$	35%	28%	35%	
Outside 10km of a mine				
Number of people in $M_{w,t} = 0$	1,365,394	2,031,289	2,278,923	
Number of poor people in $M_{w,t} = 0$	853,144	1,529,447	1,417,401	
% People in poverty in $M_{w,t} = 0$	62%	75%	62%	
Employment in $M_{w,t} = 0$	12%	11%	14%	
Information on wards and distance to mine				
Number of wards	1,240	1,238	1,239	
Number of wards in $M_{w,t} = 1$	895	834	819	Net decline
How many wards have mines?	126	121	118	Net decline
How many wards have more than one mine?	62	59	61	c.50% average
Max number of mines within a ward	18	17	16	(ward 34501004)
Average number of mines excluding maximum	2	2	2	
Number of wards with mines inside ward	160	154	157	
Number of wards in $M_{w,t} = 0$	345	404	420	
Information on mines				
Number of mines	418	395	399	Net closure
Number of mines in Northern Cape	64	57	51	Net closure
Number of mines in North West	84	83	85	Net opening
Number of mines in Mpumalanga	93	97	117	Net opening
Number of mines in Limpopo	111	107	116	Net opening
Number of mines in Free State	66	51	30	Net closure
Number of mines that close	n/a	27	27	
Number of mines that open	n/a	4	31	

Table 35 presents descriptive statistics by year and by distance threshold. Between 1996 and 2011, there were more mine closures than openings. This information is discussed shortly below, at a disaggregated ward level. Notable is that mining areas are far more densely populated than non-mining areas. This is largely due to historical policies that concentrated black people in these rural areas, known as homelands or Bantustans (explored in detail in the following chapter).

Table 36 – Mine opening and closing by ward, 1996 – 2011

	1996	2001	2011
Opening 50km	n/a	80	47
Opening 10km	n/a	51	26
Opening mine	n/a	33	22
Closing 50km	n/a	146	102
Closing 10km	n/a	123	14
Closing mine	n/a	40	23

Source: Author. *Note that The above is not the number of mines closing, opening, but the number of wards that experience an opening of a mine locally.*

Table 36 documents information on mine openings and mine closures over time by wards. In the data set the are more closures than openings. [173] This is consistent with the story of 'missed investment' during the boom. The theoretical expectation is that in areas where mines open, poverty reduction will be observed.

Table 37 provides a table with number of mines by commodity over time. This information provides the context of the variation by commodity that will explored in this chapter, in addition to the other sources of variation already discussed (i.e., effect of price changes, extensive and intensive margin).

[173] This information is limited by the three waves (1996, 2001, 2011).

Table 37 – Mines by commodity over time, 1996 – 2011

	1996	2001	2011
Platinum	69	73	99
Gold	105	90	60
Diamond	16	16	18
Copper	24	24	23
Coal	62	73	100
Nickel	1	3	3
Iron	10	11	12
Lead	5	4	4
Tin	7	0	0
Zinc	2	2	2
Manganese	21	21	19
Magnesium	1	0	0
Vanadium	4	4	4
Phosphorus	11	10	10
Antimony	3	3	3
Asbestos	17	9	0
Chrome	42	37	35
Feldspar	0	0	0
Britholite	1	1	0
Beryllium	1	1	0

Source: Author

Table 38 presents summary statistics, by $M_{w,t}$. The variables include the outcome variables, individual descriptors, ward characteristics, as well as mining related summary statistics.

Table 38 – Summary statistics

	$M_{w,t} = 1$		$M_{w,t} = 0$		*Total*	
Variables	Mean N = 13,764,537	Standard Error	Mean N = 5,675,606	Standard Error	Mean N = 19,440,143	Standard Error
Individual level (working population:14-65)						
Upper poverty	0.63	0.0001	0.67	0.0001	0.64	0.0001
No Income poverty	0.55	0.0001	0.56	0.0001	0.55	0.0001
Employment	0.33	0.0001	0.30	0.0001	0.32	0.0001
Age	33.24	0.0036	32.02	0.0058	33.18	0.0031
Sex (Male=1)	0.47	0.0001	0.45	0.0002	0.47	0.0001
Race = black	0.90	0.00008	0.85	0.0002	0.88	0.00007
Race = Coloured	0.03	0.00005	0.07	0.00002	0.04	0.00005
Race = Indian/Asian	0.004	0.00002	0.003	0.00002	0.004	0.00001
Race = White	0.07	0.00007	0.07	0.0001	0.07	0.00006
Education years	8.07	0.0013	8.05	0.0020	8.07	0.0011
Ward level (ratios)						
No piped water	0.16	0.0035	0.14	0.0045	0.16	0.0029
No sewerage system	0.64	0.0064	0.70	0.0099	0.66	0.0055
Refuse removal	0.63	0.0068	0.69	0.0109	0.64	0.0058
No electricity lights	0.32	0.0050	0.32	0.0087	0.32	0.0043
Traditional Informal dwelling	0.25	0.0037	0.20	0.0055	0.24	0.0031
Total Population	8326.51	62.3336	8825.46	130.241	8446.19	56.8320
Mines						
Multi-commodity ward	0.046	0.0035	0.022	0.0037	0.038	0.0028
Number of mines	0.286	0.0169	0.045	0.0218	0.227	0.0140
Platinum ward	0.204	0.0067	0.103	0.0090	0.179	0.0056
Gold ward	0.127	0.0055	0.082	0.0082	0.116	0.0047
Copper ward	0.034	0.0030	0.147	0.0105	0.061	0.0034
Coal ward	0.143	0.0058	0.075	0.0078	0.126	0.0048
Diamond ward	0.052	0.0037	0.116	0.0095	0.067	0.0036
Chrome ward	0.081	0.0045	0.054	0.0067	0.075	0.0038
Feldspar ward	0.082	0.0045	0.024	0.0046	0.068	0.0036
World commodity prices ($US)						
Platinum	859.72	9.8528	966.18	18.3181	885.26	8.7076
Gold	720.04	9.6647	814.22	18.2210	742.63	8.5675
Copper	4108.91	53.7535	4629.48	101.3922	4233.78	47.6556
Coal	59.64	0.6426	66.26	1.2043	61.23	0.5689
Diamond	29699.56	230.2688	32438.64	406.5090	30356.57	201.0685
Chrome	158.30	2.2329	180.66	4.1991	163.67	1.9784
Feldspar	53.41	0.1226	54.86	0.2119	53.76	0.1065
Industrial index	100.02	1.0889	110.56	2.0541	102.55	0.9654
Metals index	61.24	0.5939	67.10	1.1186	62.64	0.5264

12.5. Empirical Strategy

12.5.1. Identification strategy

The three waves in this study provide the following quasi-experimental set up. In 1996 data is collected, providing information on ward poverty and employment, individual and ward characteristics, and mining activity. Between 2001 and 2011, there is an expansion of mining activity driven by increased commodity prices. Therefore, the study exploits two sources of variation. First, it exploits the change in commodity prices. For the pre-existing mines in 1996, treatment is strictly the change in commodity prices, which will mainly be the world metals index. For wards in which new mines open nearby, the additional treatment is the opening of these mines (change in distance to within 10km), where the first year of production is considered the start of the treatment. This is the second source of variation (see Figure 47). There is limited variation in the opening and closing of mines in the dataset at ward level. This is not the case at suburb level. For example, if a mine has two wards, and an additional mine opens, the $M_{w,t}$ variable stays the same. To alleviate this limitation, the results will measure the impact of intensity of mining as measured by number of mines nearby.

As mentioned above, the study uses the opening and closing of mines, and the price boom, as the treatment. First, the study compares wards located close to mines with those far from mines. Second, *within mining areas*, the study compares those closest to mines to those farther away. In order for the study to be valid, the parallel trend assumption must hold. That is, the study assumes that the impact of mining activity declines with distance from a mine, and that wards close and far from mines would have performed similarly in the absence of new mining activity.

A major drawback is the lack of data before 1996, in order to gain better insight into historical trends in outcome between mining and non-mining wards. Figure 49 illustrates the basic idea behind the identification strategy. It plots the conditional mean of poverty for individuals located within 10 km from a nearest mine and those located farther away. However, at the macro level, Figure 49 shows similar trends, except that mining areas are less poor. This raises a concern that wards located close to mines were already faring better than non-mining wards, and that the study could simply capture unconditional trends. To see divergence resulting from new mining activity requires a closer look at areas that initially had no or little mining activity. An example of such a

case is the Sekhukhune District in Limpopo, which experienced rapid development of platinum mines in the 2000s resulting from BEE deals. Figure 50 illustrates that before 2001, individuals close to some mining activity were poorer. Post 2001, individuals who suddenly found themselves in expanding mining areas experienced a relative sharper decline in income poverty. APPENDIX A displays similar diagrams for employment and income. Section 12.9 and APPENDIX C address concerns that the identification strategy may be invalidated by other unobserved time-varying factors correlated with the expansion of mining and affecting differently areas closer and farther from mining wards.

Figure 49 – The conditional mean of poverty

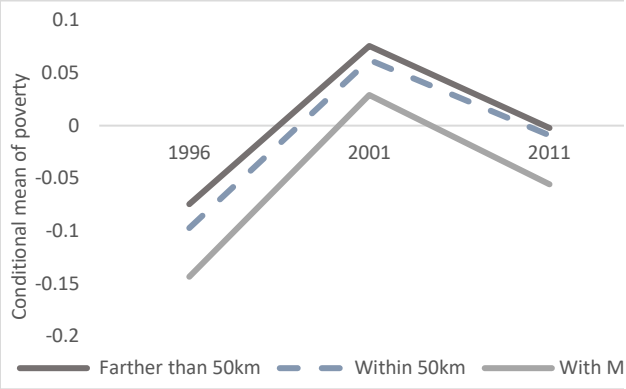
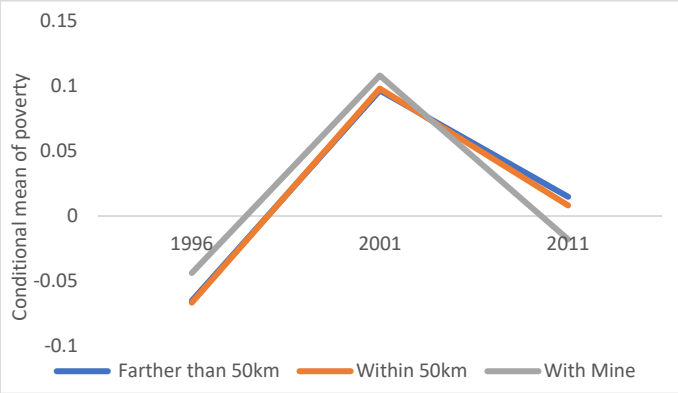


Figure 50 – The conditional mean of poverty in Sekhukhune district, Limpopo



12.5.2. Baseline Specification

To evaluate the impact of mining activity on ward-level poverty and employment, the following regression are estimated:

$$y_{i,w,t} = \beta_0 + \beta_1 M_{w,t} + \beta_2 Z_{i,w,t} + \beta_3 X_{w,t} + \alpha_1 w + \alpha_2 dt + \varepsilon_{i,w,t} \quad (1)$$

$$y_{i,w,t} = \beta_0 + \beta_1 M_{w,t} + \beta_2 (logP_{w,t} \times M_{w,t}) + \beta_3 Z_{i,w,t} + \beta_4 X_{w,t} + \alpha_1 w + \alpha_2 dt + \varepsilon_{i,w,t} \quad (2)$$

where $y_{i,w,t}$ is the outcome variable. Relating to poverty and employment, $y_{i,w,t}$ is a binary variable equal to 1 if an individual i is income poor (employed) in ward w in year t, and equal to 0 otherwise. $M_{w,t}$ is a binary variable indicating the presence of a mine within 10km of ward w at time t. The main measure of change in the magnitude of mining activity is the commodity price ($logP_{w,t}$), which is the log of the price of the nearest commodity to a ward[174]. Both $M_{w,t}$ and $logP_{w,t}$ vary with time due to the opening and closure of mines (e.g., mines of differing commodities). The specification also includes a vector of individual-level controls $Z_{i,w,t}$ and ward-level controls $X_{w,t}$, ward-level fixed effects w, and district multiplied by year fixed effects dt. The main parameters of interest are β_1 and β_2 in equation 2, which capture the size of impact on $y_{i,w,t}$ due to a change in commodity prices, varying by exposure to mining ($M_{w,t}$).

The study follows the literature by implementing the estimator described by Correia (2017, 2019) to estimate the model. Correia developed this estimator and corresponding Stata package to efficiently compute linear and instrumental-variable regressions with many levels of fixed effects[175]. Although this study mainly deals with binary variables of interest, there are limited options to deal with multi-level fixed effects estimation. For example, there are conceptual difficulties associated with fixed effects panel logit estimation, and this approach would not improve the Correia LPM estimator (Guimaraes, 2017). Second, given the large dataset used by this study, the LPM is much faster, and the coefficients can be interpreted straightforwardly. This holds in particular for interaction effects in the model. Because the interpretation of interaction

[174] In cases where a ward has more than one close mine, the nearest largest mine is selected.
[175] This decision also accounts for the very large dataset requiring the most efficient estimating technique. See Sergio Correia at https://github.com/sergiocorreia/reghdfe for more information.

coefficients in non-linear models changes, the fixed effects are easily controlled for, and standard errors can be adjusted for autocorrelation and clusters.

MAIN RESULTS

The results section is organised according to three sections. Section A studies the *overall* impact of mining by comparing areas close to mining to areas farther away (i.e., $M_{w,t} = 1 \; versus \; M_{w,t} = 0$). To achieve this, the section will first provide results by Mwt only. Second, the section will then show the impacts of the opening and closing of mines. Third, the section will then present results by minerals. Section B will then present results of the second specification: both Mwt (0/1) and Pwt. This will also be disaggregated by mine opening and mine closing. Finally, Section C will present results of the intensive margin: Mwt(0/1) and Mwt (count). The section will also evaluate the effects of mine opening/closing, and the effects of price changes.

Case study literature on South African mining communities suggests that communities living immediately close to mines disproportionately experience the negative effects of mining. These negative effects include dislocations to make way for mining development (Mnwana, 2015), erosion of subsistence farming which is typically a major source of livelihood in these rural areas (Shackleton, 2020), and health conditions due to dust (McCulloch, 2009). These impacts may also affect nearby commercial agriculture through pollutants from mining that affect health and diminish crop yields, degrade the quality of key inputs such as soil, or weaken labour productivity through health effects (Aragón & Rud, 2016). The fall in agricultural output due to reduced factor productivity, closure of commercial farms, and reduced subsistence farming activity could exert downward pressure on incomes and overall employment.

However, it is arguably possible that those living closest to mines might benefit from the immediate local economic activity. Overall, the direction of impact of mining on local poverty and employment will depend on the strength of economic linkages and positive multiplier effects versus the intensity of harmful spill overs from mining. This section will attempt to evaluate these mining areas closely. Section 12.9 will undertake robustness checks to address specification and concerns on the estimation procedure.

12.6. SECTION A – Overall impact of mining at the local level

12.6.1. Baseline impact of mining

This section reports the empirical results of the model specification. The development of new mines is expected to increase the nominal income of workers in affected sectors and stimulate local employment[176] (Horwitz et al., 2002). It is also expected to increase the price of goods traded locally (Aragón & Rud, 2013). It should be noted that due to the data sample's small number of years, the results are only indicative of relatively short-term impacts.

Table 39 - Baseline estimation results: Income poverty (Upper Poverty and No Income) and Employment

	(1) Upper Poverty	(2) No Income	(3) Employed
$M_{w,t} \leq$ 10km	**-0.0294*****	**-0.0401*****	**0.0313*****
	(0.0105)	(0.0113)	(0.0104)
Constant	1.508***	1.160***	-0.503***
	(0.142)	(0.129)	(0.144)
Ward fixed effects	Yes	Yes	Yes
District x Year fixed effects	Yes	Yes	Yes
Observations	19,109,159	19,109,159	19,109,159
Mean of y	0.644	0.556	0.315

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 39 documents the poverty-alleviating impact and employment-creating impact of industrial mining on individuals located within mining wards[177]. The estimation uses ward and district multiplied by year fixed effects to make this estimation plausible[178]. Columns 1 and 2 first consider two definitions of poverty used by StatsSA. For both definitions of poverty, Upper poverty and no-income poverty, individuals living within 10km of mines become less income poor than those living farther.

[176] Mining employment is expected to increase locally also because of the mining policy (mining charter) requiring mining companies to focus on local communities for opportunities.

[177] Note that the estimation procedure drops $P_{w,t}$ as a control variable because it is collinear with $P_{w,t} \times M_{w,t}$.

[178] The baseline specification controls for important person variables such as age, race, and education. Ward level controls include access to electricity and water, as well as share of traditional and informal dwelling (see APPENDIX B). These controls remain robust throughout different specifications, and reveal expected associations with outcomes variables, such as the role of race in explaining poverty incidence.

The results are significant at the 1 per cent level. In other words, when a mine opens locally, the probability of an individual moving out of upper income poverty increases by 3.0 per cent, *ceteris paribus*. Columns 3 considers the impact on employment. The results show that for individuals located within 10km of a mine, the probability of gaining employment statistically improves by 3.0 per cent. (See Table 70 in APPENDIX B for results at the 30km threshold).

These results complement those of Aragón & Rud (2013, 2016) who show positive impacts of industrial mining activity because the activity acts as a local demand shock. The net impact is conditional on the positive spill overs outweighing the negative environmental impacts. This study goes further by examining Mwt by mine opening (Mwt changes from 0 to 1), and by mine closing (Mwt changes from 1 to 0).

12.6.2. Disaggregating Mwt by mine opening and mine closing

It is important to disaggregate the effect of mine opening and mine closing to ascertain whether the results are driven by mine opening or mine closing[179].

Table 40 – Mine opening and closing by ward

	1996	2001	2011
Opening 10km	n/a	51	26
Closing 10km	n/a	123	14

Source: Author. *Note that the above is not the number of mines closing or opening, but the number of wards that experience an opening of a mine locally.*

[179] To do this, the study created new variables: mine opening (when Mwt is changing from 0 to 1) and mine closing (m from 1 to 0) and estimated the specification on the full sample.

Table 41 – The impact of mine opening/closing on income poverty and employment

	(1) Upper Poverty	(2) Employed
$M_{w,t}$ $open \leq$ 10km	-0.00358	-0.000552
	(0.00657)	(0.00750)
$M_{w,t}$ $closure \leq$ 10km	**0.0208****	**-0.0167***
	(0.00920)	(0.00914)
Constant	1.496***	-0.492***
	(0.142)	(0.145)
Ward fixed effects	Yes	Yes
District x Year fixed effects	Yes	Yes
Observations	19,109,159	19,109,159
Mean of y	0.644	0.315

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The results capture the significant effect of mine closures. Disentangling Mwt shows that closure of mines has a significant effect in exacerbating poverty and reducing local employment levels. This suggests that when an area switches from 1 to 0 (mine closing in an area with one mine only), it increases poverty (extensive margin). When a mine closes, an individual living within 10km of that mine suffers a 2.1 per cent increase in the incidence of income poverty, and 1.76 per cent decline in the probability of gaining employment. This means that either failures of investment that lead to closures (as studied in Part I of the PhD), or end of life of mines potentially have serious negative socio-economic consequences on local communities. This result will be revisited when investigating the intensive margin – which is the additional effect in areas that have several mines. See APPENDIX B Table 71 for results at the 30km threshold).

12.6.3.By commodity, impact of mining at the local level

The overall story is that people living in these largely rural, mining provinces all live under high levels of deprivation, shown by consistently high means in income poverty. However, the results from this research suggest that those people in mining areas have improved chances of moving out of poverty and gaining employment.

This section extends the investigation of the overall impact of mining. It disaggregates the impacts by type of commodity. It may be expected that there are differences in impact because each commodity has different production requirements. For instance, diamond mining may employ

relatively few people because the deposits may be available at relatively shallow and concentrated clusters, compared with other commodities such as coal and platinum. By nature, the infrastructure and input requirements differ for the mining of each commodity (Claassen, 2016). Policy also differs for each sub-sector. For instance, coal is a nationally strategic commodity, so its value chains are more locally embedded, compared to export-driven platinum and gold.

Table 42 – Impact on poverty and employment by commodity within mining areas

	Upper Poverty (A)		Net coefficient (Poverty)	Employment (B)		Net coefficient (Employment)	Treated wards	Non-treated wards
$M_{w,t} \leq$ 10km	(1) $M_{w,t}$	(2) $P_t \times M_{w,t}$	(3)	(4) $M_{w,t}$	(5) $P_t \times M_{w,t}$	(6)	(7)	(8)
(1) Platinum	-0.0314*** (0.0121)	0.00867 (0.0189)	-0.0227 (0.0163)	0.0303** (0.0118)	0.00452 (0.0199)	**0.0348** (0.0176)**	184	461
(2) Gold	-0.0276*** (0.0103)	-0.0255 (0.0321)	**-0.0530* (0.0331)**	0.0281*** (0.0101)	0.0449 (0.0332)	**0.0730** (0.0337)**	114	789
(3) Chrome	-0.0243** (0.0110)	-0.0436** (0.0173)	**-0.0679*** (0.0167)**	0.0336*** (0.0110)	-0.0193 (0.0153)	0.0143 (0.0144)	88	145
(4) Copper	-0.0286*** (0.0106)	-0.0435 (0.0290)	**-0.0721*** (0.0289)**	0.0314*** (0.0105)	-0.00249 (0.0266)	0.0289 (0.0266)	26	174
(5) Feldspar	-0.0318*** (0.0111)	0.0357** (0.0177)	0.0039 (0.0145)	0.0287*** (0.0107)	0.0392 (0.0290)	**0.0679*** (0.0277)**	40	158
(6) Antimony	-0.0251** (0.0104)	-0.0750 (0.0552)	**-0.1001* (0.0541)**	0.0253** (0.00982)	0.105 (0.0725)	**0.1302* (0.0717)**	4	198
(7) Diamond	-0.0294*** (0.0107)	0.000511 (0.0374)	-0.0289 (0.0358)	0.0305*** (0.0106)	0.0366 (0.0378)	**0.0671* (0.0363)**	82	171
(8) Coal	-0.0345*** (0.0105)	0.0250 (0.0206)	-0.0096 (0.0207)	0.0346*** (0.0116)	-0.0158 (0.0167)	0.0188 (0.0151)	95	209
(9) Phosphorus	-0.0304*** (0.0106)	0.0217 (0.0297)	-0.0087 (0.0301)	0.0334*** (0.00987)	-0.0433 (0.0514)	-0.0098 (0.0528)	44	113
(10) Vanadium	-0.0306*** (0.0105)	0.0669*** (0.0251)	0.0363 (0.0255)	0.0318*** (0.0105)	-0.0287* (0.0171)	0.0031 (0.0177)	27	135

Standard errors in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Regressions include Ward fixed effects, and District x Year fixed effects. Note that where there are coefficients dropped, there is insufficient variation. The regressions are carried out using the full sample where N = 19,109,159

Table 42 presents estimation results by commodity. The results show that the story of the impact of mines on local communities is nuanced by type of commodity. This is because each commodity differs in scale, in labour intensity, in localisation of procurement, and in markets served. Of the three biggest metals – platinum, gold, and chrome (Rows 1 to 3) – gold and chrome appear to reduce poverty, while platinum and gold create employment (Row 1 and 2 Column 6), as a net impact in local communities. Focusing on platinum, the commodity price boom increased the probability of a working age person gain employment by 17 per cent, *ceteris paribus.*[180] Diamonds, feldspar and antimony play a significant positive role in improving chances of employment (all almost entirely located in the Northern Cape province), while copper has a poverty alleviating impact (copper is concentrated in one area in Limpopo, the Ba-Phalaborwa local municipality). While coal is a locally embedded commodity that is heavily consumed domestically, its net impacts are not significant. Nevertheless, coal mining areas remain some of the poorest and densely populated areas (Refer to APPENDIX D, Table 78 for the list of commodities wherein most people are located).

The main takeaway is that compared to other neighbouring areas, living in platinum, gold, and chrome areas increases employment chances and moving out of income poverty as defined by the poverty line. These commodities are strong drivers of the overall results. Specifically, the dataset mainly contains two major groups are metals (e.g., platinum, gold, copper), and non- or semi-metal (e.g., phosphorus, antimony). The majority of observations fall in metal ore areas, 13.1 million, while 3.3 million fall in non-metal ore areas. In terms of poverty, being located in metal ore areas reduces poverty by a relatively large 17 per cent compared to negligible impacts in non-metal ore areas. The results are similarly positive in terms of employment, where metal ore areas are net employment creating. (See APPENDIX D, Table 80 for results at 30km).

[180] The calculation is as follows: 0.0348*0.05*100=17 per cent.

12.7. SECTION B – Impact of the commodity price boom

This section evaluates the impact of mining on local poverty and employment when considering the role of changes in commodity prices.

12.7.1. The impact of the commodity price boom

Table 43 – Impact of the commodity price boom on local poverty and employment

	(1) Upper Poverty	(2) Employed
$M_{w,t} \leq 10$km	-0.0214	**0.0448****
	(0.0221)	(0.0226)
$P_{w,t} \times M_{w,t} \leq 10km$	-0.00166	-0.00281
	(0.00356)	(0.00364)
Constant	1.507***	-0.505***
	(0.142)	(0.144)
Ward fixed effects	Yes	Yes
District x Year fixed effects	Yes	Yes
Observations	19,109,159	19,109,159
Mean of y	0.644	0.315

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 43 documents the results of the impact of the commodity price boom. In terms of the extensive margin, the price changes do not have a significant impact in changing poverty but have some net positive impact on employment (column 2). This result will be further disaggregated below. (See Table 72 in APPENDIX B for results using alternative distance thresholds). It is likely that the impact of the commodity price boom is felt more strongly in areas that have several mines (intensive margin).

12.7.2.The impact of the price boom disaggregated by mine opening and closing

Table 44 – The impact of the price boom disaggregated by mine opening and closing

	(1) Upper Poverty	(2) Employed
$M_{w,t}\ open \leq$ 10km	**-0.0161***	**0.0287***
	(0.00939)	(0.0164)
$P_{w,t} \times M_{w,t} open \leq 10km$	0.0030	**-0.00707****
	(0.0018)	(0.00335)
$M_{w,t}\ closure \leq$ 10km	-0.0389	**-0.0464****
	(0.0248)	(0.0223)
$P_{w,t} \times M_{w,t} closure \leq 10km$	**0.0110*****	**-0.0117*****
	(0.00417)	(0.00381)
Constant	1.490***	-0.486***
	(0.142)	(0.144)
Ward fixed effects	Yes	Yes
District x Year fixed effects	Yes	Yes
Observations	19,109,159	19,109,159
Mean of y	0.644	0.315

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 44 documents the estimation results of the impact of the price changes when disaggregated by mine opening and closing. In terms of poverty, mine closures that are associated with the commodity price changes significantly exacerbate poverty. Therefore, mining closures drive up poverty rates. In terms of employment, mine openings associated with changes in prices decrease employment, although the net impact is potentially positive during price booms. In terms of mine closures, these events decrease chances of employment creation. The results are consistent with the theoretical expectations.

12.8. SECTION C – Intensive margin: additional impact if mine already exists

In relation to the intensity/size of nearby mining, in this dataset spatial variation due to opening and closure of mines is limited. This is because several wards with mines have more than one mine. Therefore, whether an additional mine opens, or closes, this would not change the dummy variable of mining activity. However, given the results so far, it is reasonable to expect the amount of local mining activity to matter. Wards with larger mines or number of mines are expected to have greater impacts locally. To test this, the following tables use the count variable, or $C_{w,t}$ described earlier.

12.8.1. The intensive marginal mining impact on poverty and employment

Table 45 – The intensive marginal mining impact on poverty and employment

	(1) Upper Poverty	(2) Employed
$M_{w,t} \leq$ 10km	**-0.0226****	**0.0220****
	(0.0105)	(0.00994)
$C_{w,t} \leq$ 10km	**-0.0116****	**0.0160*****
	(0.00466)	(0.00393)
Constant	1.498***	-0.490***
	(0.144)	(0.146)
Ward fixed effects	Yes	Yes
District x Year fixed effects	Yes	Yes
Observations	19,109,159	19,109,159
Mean of y	0.644	0.315

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 45 shows the additional effect of the opening/closing of a mine in an area with other mines (i.e., beta 1 + beta 2). As expected, the results suggest that mining activity significantly reduces the incidence of poverty when the intensive margin is taken into account. Similarly, mining activity significantly increases employment (see Table 74 in APPENDIX B for alternative distance thresholds). However, these results require disentangling by opening/closing to see the underlying drivers.

12.8.2. The intensive marginal mining impact disaggregated by mine opening and closing

Table 46 – The intensive marginal mining impact disaggregated by mine opening and closing

	(1) Upper Poverty	(2) Employed
$C_{w,t}$ opening ≤ 10km	**-0.0139****	**0.00938****
	(0.00589)	(0.00471)
$C_{w,t}$ $closing$ ≤ 10km	0.00500	**-0.00797****
	(0.00333)	(0.00384)
Constant	1.492***	-0.483***
	(0.144)	(0.146)
Ward fixed effects	Yes	Yes
District x Year fixed effects	Yes	Yes
Observations	19,109,159	19,109,159
Mean of y	0.644	0.315

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 46 documents the results. In relation to poverty, the results suggest that when there are several mines, mine closure has no significant effect while additional mine opening tends to reduce poverty (intensive margin). Given that there have been several closures of mines, it is interesting and important to note that mine openings are a significant source of income poverty alleviation in surrounding areas. This result would likely differ by commodity, with areas that have experienced several mine closures than openings seeing a rise in local income poverty. In relation to employment, the results remain consistent. Mine opening increases the probability of an individual gaining employment within 10km, compared to those farther, while mine closure reduce the chances of gaining employment. (Table 75 in APPENDIX B shows the results using alternative distance thresholds).

12.8.3. The intensive marginal mining impact and the price boom impact on poverty and employment

Table 47 – The intensive marginal mining impact and the price boom impact on poverty and employment

	(1) Upper Poverty	(2) Employed
$C_{w,t} \leq 10$km	**-0.0106****	**0.0220*****
	(0.00416)	(0.00801)
$P_{w,t} \times C_{w,t} \leq 10km$	-0.000786	-0.000943
	(0.00111)	(0.00153)
Constant	1.488***	-0.483***
	(0.145)	(0.146)
Ward fixed effects	Yes	Yes
District x Year fixed effects	Yes	Yes
Observations	19,109,159	19,109,159
Mean of y	0.644	0.315

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 47 presents results for mining intensity and price changes. The results suggest that on a net impact basis, the role of the commodity boom is poverty alleviating in areas that have several mines, and it is employment creating in these areas. This finding is consistent with the findings so far. (See Table 76 in APPENDIX B for results based on alternative distance thresholds).

Overall, the results have been consistent and are summarised as follows:

Extensive margin

(a) By $M_{w,t}$: individuals living within 10km of mines become less income poor than those living farther. The results show that for individuals located within 10km of a mine, the probability of gaining employment statistically improves by 0.03 per cent.

(b) By opening/closing: Disentangling Mwt shows that closure of mines has a significant effect in exacerbating poverty and reducing local employment levels.

(c) By commodity: Of the three biggest metals – platinum, gold, and chrome – gold and chrome appear to reduce poverty, while platinum and gold create employment. In net impact terms, coal does not have a significant impact, though this result would likely be different when looking at the intensive margin.

Extensive margin and the price boom

(d) In terms of the extensive margin, the price changes do not have a significant impact in changing poverty but have some net positive impact on employment.
(e) In terms of poverty, mine closures that are associated with the commodity price changes significantly exacerbate poverty. Mine closures decrease chances of employment creation.

Intensive margin

(a) By $M_{w,t}$: mining activity significantly reduces the incidence of poverty when the intensive margin is taken into account. Similarly, mining activity significantly increases employment.
(b) When there are several mines, mine closure has no significant effect while additional mine opening tends to reduce poverty.
(c) Mine opening increases the probability of an individual gaining employment within 10km, compared to those farther, while mine closure reduce the chances of gaining employment.
(d) The role of the commodity boom is poverty alleviating in areas that have several mines, and it is employment creating in these areas.

12.9. Main Results C: Robustness checks

This section undertakes robustness checks, to rule out the possibility that the results are driven by factors other than mining. To achieve this, the section unsuccessfully attempted to implement the instrumental variable strategy. This procedure will be revisited in post-doctoral work. Instead, the section considers alternative specifications and price proxies, as well as clustering standard errors at different levels.

12.9.1. Alternative specifications

Following literature that applies similar empirical strategies to isolate the impact of mining, this subsection undertakes additional checks to exclude the possibility that the results are driven by misspecification. The following is implemented. First, the standard regression is rerun by taking individual level weighting explicitly into account to see if this changes the results. Second, following Aragon and Rud (2013), $M_{w,t}$ is replaced with continuous distance, with the hypothesis that significance will dissipate. This would support the case that in reality, the opening or expansion of a mine creates local exposure that dissipates with distance. Third, the poverty variable is a function of the income variable. This is taken into account to directly check how incomes in mining areas are impacted, and whether statistical significance remains. Finally, the study relies on the metal price index as a proxy for the price boom. An alternative proxy could be the gold price, which is also internationally determined, with South Africa having little to no influence on the price given its waning gold mines.

Table 48 presents the results. Taking account of person weighting (columns 1 and 2) to run the baseline specification does not change the results. When using continuous distance to account for the impact of mining, the variable loses significance (column 3). Replacing the categorical income variable as an outcome variable (see Table 81 for its composition), the results remain consistent (column 5). To evaluate whether the results were purely driven by price, column 6 shows that the log of gold price retains the same results.

Table 48 – Table of alternative specifications: weighting, distance, price proxy and alternative y variable

	(1) Upper Poverty	(2) Upper Poverty	(3) Upper Poverty	(4) Income	(5) Income	(6) Upper Poverty
	Person weighted	*Person weighted*	*Continuous distance*	*Alternative y variable*	*Alternative y variable*	*Price proxy*
$M_{w,t} \leq$ 10km	-0.0222***	-0.0224		-0.0332***	0.175***	-0.0896***
	(0.00877)	(0.0220)		(0.00354)	(0.0153)	(0.00347)
$P_{w,t} \times M_{w,t} \leq$10km		-0.00162			-0.0525***	
		(0.00351)			(0.00379)	
Distance			-0.00000856			
			(0.0000216)			
$Gold\ P_{w,t} \times M_{w,t} \leq$10km						0.0127
						(0.0541)
Constant	1.224***	1.522***	1.219***	2.410***	2.415***	1.223***
	(0.00121)	(0.00121)	(0.00138)	(0.00526)	(0.00528)	(0.00113)
Ward fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
District x Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	19,440,143	19,440,143	19,440,143	19,440,143	19,440,143	19,440,143
Mean of y	0.636	0.636	0.636	2.364	2.364	0.641

Standard errors in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

12.9.2. Placebo, clustering, and different estimation procedure

The checks under this section are discussed at length in APPENDIX C. The placebo attempts to rule out a possibility that the results are driven by the construction of the distance variable. As such, an experiment is undertaken to create a "placebo" distance variable in order to rerun the regressions. The results in Table 77 (APPENDIX C) lose significance, confirming that the construction of distance was not a fictional or coincidental creation.

Incorrect standard errors violate the assumption of independence, and may lead to standard errors that are smaller than regular OLS standard errors and misleadingly small p-values (Colin Cameron & Miller, 2015). To rule out this concern, standard errors are clustered at the municipal level. The results remain significant and maintain the same signs as the main findings.

Finally, an alternative specification for such a study would be the panel logistic function with fixed effects. The merits and limits are discussed in APPENDIX C. Even when running the specification using this estimation procedure, the results remain consistent.

12.10. Alternative explanations, limits, and future improvements to the study

12.10.1. Alternative explanations

It may be possible that the preceding sections' findings only capture factors other than mine activity that explain the fall in the share of poverty. The following discusses the possibility of increased tax revenue and selective migration as alternative explanations for the results.

12.10.1.1. Tax revenue explanation

Generally, local governments receive tax revenue from local operating mines, in which case the impact of mining may run through this channel. For example, there could be an expansion of public employment, which could lead to increased local wages, or a demand shock from increased public works (Aragón & Rud, 2013). The following two reasons make it unlikely that the preceding results capture this channel. Firstly, the analysis of this study is at the ward level. Tax is collected at the national level, and rates at the municipal level. Municipalities have a strict mandate to allocate tax revenue equitably, prioritising poorer areas.

In this case, the results should not have found economic benefit from mining activity that occurs only within the 10 kilometre distance of exposure. This is because municipalities consist of wards spreading beyond the 10 kilometre threshold. Therefore, given the policy mandate, there is no reason that tax revenue expenditure would be confined to wards with mining. On the contrary, the poorer areas are likely to benefit more from this tax. Unfortunately, this study cannot formally evaluate this possibility, because of the dataset's limitations.

12.10.1.2. Selective Migration

Before a mine is established, it is necessary to undertake processes concerning approvals from government and community stakeholders. Generally, these take more than a year to complete. The anticipation of a mine opening could alter the composition of the local population through selection. It is not known whether the opening of a mine leads to positive or negative migration. Nonetheless, compositional changes of the population, if significant, affect poverty and employment levels. It may be that in anticipation of the opening of a mine, the poorer move closer to the mining area while the wealthier move farther away in anticipation of the negative health and migration impacts. This changes community characteristics and biases the true size of the impact of a mining demand shock. Alternatively, the opening of a mine or mine expansion could attract productive labour, which would exert downward pressure on income poverty.

The current dataset is unable to directly address this concern, because of lack of migration data. This is a limitation that requires further exploration at the post-doctoral phase. Notwithstanding, other studies applying the same identification strategy (Aragón & Rud, 2013; Tolonen, 2014; Bazillier & Girard, 2020), also rule our migration as the driver of their results, given the integrity of the identification strategy.

12.10.2. Improvements to the study

12.10.2.1. Data

The main limitation to this study is the availability of data that could provide a richer set of variables. This includes information on prices of local goods, health outcomes, environmental outcomes, and more waves in the panel. For instance, the provinces studied have large agricultural sectors, and a better understanding of the impact of mining on this sector is important.

The option considered for this study to address the above is the National Income Dynamics (NIDS) survey data, which is a national panel study of households in South Africa. The survey is specifically designed to track and understand shifting national socio-economic wellbeing. The NIDS started in 2008 and covers five waves to 2017. Unfortunately, the dataset is only representative at provincial level. Though geocoded data is available with permission, the creators discouraged using the dataset at ward level.

12.10.2.2. Test for pollution using rainfall data

Pollution is one of the main hazardous effects caused by industrial mining. This variable may be valuable as a control to the model specification. Tolonen (2014) uses rainfall indicator interacted with a dummy for an active mine. This method as a measure of pollution effects is justified because the geographic spread of pollutants from mines can increase with rainfall. By merging rainfall maps, this method is feasible for this study in future.

12.11. Conclusion

What is the statistical impact of industrial mining on local hosting communities in South Africa? This is a contentious, politically charged, and under-researched question in South Africa. The country has a long, divisive mining history. Under the colonial and Apartheid regimes, the large diamond rush of the 1800s and the gold rush of the late 1800s to mid-1900s initiated a century of oppression and exploitation of black people in South Africa. In post-Apartheid South Africa, there has been some transformation in policy and in the behaviour of mining companies. However, there is no agreement on the extent to which industrial mining has positively transformed surrounding communities. More recently, it is unclear whether local mining communities benefit enough from the most recent 2000s commodity price boom to experience significant communitywide upliftment. Without a quantified enquiry, how will the next boom be managed? It is no longer enough to measure mining contribution at national and provincial level, nor is exhaustive reporting of corporate social initiatives enough. The policy and stakeholder dialogue requires tangible estimations of the socio-economic impacts of mining at the very local level.

This research sought to concretely address this question. It used a large, locally representative census sample of roughly 20 million observations across five major mining, poor provinces between 1996 and 2011: from the start of democracy to the peak of the commodity price boom

and the peak of mining BEE deals. The dataset was merged with geocoded data of roughly 400 mines per year, and with world commodity prices. To isolate the impact of mine expansion on local income poverty and employment outcomes, the study exploited three sources of variation.

The findings range from general to nuanced. Generally, when a mine opens, locally the probability of an individual moving out of income poverty increases significantly. Similarly, the probability of gaining employment increases significantly. The commodity price boom is an important moment. The boom amplifies both the benefits and trade-offs of mining activity. First, the price boom brings additional reduction in income poverty in surrounding areas and amplifies the probability of gainful employment for those in surrounding areas. However, employment for the mass cohort of workers in surrounding areas is highly elastic, and therefore volatile. There is a major concern about creating sustainable economic opportunities beyond boom periods.

Considering variation by commodity, of the three biggest metals – platinum, gold, and chrome – gold and chrome appear to reduce poverty, while platinum and gold create employment. In net impact terms, coal does not have a significant impact, though this result would likely be different when looking at the intensive margin. The study remains concerned that employment is volatile, depending on the commodity price changes. This is an issue to be carefully studied in future research.

In closing, for this present study, a focus on income poverty and employment is important but insufficient, given all the possible trade-offs of mining at the local level. Overall, the direction of impact of mining on local poverty and employment will depend on the strength of economic linkages and positive multiplier effects versus the intensity of harmful spill overs from mining. Therefore, a key policy action is to amplify the positive impacts of mining. This would include creating an environment in which there are plans to use the increase in incomes and employment during booms to create channels to education and skills investment, better local accountability for the use of windfalls, and diversification to sustain economic opportunities. This is not the job of mining companies, but collective stakeholder partnership, especially because this involves land and people.

CHAPTER 13 – Relief or additional curse: the discovery of minerals in former homelands and the impact of the 2000s commodity price boom, 1970-2011

13.1. Introduction

High levels of poverty persist in South Africa, especially in rural, mostly mineral rich areas. These high levels of poverty are systematically tied to a history of black enclaves in these rural areas created under the racial policy of Separate Development. This policy entailed the forced, mass removal of millions of black South Africans from the areas designated as 'white', and their resettlement in the "African reserves", or homelands[181] (Baldwin, 1975). The British colonialists who laid the foundations of the Apartheid policy , carried out earlier mass removals. They followed policy guidelines set out in the 1913 Native Land Act, the 1923 Stallard Commission-informed legislation, and the 1936 Land Act which set the boundaries for land which would constitute the reserves.

The accession to power in 1948 of the National Party, with its explicit Apartheid policy, accelerated these efforts, especially in the 1960s. Forced removals took on a more systematic nature, supported by legislation such as "the Group Areas Acts of 1950 and 1957, the Natives Resettlement Act of 1954, the Native Trust and Land Amendment Act of 1954, and the Native (later Bantu) Laws Amendment Acts of 1952, 1963, 1965 and 1970" (Baldwin, 1975). Simultaneously, the institutional framework for Separate Development was established by the Bantu Authorities Act of 1951, the Promotion of Bantu Self-government Act of 1959, the Bantu Homelands Constitution Act of 1971, and the Bantu Affairs Administration Act of 1973 (Baldwin, 1975). The aim of Separate Development was to maintain race separation to the advantage of white people, and to maintain a reserve of cheap labour consisting of disenfranchised black people. This

[181] This study will use the terms "homelands" and "former homelands" interchangeably. If referring to post-1994 South Africa, the correct term is "former homelands". Similarly, the study will also refer to "non-homeland" areas, meaning areas that never were homelands throughout history. "Wards", "areas", and "communities" are also used interchangeably, but the technical term is "municipal wards".

black labour was crucial for industrial expansion, especially in mining and energy related industrial activity. The fulfilment of the policy entailed providing black people, 80 per cent of the population, with their own political institutions within ten "self-governing Homelands", entirely outside the white political system.

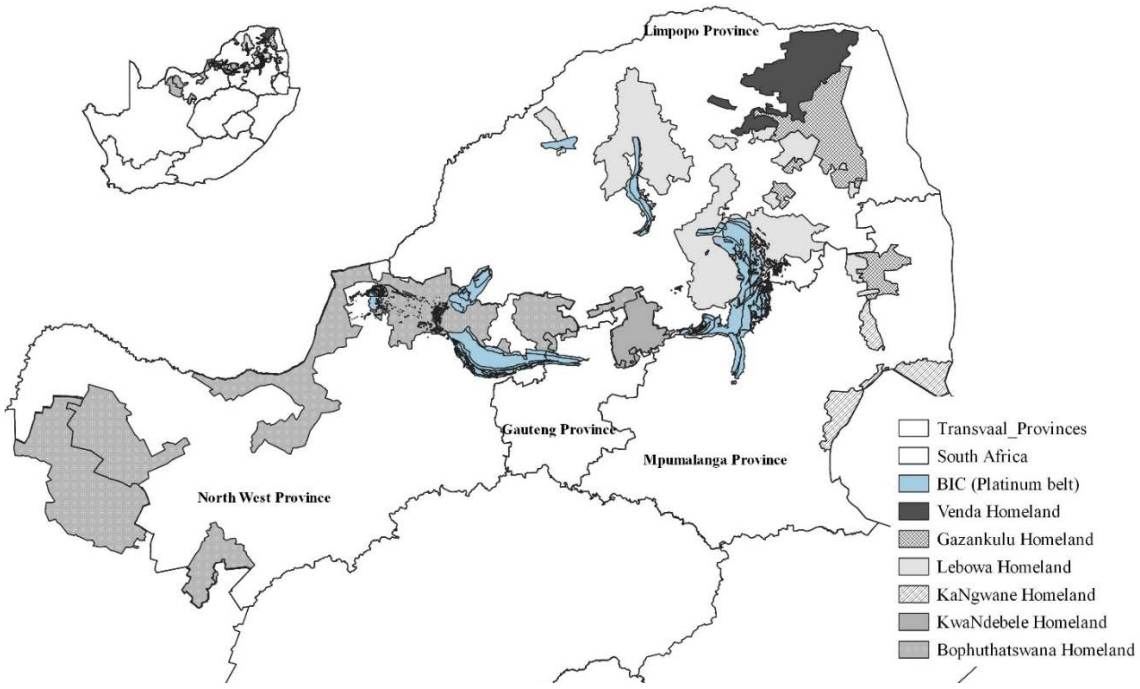


Figure 51 – Homelands in the region of the former Transvaal province, South Africa
Source: Author.

One important coincidence of the creation of homelands was the discovery of large mineral deposits in most of these areas situated in the former Transvaal, covering the Limpopo, Mpumalanga, and North West provinces (Figure 51) of post-apartheid South Africa. The main geological intrusion in these areas is platinum. It is not obvious whether the discovery of minerals there, and the subsequent development of mining activity especially during the 2000s commodity price boom, has brought relief or an additional curse to these former homeland areas.

Mining does not and should not replace public goods and wider labour absorbing industrial development. Nevertheless, despite the development of mining activities and legislation to turn mining into community-uplifting economic activity, high levels of poverty persist. The creation of homelands was intimately tied to the colonial-apartheid imperative to create cheap black labour largely feeding into mining. Therefore, the story begins with mining as part of the social

engineering project to create and maintain cheap black labour power. As a consequence, the history of mining in South Africa is associated with the exploitation and deprivation of black people.

The resource curse literature would suggest that the development of mining in former homelands would exacerbate poverty, partly because of the enclave effect[182]. The enclave effect means that mining companies would have no interest in developing local procurement linkages for the supply of labour, goods, and services. In the absence of enough localisation of economic activity, this would mean the negative impacts of mining would be severely felt without relief from economic gains. The negative effects include soil degradation, acid rain and associated erosion of subsistence and commercial agriculture, rise in local property prices, and respiratory health conditions. On the other hand, significant development of mining in these homeland areas came in the 2000s, coinciding with government-sponsored wholesale sale of mineral rights (see Nxele, 2022), and the worldwide commodity price boom.

These areas experienced a lot of protests during the boom period. What has been the impact of the intersection of homelands and mining? Has the development and expansion of mining in former homeland areas created a double enclave effect? Or has the mining activity, most of which consists of black economic empowered mines in platinum, mitigated the poverty and unemployment in these areas? Answers to these questions will contribute to a more informed and nuanced historical and empirical understanding of the relationship between enduring homeland policy effects and mining activity.

Using South African census data, this chapter has three objectives. The first objective is to provide a contextualising argument that the creation of homelands explains much of the "time zero" or historically high levels of poverty and unemployment in the former homeland provinces. This goal will be achieved by a review of literature, and by descriptive data collected from South African censuses of 1970, 1980, and 1991. The second objective is to empirically investigate the role of mining in these former homelands between 1996 and 2011, using merged census information of 19 million observations, and mining data from over 400 mines. The aim is to move this important story away from correlations, and closer to causations. In the absence of that shift, the homeland

[182] By "enclave effect", the study means the isolation and underdevelopment characteristic of the Separate Development policy.

story suffers an inherent endogeneity problem. Did mining cause poverty in homelands, or is the persistence of high levels of poverty driven by systemic factors of homeland design?

The third objective is to go beyond studying homelands as a collective, homogenous entity, and instead to provide some empirical results for each homeland that could initiate case studies for future research.

Comparing mining wards[183] located in homelands to mining wards outside of homelands, the study finds persistent disadvantages for individuals located in former homeland areas. Industrial mining activity reduces local income poverty and increases chances of employment, but this effect is dissipated in homeland areas. Further inquiry of within-homeland variation shows that there are pockets of substantial mining developments, such as the Lebowa homeland area, where individuals located in mining wards within homelands have enjoyed mining-related upliftment in terms of poverty and employment. The benefits are also felt strongly in Venda.

The rest of the chapter is organised as follows. Sections 13.2 and 13.3 outline the history of the creation of homelands and the history of the discovery of minerals, respectively. Section 13.4 briefly discusses theoretical considerations relating to separate development in homelands. Section 13.5 outlines the empirical strategy and data. Sections 13.6 and 13.7 provide the empirical results. Finally, section 13.8 concludes.

13.2. Building Enclaves: The creation of poverty and the development of mining in South Africa

To understand the high poverty and unemployment in former homelands, and the impact of mining, it is necessary to analyse this relationship from a historical perspective. The review of history from the early 1970s will establish a strong case for the enclave thesis of mining in former homelands. This will permit an investigation into how much progress there has been in integrating mining into economic development in former homeland communities. Thus, this section explains the origins of high levels of poverty and unemployment, and the formation of the mining-community relationship in former homelands.

Most of the provinces under study were not provinces before 1994. They were a collection of separate “homelands” or “Bantustans” within “white-reserved South Africa” that were meant to

[183] Wards are local level geopolitical boundaries used for electoral purposes and accountability. They are smaller than local municipalities. Each local municipality is subdivided into several wards. A “mining ward” is a ward that contains one or more mines.

be independent states, separate from the Republic of South Africa[184]. These were less valued areas on the margins, reserved for black people after land dispossession. Their sole purpose was the permanent removal of the black population from white South Africa (Manson, 2013). This development was one of the major causes of densely populated enclaves within South Africa. See Table 84 in APPENDIX F for changes in population numbers.

Due to underdevelopment and lack of opportunities, the homelands were economically dependent on the then Republic of South Africa. The majority of income was generated from migrants who worked in the Republic, while production within the homelands typically constituted less than one-quarter of total area income. The homeland government was also heavily reliant on funds from the Republic; it lacked a tax base, and was barred from taxing white businesses or mines operating within its borders (Butler, Rotberg &, 1978).

Table 49 – Annual income of provinces and homelands, census 1991

Province/Homeland	No income	Below R1000	R1000 to R4999	R5000 to R14999	R15000 to R49999	R50000 to R149999	R150000 +	Unspecified
Cape	0.54	0.03	0.16	0.13	0.10	0.02	0.00	0.01
Natal	0.52	0.03	0.15	0.13	0.12	0.03	0.00	0.01
Transvaal	0.47	0.03	0.14	0.15	0.14	0.05	0.00	0.02
Free State	0.54	0.06	0.14	0.16	0.07	0.02	0.00	0.01
KwaZulu	0.82	0.03	0.09	0.04	0.01	0.00	0.00	0.01
Lebowa	0.85	0.02	0.07	0.04	0.02	0.00	0.00	0.01
Gazankulu	0.84	0.03	0.07	0.03	0.02	0.00	0.00	0.01
KwaNgwane	0.81	0.03	0.08	0.05	0.02	0.00	0.00	0.01
QwaQwa	0.67	0.05	0.15	0.08	0.04	0.01	0.00	0.01
KwaNdebele	0.78	0.02	0.10	0.07	0.02	0.00	0.00	0.01
Bophuthatswana								
Ciskei	0.77	0.03	0.15	0.04	0.00	0.00	0.00	0.01
Venda	0.83	0.01	0.11	0.03	0.02	0.00	0.00	0.00

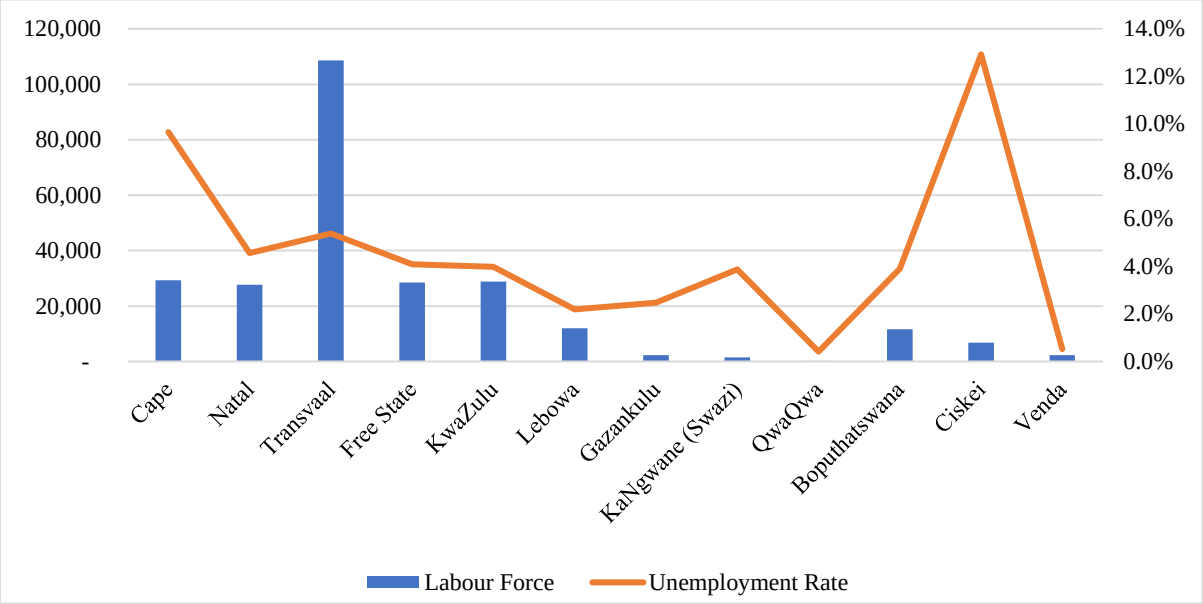
Source: Statistics South Africa Census 1991

Table 49 documents the descriptive statistics of annual income by province and homeland. In 1991, there were 5 homelands in which more than 80 per cent of their populations earned no income. In decreasing order of income poverty, they were Lebowa, Gazankulu, Venda, KwaZulu, and KwaNgwane. The 1970 census data shows that in these homelands, about 60 per cent of people

[184] Refer to Butler, Rotberg, & Adams (1978) for a history of the homelands.

lacked formal education, and 35 per cent had only a primary school education. See Table 85 in APPENDIX F.

Figure 52 – Labour force and unemployment rate across homelands 1970



Data source: Statistics South Africa census 1970

Figure 52 shows the very low numbers of employed people in the homeland areas. Most employed people were in non-homeland areas, being the Transvaal, Cape, parts of Natal, and the Orange Free State[185]. The census purports that the unemployment rate in homeland areas averaged around 4 per cent, which is inconsistent with the data. It is possible that the Apartheid-led Statistician regarded the majority of homeland-based people as "not economically active".

13.3. The discovery of minerals

Out of a total of 9 South African provinces, the 5 poorest are in former homelands. They are pockets of unproductive land allocated to black people as part of the process of forced removal from the Union of South Africa, which was formed in 1910. Thus, the demarcation and fragmentation of homeland areas preceded the discovery of rich mineral deposits. In the 1920s, it was discovered that large tracts of the land allocated to homelands, including portions which were purchased by black people, in particular, the Bafokeng community, contained substantial deposits of platinum group metals. This area consists of the eastern and western part of the Bushveld

[185] Excluding the small homeland of Qwa located in the Free State.

Igneous Complex which largely lies in the current Limpopo and North West provinces. However, the mining of these metals is distinguished by an expensive and highly specialised extraction process, with a volatile demand. Therefore, this discovery of minerals could not be mined by locals who had no capital or skills.

Indeed, by the 1970s, it was becoming clear that the northern homelands were rich in mineral deposits, having not been previously systematically surveyed for mineral wealth (Butler et al.,1978). Gazankulu had gold, Venda had copper, Lebowa had platinum and other deposits including crocidolite, corundum, coal, iron, titanium, and vanadium. Mineral rights in these areas were held by the South African State, the Bantu Trust, tribal communities, and individual blacks[186]. During this time, the government of South Africa granted 261 prospecting permits and 109 mining leases in homeland areas, but these were only allocated to white persons or white-owned companies or persons (South African Institute of Race Relations, 1971). See Table 86 in APPENDIX F for prospecting activity.

Table 50 shows mines in operation, the associated black employment, and earnings.

Table 50 – Mining activities by private sector during 1979

Homeland	Number of mines in production	Number of Black in employment	Earnings R
Gazankulu	4	225	67 011
Lebowa	21	8 080	11 883 000
Venda	4	303	77 627
Ciskei	3	78	98 036
KwaZulu	16	511	1 046 831
KwaNgwane	6	1 613	1 449 733
QwaQwa	2	38	19 819
KwaNdebele	1	18	4 330
Total	**59**	**11 602**	**15 203 906**
Mining Corporation			
Lebowa	1	458	362 148
Gazankulu	1	278	195 371

Source: South African Institute of Race Relations (1981)

In order to guide the greater white and black exploitation of homeland mineral resources, a body called the Bantu Mining Corporation was established. According to Butler et al. (1978), the corporation was meant to oversee existing operations and act as an agent for individual Africans

[186] See Mason (2013) for a history of black ownership of these lands.

and communities in their negotiations with white companies. However, the corporation only principally awarded white mining interests access to homeland mineral deposits. The homeland governments had no authority to specify the terms of mineral exploitation. In view of this, Butler et al. conclude that this was a classic example of enclave mining behaviour in an underdeveloped setting. There were very poor backward linkage effects from mines and limited employment and income multiplier effects, because the few locals employed received minimal wages, and the workers did not spend the bulk of their funds in local shops. Furthermore, there were few internal forward linkages into processing and fabrication.

By 1979, there were 59 mines operating in the homelands, the majority of which were in the northern region. These mines employed approximately 12,000 black workers, of which over 80 per cent worked in the north (Table 50). The Mines and Works Act specified the types of jobs that Africans could perform. It excluded them from jobs like sampling, welding underground, or driving an underground locomotive if whites were on board. The industry also applied wage discrimination. The starting salary in 1979 of underground work returned R350 for a white person but only R100 per month for an African, and R240 for surface work compared to R75 for an African. As a result, of the total wage payments made by the Chamber of Mines in 1988 and 1989, only 3.5 per cent went to homeland-based workers. See Table 87 in APPENDIX F. Royalties from mining operations were paid into the S.A. Bantu Trust, which collected these royalties from the use of tribal land and Trust land. However, the government ministry in charge could not say what percentage of these revenues were allocated to the "African tribes" (South African Institute of Race Relations, 1990).

There are three critical "enclave effects" evident in relation to early mining in homelands: (1) mines were not locally owned, and royalties were not fully controlled by local representatives; (2) employment creation by mines was limited both directly and indirectly as locals were not part of the supply chain, nor were there skills transfers because of the colour bar legislation; (3) for the employed locals, records suggest that the majority were employed outside of the homelands, where they spent most of their wages. Thus, homelands were themselves created enclaves, while mining in these areas was enclave in nature, creating very little possibilities of local economic upliftment. In effect, there were enclaves within enclaves – a double enclave.

13.4. Theoretical considerations: “Leakages” to “linkages” model

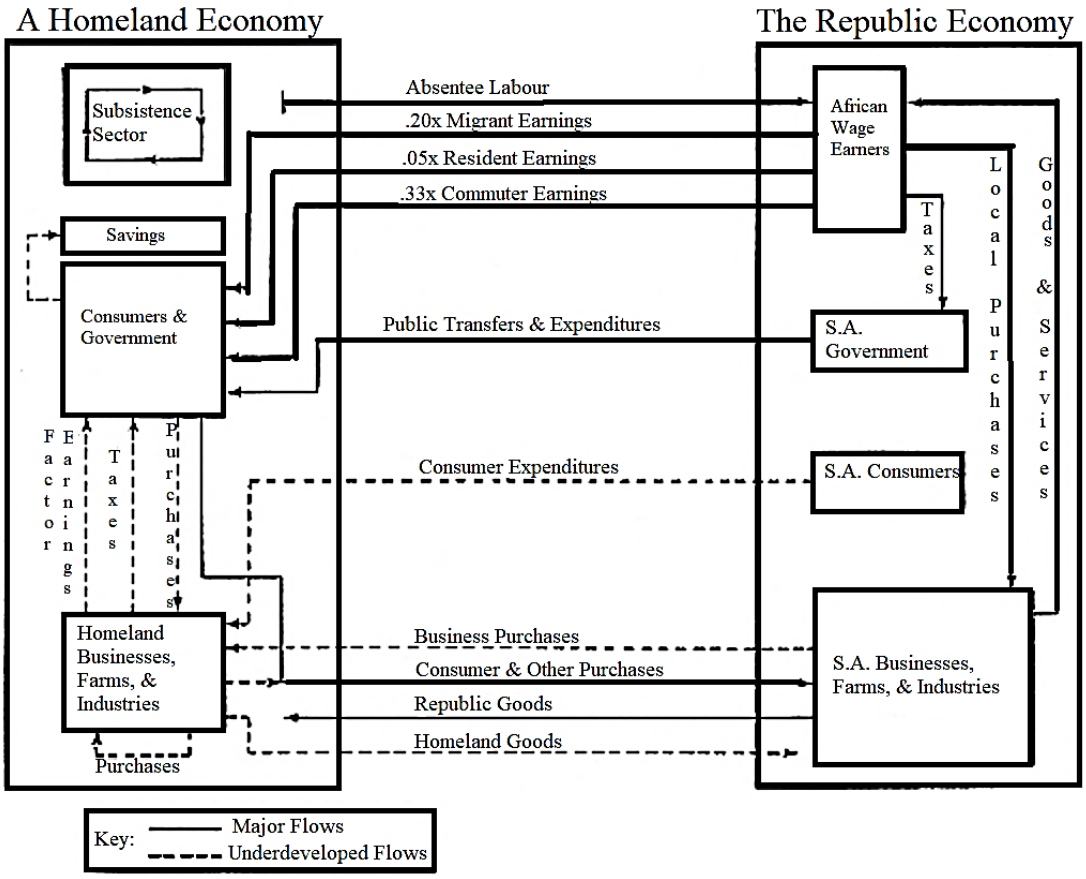
13.4.1. Leakages

When analysing the impact of mines on the homeland of Bophuthatswana, Butler, Rotberg, and Adams (1978) find that data showed extremely limited impact of mines on local incomes of homeland residents. They argue that under the then institutional arrangements, growth in the extractive sector in these areas did not contribute in a major way to the development of the homeland, because “the genesis of income-creating forces lies outside the homelands in the private and public sectors of the Republic [of South Africa]” (p.137) .

This apparent core versus periphery setup led to an analysis of the underdevelopment of the homelands that was called the “leakages” model. This encapsulated the idea that “public spending and private investment in the homelands will “leak” back into the [South African] White economy, which would itself then experience the multiplied effects on income, consumption, savings, and employment, rather than the homelands” (Butler, Rotberg, and Adams 1978:138).

From their data, the authors constructed a flow chart depicted in Figure 53, where solid lines represent major flows, and weak, underdeveloped linkages appear as dashed lines. The essence of the diagramme demonstrates that the major export from the homelands was labour, which in turn spent a large portion of its earnings in white and Asian stores. Therefore, there were no “secondary multiplicative or cumulative effects because they ‘leak’ away immediately to non-African businesses and industries as ‘consumption expenditures’” (Butler, Rotberg, and Adams 1978:140). In addition, virtually all capital expenditure was made outside the homeland, and any funds that were in circulation did not stimulate local enterprise and employment.

Figure 53 – The flows of labour, money, and goods between homelands and the Republic



Source: Butler, Rotberg, & Adams, 1978

13.4.2.Linkages

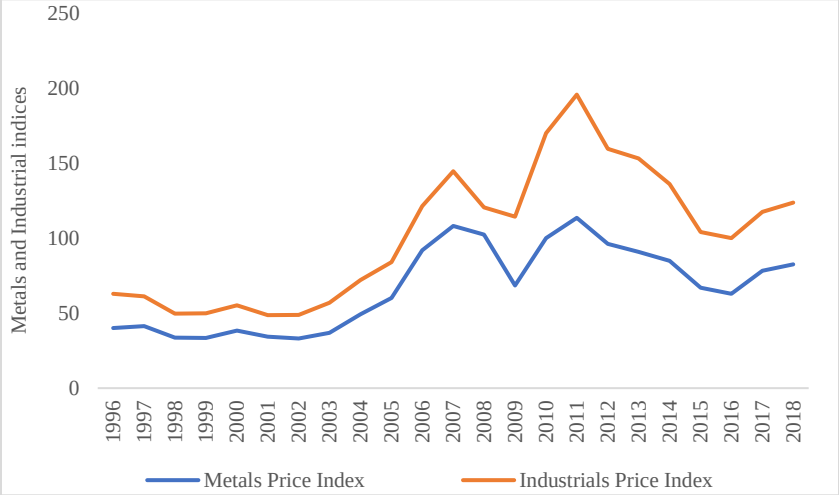
The reintegration of homeland areas into South Africa in 1994, and the change in mining legislation in 2002 that encouraged greater local procurement in surrounding areas has presented an opportunity for the creation of a localised economic relationship between mining and local communities in former homelands. The introduction of mining policy, as well as the 2000s commodity price boom, present an empirical opportunity to evaluate the short-term impact of these exogenous changes. These changes present an opportunity to assess whether or how much the enclave theory (or "leakages theory") still explains the economic relationship between mining and local economies in former homelands. This gap highlights the importance of the present study because its results may provide new insights into the role of mining in South Africa's former homeland areas.

13.5. Empirical strategy

13.5.1. Data and identification strategy

The aim of this section is to empirically investigate the impact of mining in the former homeland areas. It does so by comparing mining areas in homelands with mining areas in non-homelands, and comparing mining areas in homelands with non-mining areas in homelands. The persistence of underdevelopment in mining areas within homelands, and the dominance of mining, make this area ideal for isolating the impact of mining activity on ward-level outcomes of poverty and employment. Moreover, the discovery of platinum in these areas, and the specific expansion of platinum mines driven by the commodity boom (Figure 54) and policy, especially on the Limpopo province (Lebowa homeland), add to the merit of this study.

Figure 54 – Commodity Price boom, 2000s



Data source: Index Mundi

The census data of 1970, 1980, and 1991, used descriptively in the preceding sections, is not accessible at the person level to enable merging with census data collected in democratic South Africa. Therefore, this section will utilise the three waves of census data from 1996, 2001, and 2011, and combine it with geocoded mining data, to study the impact of mining in homeland areas. To identify homeland wards, the study merged two types of maps: maps of the former homelands sourced from the Department of Environmental affairs (Department of Forestry, Fisheries and the Environment, 2015) and the ward maps from the Municipal Demarcation Board (Municipal Demarcation Board, 2017). The empirical strategy employs three main sources of variation. The

first is the distance from a ward to a nearest mine, driven mainly by new mine openings or the closure of older or uneconomical mines. The second source of variation is the rise (or change) in commodity prices, which potentially acts as a proxy for the changes in the magnitude of mining activity. A third source of variation compares the different commodities mined in these areas: within homelands; between homelands; and between homelands and non-homelands.

The study is essentially a difference-in-differences procedure that uses the opening and closing of mines and the price boom as the treatment. Figure 55 and Figure 56 illustrate the basic idea behind the identification strategy. The diagrams plot the conditional mean of poverty for individuals located within 10 km of the nearest mine and those located farther away in Lebowa and Bophuthatswana respectively.

Figure 55 illustrates that before 2001, individuals living in Lebowa and close to some mining activities were poorer than those living in wards without mines. Post 2001, individuals who suddenly found themselves in wards with developing mines experienced a relative sharper decline in income poverty. Figure 56 shows the results for the Bophuthatswana homeland. This homeland had large mines for decades well before 1996. Moreover, local communities such as the Bafokeng own large tracts of the land where the mining occurs. It is no surprise that the trend shows lower average poverty in wards with mines, by a descriptively large gap.

Figure 55 – The conditional mean of poverty: Lebowa homeland, Limpopo

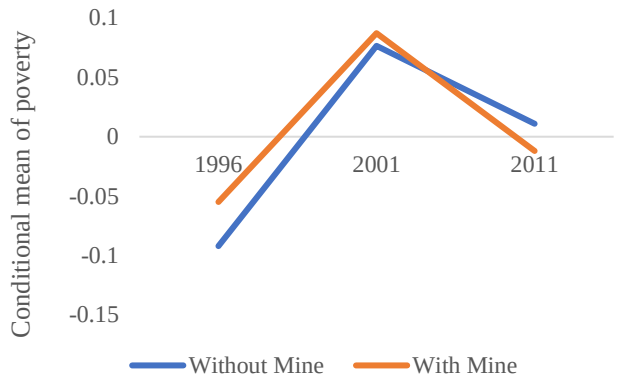


Figure 56 – The conditional mean of poverty: Bophuthatswana homeland, North West

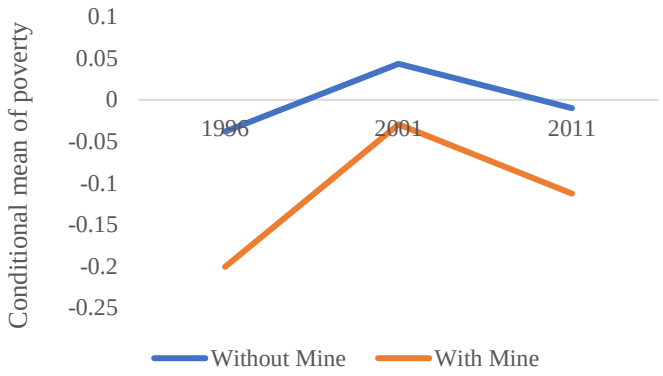


Table 51 – Poverty and unemployment, and mine opening/closing trends between 1996 and 2011

	1996	**2001**	**2011**	Detail
All five provinces				
Number of people in homelands	3,881,503	4,156,139	4,468,172	
% People in upper poverty - overall	58%	73%	60%	
% People in upper poverty - homelands	65%	78%	68%	
% People in no income poverty - overall	52%	64%	49%	
% People in no income poverty - homelands	61%	70%	56%	
Non-homelands				
Number of people in non-homelands	3,417,792	2,859,236	4,025,542	
% People in upper poverty – non-homelands	49%	65%	52%	
% People in no income poverty – non- homelands	42%	56%	42%	
Within former homelands & $M_{w,t} = 1$				
Number of people in $M_{w,t} = 1$	2,386,063	2,728,522	2,860,688	
Number of poor people in $M_{w,t} = 1$	1,515,271	2,093,612	1,940,771	
% People in poverty in $M_{w,t} = 1$	0.64	0.77	0.68	
Employment in $M_{w,t} = 1$	0.26	0.22	0.27	
Outside of former homelands & $M_{w,t} = 0$				
Number of people in $M_{w,t} = 0$	618,735	799,801	955,699	
Number of poor people in $M_{w,t} = 0$	322,291	541,164	506,979	
% People in poverty in $M_{w,t} = 0$	0.52	0.68	0.53	
Employment in $M_{w,t} = 0$	0.47	0.36	0.41	
Information on wards and mines in homelands				
Number of homeland wards	900	900	900	
Number of non-homeland wards	924	924	924	
Number of homeland wards in $M_{w,t} = 1$	482	316	345	
Number of non-homeland wards in $M_{w,t} = 1$	490	268	318	
How many homeland wards have mines?	54	41	44	
How many non-homeland wards have mines?	123	73	92	
How many homeland wards have more than one mine?	23	19	21	c.23% average
Max number of mines within a ward	9	8	9	
Average number of mines excluding maximum	2	2	2	
Number of homeland wards in $M_{w,t} = 0$	418	584	555	
Net number of wards exited mining (1996-2001)		166		
Net number of wards entered mining (2001-2011)			29	
Information on mines				
Number of mines in homelands	124	93	107	Net closure
Number of mines in Bophuthatswana	56	47	49	Net closure
Number of mines in Gazankulu	2	2	2	Net zero
Number of mines in KwaNdebele	1	1	1	Net zero
Number of mines in KwaNgwane	6	1	0	Net closure
Number of mines in Lebowa	50	35	53	Net opening
Number of mines in Qwaqwa	37	35	35	Net closure
Number of mines in Venda	9	7	8	

Source: Author, using StatsSA census data 1996-2011.

Following Aragón and Rud (2013), this study chooses a threshold distance beyond which it defines wards located farther away as non-mining wards or areas. The choice of distance is mainly motivated by two calculations. First, the study calculated the average radius of wards in the mining provinces under study. Except for the Northern Cape province which tends to have spatially large wards, the rest of the provinces' wards average around 10km in terms of radius. Second, qualitative studies focusing on the impacts of mining in South Africa mostly use this threshold to define local mining areas (Magak, 2022; Mine Health and Safety Council, 2022). Therefore, a distance of 10km will define mining areas, $M_{w,t} = 1$. Table 51 presents descriptive statistics of the outcome variables, as well as associations between homeland areas and mines in the dataset. The statistics show that within these mining provinces, a significant percentage of people remain in former homeland areas. While poverty and unemployment are generally high countrywide, they are more pronounced in the homeland areas. There are several mines in homelands, but mostly in Bophuthatswana and Lebowa (see Section 13.7).

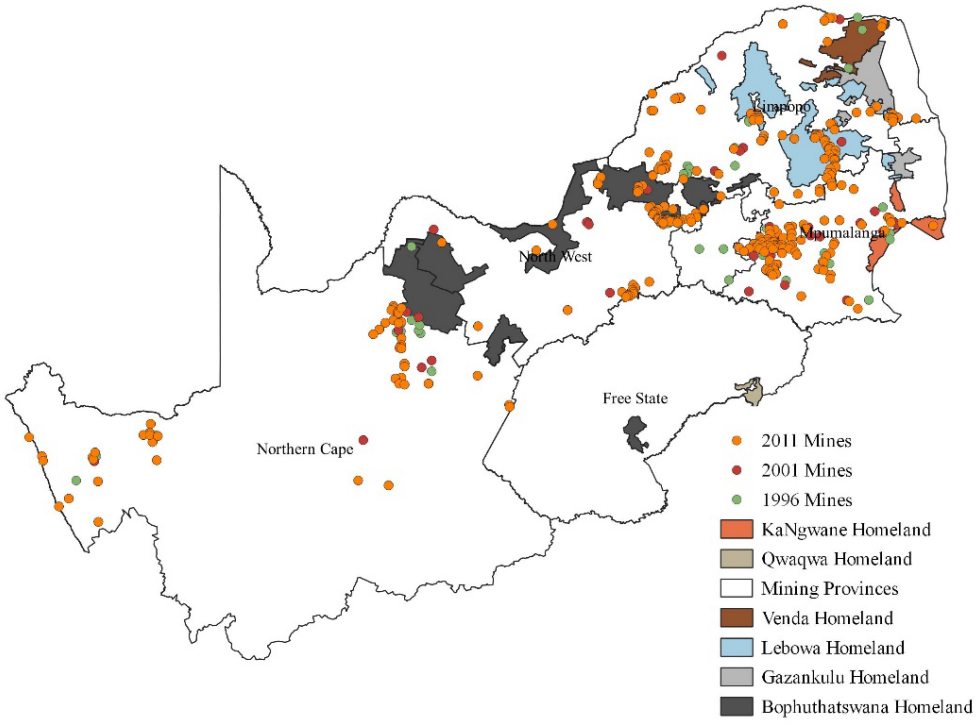


Figure 57 – Map of the homelands and all mines in 1996, 2001, and 2011 under study
Source: Mapped using QGIS using mining data from USGS and shapefile from ArcGIS

Table 52 presents summary statistics by homeland and mining area. The table documents means and standard errors for the outcome variables, for individual characteristics, as well as ward-level

characteristics. Summary statistics related to mines and commodity prices can be found in Table 88, APPENDIX G.

Table 52 – Summary statistics, individual and ward level characteristics

	$Homelands = 1$		$Homelands = 1 \& M_{w,t} = 1$		$Homelands = 1 \& M_{w,t} = 0$		$Homelands = 0$		$Homelands = 0 \& M_{w,t} = 1$		$Homelands = 0 \& M_{w,t} = 0$	
Variables	Mean N = 11,276,644	Standard Error	Mean N = 7,975,273	Standard Error	Mean N = 3,301,371	Standard Error	Mean N = 8,163,499	Standard Error	Mean N = 5,789,264	Standard Error	Mean N = 2,374,235	Standard Error
Individual level (working population:15-65)												
Upper poverty	0.71	0.0001	0.7	0.000163	0.74	0.0002	0.55	0.00017	0.54	0.0002	0.58	0.0003
No income	0.62	0.0001	0.62	0.000172	0.63	0.0003	0.46	0.00017	0.46	0.0002	0.46	0.0003
Employment	0.24	0.0001	0.25	0.000153	0.22	0.0002	0.43	0.00017	0.43	0.0002	0.41	0.0003
Age	32	0.0041	33	0.004868	32	0.0076	34	0.0047	34	0.0054	34	0.0089
Sex (Male=1)	0.45	0.00015	0.45	0.000176	0.43	0.0003	0.49	0.0002	0.5	0.0002	0.48	0.0003
Education years	7.5	0.0014	7.4	0.001722	7.7	0.0027	8.9	0.0015	9	0.0018	8.5	0.0028
Race=Black	0.98	0.00004	0.98	0.000047	0.98	0.0001	0.74	0.00015	0.78	0.0002	0.67	0.0003
Race= Coloured	0.0035	0.00002	0.0036	0.000021	0.0033	0.00003	0.1	0.00011	0.072	0.0001	0.17	0.0002
Race=Indian/Asian	0.0021	0.00001	0.0019	0.000015	0.0026	0.00003	0.0065	0.00003	0.0075	0.00004	0.0041	0.00004
Race=White	0.014	0.00004	0.013	0.00004	0.016	0.00007	0.15	0.00012	0.14	0.00015	0.16	0.0002
Ward level (ratios)												
No piped water	0.2	0.00006	0.22	0.000081	0.15	0.00009	0.056	0.00004	0.057	0.00005	0.054	0.00006
No sewerage system	0.86	0.00007	0.86	0.000086	0.86	0.00013	0.35	0.00012	0.33	0.0001	0.39	0.0002
No refuse removal	0.85	0.00009	0.84	0.000105	0.86	0.00014	0.28	0.00011	0.26	0.0001	0.32	0.0002
No electricity lights	0.34	0.00009	0.34	0.00011	0.35	0.00017	0.22	0.00008	0.21	0.0001	0.23	0.00014
Traditional informal dwelling	0.23	0.00006	0.24	0.000071	0.22	0.0001	0.23	0.00008	0.24	0.0001	0.22	0.00013
Total population	11,000	01.1711	10,000	1.36129	12,000	2.1774	9,400	1.7993	10,000	2.26802	7,500	2.33753

13.5.2. Baseline Specification

To evaluate the impact of mining activity on ward-level poverty and employment, the following regression are estimated:

$$y_{i,w,t} = \beta_0 + \beta_1 M_{w,t} + \beta_2 Z_{i,w,t} + \beta_3 X_{w,t} + \alpha_1 w + \alpha_2 dt + \varepsilon_{i,w,t} \quad (1)$$

$$y_{i,w,t} = \beta_0 + \beta_1 M_{w,t} + \beta_2 (logP_{w,t} \times M_{w,t}) + \beta_3 Z_{i,w,t} + \beta_4 X_{w,t} + \alpha_1 w + \alpha_2 dt + \varepsilon_{i,w,t} \quad (2)$$

where $y_{i,w,t}$ is the outcome variable. Relating to poverty and employment, $y_{i,w,t}$ is a binary variable equal to 1 if an individual i is income poor (employed) in ward w in year t, and equal to 0 otherwise. $M_{w,t}$ is a binary variable indicating the presence of a mine within 10km of ward w at time t. The main measure of change in the magnitude of mining activity is the commodity price ($logP_{w,t}$), which is the log of the price of the nearest commodity to a ward[187]. Both $M_{w,t}$ and $logP_{w,t}$ vary with time due to the opening and closure of mines (e.g., mines of differing commodities). The specification also includes a vector of individual-level controls $Z_{i,w,t}$ and ward-level controls $X_{w,t}$, ward-level fixed effects w, and district multiplied by year fixed effects dt. The main parameters of interest are β_1 and β_2 in equation 2, which capture the size of impact on $y_{i,w,t}$ due to a change in commodity prices, varying by exposure to mining ($M_{w,t}$).

The study implements the LPM estimator described in Correia (2017, 2019) to estimate the model. Although this study mainly deals with binary variables of interest, there are limited options to deal with multi-level fixed effects estimation. The Correia LPM estimator (Guimaraes, 2017) is considered efficient for such large multi-level datasets, and the coefficients can be interpreted straightforwardly.

[187] In cases where a ward has more than one close mine, the nearest largest mine is selected.

13.6. Main Results – Homelands Versus Non-Homelands

This section presents the estimation results. There are three sections. Section A documents the baseline specification results, disaggregated by mine openings and closures, and by type of commodity. Section B documents the results that show the impact of the commodity price changes. Finally, while section A and B focus on the extensive margin (ignoring the number of mines within distance) Section C documents the intensive margin results.

SECTION A – Baseline specification estimation results

This section reports the estimation results of the specification of the model. The development of new mines (or the re-opening of mines) could potentially reduce income poverty and increase employment in former homelands, thus affecting $M_{w,t}$ (0/1) through across wards and time. Alternatively, changes in $M_{w,t}$ could have little effect because of poor local linkages to mining activity in homeland areas. This would partly depend on the extent to which the changes in mining policy have driven mining companies to expand vertical and horizontal linkages within homelands.

13.6.1. Baseline estimation results comparing homeland to non-homeland areas

Table 53 documents the impact of industrial mining on homeland and non-homeland areas. COLUMN A compares mining and non-mining wards *within* homelands. In homeland areas, individuals located within 10km of a mine do not enjoy any gains of moving out of poverty or of gaining employment, compared to individuals in non-mining, homeland wards. This is consistent with the historical analysis of homelands covered in Section 13.2 and the associated theory of economic linkages discussed in Section 13.3. More analysis is however required before conclusions are made.

Table 53 - Baseline estimation results: Homelands vs non-homelands

	COLUMN A *HOMELANDS*		COLUMN B *NON-HOMELANDS*	
	(1) Upper Poverty	(2) Employed	(3) Upper Poverty	(4) Employed
$M_{w,t} \leq$ 10km	-0.0145	0.0140	**-0.0408****	**0.0388***
	(0.0111)	(0.0101)	**(0.0192)**	**(0.0208)**
Constant	1.273***	-0.530***	1.549***	-0.444*
	(0.106)	(0.133)	(0.240)	(0.238)
Ward fixed effects	Yes	Yes	Yes	Yes
District x Year fixed effects	Yes	Yes	Yes	Yes
Observations	11,234,396	11,234,396	7,874,763	7,874,763
Mean of y	0.708	0.238	0.552	0.425

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Note: The difference in number of observations between COLUMN A and B is because COLUMN A is restricted to homeland areas, while COLUMN B is restricted to non-homeland areas.

COLUMN B in Table 53 compares mining wards to non-mining wards outside of homeland areas. Individuals located in non-homeland mining areas have statistically significant chances of moving out of income poverty, by an additional probability of 0.2%, *ceteris paribus.*[188] Moreover, individuals located in non-homeland mining areas have an additional 0.4% chance of gaining employment as a result of mining activity, *ceteris paribus*.[189] The statistical significance is stronger of poverty alleviation than for employment creation. On balance, the baseline results suggest that mining advantages are enjoyed by those with mines located outside of former homelands. This is also supported by the comparison of the mean of y, showing higher average poverty and lower employment in homeland areas. The following set of results disaggregate $M_{w,t}$ by opening and closure of mines.

[188] The calculation is the beta estimate multiplied by the significance level. To turn to percentage, multiply by 100: 0.0408*0.05*100=0.204%. See (Christoph Hanck et al., 2021).
[189] The calculation is the beta estimate multiplied by the significance level. To turn to percentage, multiply by 100: 0.0388*0.10*100=0.388%.

13.6.2. Disentangling mining activity by the opening and closure of mines over time

Table 54 documents $M_{w,t}$ by disentangling the effect of mine opening and the effect of mine closure.

Table 54 – Disentangling Mwt by opening and closure of mines in homeland versus non-homeland areas

	COLUMN A *HOMELANDS*		COLUMN B *NON-HOMELANDS*	
	(1) Upper Poverty	(2) Employed	(4) Upper Poverty	(5) Employed
$M_{w,t}open \leq$ 10km	-0.00431	0.00324	-0.00586	0.0294
	(0.0152)	(0.0150)	(0.0160)	(0.0190)
$M_{w,t}closure \leq$ 10km	**0.0147***	-0.00119	-0.0172	-0.00200
	(0.00751)	(0.0204)	(0.0164)	(0.0305)
Constant	1.261***	-0.522***	1.549***	-0.439*
	(0.106)	(0.134)	(0.241)	(0.239)
Ward fixed effects	Yes	Yes	Yes	Yes
District x Year fixed effects	Yes	Yes	Yes	Yes
Observations	11,234,396	11,234,396	7,874,763	7,874,763
Mean of y	0.708	0.238	0.552	0.425

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Note: The difference in number of observations between COLUMN A and B is because COLUMN A is restricted to homeland areas, while COLUMN B is restricted to non-homeland areas.

In homelands (COLUMN A), the opening of mines in areas that do not already have mines (extensive margin) does not have an effect on poverty, while the closure of a mine significantly increases poverty by an additional probability of 1.47 per cent compared to homeland areas outside the 10km vicinity.[190] Mine closures are associated with negative impacts such as environmental harm and human health harm, especially when mines are not closed appropriately in ways that restore the environment (Aragón & Rud, 2016).

Disentangling $M_{w,t}$ in non-homeland areas does not yield any statistical significance. This will be re-evaluated shortly using the intensive margin (the impact of changes in $M_{w,t}$ where there exists more than one mine).

[190] The calculation is the beta estimate multiplied by the significance level. To turn to percentage, multiply by 100: 0.0147*0.10*100=0.147%.

13.6.3.Impacts by commodity

This sub-section evaluates the impact of mining activity by commodity, $C_{w,t}$. Beyond the changes in mining activity by opening, closure and expansion/contraction of mines, there are heterogenous impacts caused by the type of commodity mined at the nearest mine at a given year, $C_{w,t}$.

Table 55 – Impact of mining on poverty by type of commodity, homeland versus non-homeland areas

	HOMELANDS N = 11,234,396; Mean of y = 0.708			NON-HOMELANDS N = 7,874,763; Mean of y = 0.552		
	Upper Poverty (A)		Net coefficient (Poverty)	Upper Poverty (B)		Net coefficient (Poverty)
$M_{w,t} \leq$ 10km	(1) $M_{w,t}$	(2) $C_{w,t} \times M_{w,t}$	(3)	(4) $M_{w,t}$	(5) $C_{w,t} \times M_{w,t}$	(6)
(1) Platinum	-0.0138 (0.0132)	-0.00247 (0.0202)	-0.0162 (0.0170)	**-0.0417**** **(0.0202)**	0.0144 (0.0285)	-0.0273 (0.0237)
(2) Gold	-0.0159 (0.0112)	0.0254 (0.0542)	0.0095 (0.0533)	**-0.0370*** **(0.0192)**	**-0.0321*** **(0.0176)**	**-0.0691***** **(0.0211)**
(3) Chrome	-0.00907 (0.0115)	**-0.0446**** **(0.0208)**	**-0.0537***** **(0.0203)**	**-0.0386*** **(0.0202)**	-0.0227 (0.0281)	**-0.0612**** **(0.0264)**
(4) Copper	-0.0145 (0.0111)	**-0.0823**** **(0.0389)**	**-0.0968**** **(0.0404)**	**-0.0413**** **(0.0204)**	0.00639 (0.0426)	-0.0349 (0.0380)
(5) Feldspar	-0.0153 (0.0118)	0.0122 (0.0200)	-0.0031 (0.0172)	**-0.0444**** **(0.0205)**	0.0490 (0.0485)	0.0047 (0.0432)
(6) Antimony	-0.0139 (0.0117)	-0.0111 (0.0269)	-0.0250 (0.0238205)	**-0.0337*** **(0.0189)**	-0.110 (0.102)	-0.1439 (0.1005)
(7) Diamond	-0.0144 (0.0113)	-0.00405 (0.0585)	-0.0185 (0.0574)	**-0.0412**** **(0.0199)**	0.0106 (0.0393)	-0.0306 (0.0341)
(8) Coal	-0.0183 (0.0115)	0.0249 (0.0363)	0.0066 (0.0344)	**-0.0499***** **(0.0175)**	0.0242 (0.0238)	-0.0257 (0.0279)
(9) Phosphorus	-0.0160 (0.0113)	0.0222 (0.0339)	0.0062 (0.0340)	**-0.0408**** **(0.0192)**	0.00516 (0.0373)	-0.0356 (0.0420)
(10) Vanadium	-0.0158 (0.0112)	**0.0791**** **(0.0307)**	**0.0633**** **(0.0312)**	**-0.0432**** **(0.0193)**	**0.117***** **(0.0423)**	**0.0738*** **(0.0396)**

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Estimation results include ward fixed effects and district x year fixed effects

Table 55 documents the estimation results of the impact of mining on poverty by type of commodity. Relating to the 10 commodities in the table, in homeland areas, only copper and chrome alleviate poverty, while vanadium is associated with an increase in poverty. Beyond these commodities, it is mainly non-homeland areas that appear to enjoy the majority benefits of mining, but the net coefficients are not strong overall. Results by additional commodities can be found in Table 89 of APPENDIX H.

Table 56 – Impact of mining on employment by type of commodity, homeland versus non-homeland areas

	HOMELANDS N = 11,234,396; Mean of y = 0.238			NON-HOMELANDS N = 7,874,763; Mean of y = 0.425		
	Employment (A)		Net coefficient (Employment)	Employment (B)		Net coefficient (Employment)
$M_{w,t} \leq$ 10km	(1) $M_{w,t}$	(2) $C_{w,t} \times M_{w,t}$	(3)	(4) $M_{w,t}$	(5) $C_{w,t} \times M_{w,t}$	(6)
(1) Platinum	0.0123 (0.0122)	0.00574 (0.0189)	0.0181 (0.0156)	**0.0374*** **(0.0215)**	0.0220 (0.0989)	0.0595 (0.0953)
(2) Gold	0.0111 (0.0101)	0.0540 (0.0671)	0.0650 (0.0665)	**0.0353*** **(0.0204)**	0.0298 (0.0319)	**0.0651*** **(0.0341)**
(3) Chrome	0.0130 (0.0108)	0.00810 (0.0164)	0.0211 (0.0156)	**0.0464**** **(0.0194)**	**-0.0761**** **(0.0376)**	-0.0297 (0.0403)
(4) Copper	0.0140 (0.0101)	-0.0009 (0.0292)	0.0131 (0.0308)	**0.0381*** **(0.0222)**	0.00998 (0.0449)	0.0481 (0.0394)
(5) Feldspar	0.0115 (0.0106)	**0.0376*** **(0.0218)**	**0.0491**** **(0.0204)**	0.0334 (0.0216)	0.0749 (0.0585)	**0.1083**** **(0.0557)**
(6) Antimony	0.0107 (0.0103)	0.0680 (0.0533)	0.0787 (0.0521)	**0.0413**** **(0.0196)**	-0.0381 (0.149)	0.0032 (0.1475)
(7) Diamond	0.0130 (0.0103)	0.0627 (0.0657)	0.0757 (0.0649)	**0.0381*** **(0.0217)**	0.0185 (0.0354)	**0.0566**** **(0.0279)**
(8) Coal	0.0172 (0.0110)	-0.0206 (0.0303)	-0.0034 (0.0281)	0.0401 (0.0249)	-0.00338 (0.0221)	**0.0367*** **(0.0206)**
(9) Phosphorus	**0.0174*** **(0.00908)**	-0.0513 (0.0545)	-0.0339 (0.0560)	**0.0389*** **(0.0208)**	0.0691 (0.0684)	0.1080 (0.0720)
(10) Vanadium	0.0147 (0.0102)	-0.0387 (0.0243)	-0.0240 (0.0250)	**0.0409*** **(0.0209)**	**-0.101**** **(0.0472)**	-0.0603 (0.0445)

Table 56 documents the impacts on employment by type of commodity. In homeland areas, only feldspar has a significant impact on statistically increasing the probability of a person gaining employment, while in non-homeland areas gold, diamonds, and coal contribute significantly to increasing chances of employment. It is striking that platinum is not emerging as a significant driver of employment creation given its importance in and around homelands. This could potentially mean that platinum mining activity is not sufficiently embedded in local communities – thus supporting the accusations on the sector that have been expressed through protracted mining strikes (concetrated on platinum) over the past decade.

SECTION B – The effect of the commodity price boom

This section presents the estimation results of the commodity price boom.

13.6.4. Baseline specification of the effect of the price boom (Pwt)

Table 57 –The impact of the commodity price boom: Homelands vs non-homelands

	COLUMN A *HOMELANDS*		COLUMN B *NON-HOMELANDS*	
	(1) Upper Poverty	(2) Employed	(4) Upper Poverty	(5) Employed
$M_{w,t} \leq$ 10km	-0.00186	0.0196	-0.0547	0.0341
	(0.0238)	(0.0204)	(0.0362)	(0.0419)
$P_{w,t} \times M_{w,t} \leq$10km	-0.00260	-0.00115	0.00293	0.000998
	(0.00410)	(0.00343)	(0.00527)	(0.00639)
Constant	1.271***	-0.531***	1.547***	-0.445*
	(0.107)	(0.133)	(0.240)	(0.238)
Ward fixed effects	Yes	Yes	Yes	Yes
District x Year fixed effects	Yes	Yes	Yes	Yes
Observations	11,234,396	11,234,396	7,874,763	7,874,763
Mean of y	0.708	0.238	0.552	0.425

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 57 presents the variation due to the commodity price boom. Contrary to the expectation of seeing a statistically significant impact of the mining boom, the estimation results do not find any significance in either homeland or non-homeland areas. At this stage, it would be too soon to conclude that the commodity price boom was not an important moment in these areas.

13.6.5. The effect of the price boom (Pwt) disaggregated by opening and closure of mines

This subsection disaggregates the impact of the commodity price boom by mine opening and mine closure.

Table 58 – The effect of the price boom (Pwt) disaggregated by opening and closure of mines

	COLUMN A		COLUMN B	
	HOMELANDS		*NON-HOMELANDS*	
	(1)	(2)	(3)	(4)
	Upper Poverty	Employed	Upper Poverty	Employed
$M_{w,t}open \leq$ 10km	0.0205	-0.0601	-0.0276	-0.00479
	(0.0526)	(0.0480)	(0.0236)	(0.0330)
$P_{w,t} \times M_{w,t}open \leq$10km	-0.00445	0.0113	0.00688	0.0109
	(0.00896)	(0.00825)	(0.00729)	(0.00977)
$M_{w,t}closure \leq$ 10km	0.00623	0.0564	-0.0651	0.0998
	(0.0123)	(0.0583)	(0.0507)	(0.0648)
$P_{w,t} \times M_{w,t}closure \leq$10km	0.00233	-0.0158	0.0102	**-0.0215****
	(0.00330)	(0.0113)	(0.00859)	**(0.0107)**
Constant	1.262***	-0.516***	1.550***	-0.443*
	(0.106)	(0.133)	(0.240)	(0.238)
Ward fixed effects	Yes	Yes	Yes	Yes
District x Year fixed effects	Yes	Yes	Yes	Yes
Observations	11234396	11234396	7874763	7874763
Mean of y	0.708	0.238	0.552	0.425

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 58 documents the results. The broad finding suggests that the additional impact of the commododity price boom is not felt significantly, at the extensive margin. However, mine closures linked to changes in the commodity price do reduce the probability of individuals gaining employment. This supports earlier findigs that mine closures reduces the changes of local employment.

The results above do not show the full picture of the impact of the commodity price boom, because they do not take into account the intensive margin – the additional impact of changes in mining activity where several mines already exist. This is documented in the following section.

SECTION C – The Intensive margin. Impact of mining where mines already exist

13.6.6. Baseline specification of the intensive margin

This subsection investigates the impact of mining activity in areas that have more than one mine. The variable named "count" is used to capture the number of mines within a distance threshold, so that it captures changes in the number of mines rather than the binary (1/0) nature of the $M_{w,t}$ variable.

Table 59 – Baseline specification of the intensive margin – homelands versus non-homelands

	HOMELANDS		NON-HOMELANDS	
	(1)	(2)	(3)	(4)
	Upper Poverty	Employed	Upper Poverty	Employed
$M_{w,t} \leq$ 10km	-0.0119	0.0100	-0.0301	0.0232
	(0.0115)	(0.0103)	(0.0195)	(0.0196)
$M_{w,t}count \leq$ 10km	-0.00883	0.0137	**-0.0101***	**0.0147*****
	(0.00900)	(0.00971)	**(0.00539)**	**(0.00445)**
Constant	1.270***	-0.525***	1.535***	-0.424*
	(0.106)	(0.133)	(0.246)	(0.243)
Ward fixed effects	Yes	Yes	Yes	Yes
District x Year fixed effects	Yes	Yes	Yes	Yes
Observations	11234396	11234396	7874763	7874763
Mean of y	0.708	0.238	0.552	0.425

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The intensive margin matters in non-homelands. There are almost as many homeland wards located in mining areas as there are non-homeland wards located in mining areas. Therefore, this result suggests even in cases where there is more than one mine in a homeland, the mining activity does not significantly alleviate poverty nor create employment in homelands, compared to non-homeland areas. This result is consistent with the linkages explanation – former homeland areas continue to be underdeveloped in ways that cannot maximise on the local mining opportunities. On the other hand, perhaps mining companies are not doing enough to develop local linkages in former homeland areas.

13.6.7. Intensive margin and the impact of the commodity price boom

	HOMELANDS		NON-HOMELANDS	
	(1)	(2)	(3)	(4)
	Upper Poverty	Employed	Upper Poverty	Employed
$M_{w,t}count \leq$ 10km	-0.0235	**0.0682****	**-0.00824****	**0.0135*****
	(0.0208)	**(0.0280)**	**(0.00364)**	**(0.00405)**
$P_{w,t} \times M_{w,t}count \leq$10km	0.00169	**-0.00739***	-0.000992	0.000706
	(0.00301)	**(0.00381)**	(0.00147)	(0.00140)
Constant	1.266***	-0.532***	1.531***	-0.420*
	(0.105)	(0.128)	(0.247)	(0.244)
Ward fixed effects	Yes	Yes	Yes	Yes
District x Year fixed effects	Yes	Yes	Yes	Yes
Observations	11234396	11234396	7874763	7874763
Mean of y	0.708	0.238	0.552	0.425

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The intensive margin highlights the importance of the commodity price boom. The price boom is felt positively in homeland areas in terms of employment, but not in terms of poverty. Consistent with the results so far, the results may suggest that employment is volatile as it depends on the commodity price cycles, particularly in home. The results suggest that mining related employment in non-homeland areas is likely more stable, depending on the "count" variable rather than the price variable. Moreover, non-homeland areas benefit both in terms of poverty alleviation and employment creation. The results comparing former homelands with non-homelands have been theoretically and empirically consistent.

13.7. Main Results – Specific Homelands

This section presents results by specific homelands. It focuses mainly on Bophuthatswana in the North West, and Lebowa and Venda in Limpopo, which are the major homeland mining areas (except Venda that has limited mines). Results for the rest of the homelands are presented in APPENDIX I.

Table 60 – Summary statistics by homeland: Bophuthatswana and Lebowa

	Bophuthatswana				Lebowa			
	$M_{w,t} = 1$		$M_{w,t} = 0$		$M_{w,t} = 1$		$M_{w,t} = 0$	
Variables	Mean N = 2,449,953	Standard Error	Mean N = 400,576	Standard Error	Mean N = 2,944,327	Standard Error	Mean N = 584,993	Standard Error
Individual level (working population:15-65)								
Upper poverty	0.65	0.0003	0.76	0.0007	0.73	0.0003	0.74	0.0006
No income poverty	0.59	0.0003	0.69	0.0007	0.64	0.0003	0.64	0.0006
Employment	0.31	0.0003	0.17	0.0006	0.2	0.0002	0.2	0.0005
Age	34	0.0086	33	0.0227	32	0.0082	32	0.0188
Sex (Male=1)	0.49	0.0003	0.44	0.0007	0.43	0.0003	0.43	0.0006
Education years	8.5	0.0028	7.2	0.0073	7	0.003	6.6	0.0066
Race=Black	0.98	0.0001	0.97	0.0002	0.99	0.0001	0.98	0.0002
Race= Coloured	0.008	0.0001	0.013	0.0001	0.001	0.00002	0.0011	0.00004
Race=Indian/Asian	0.003	0.00004	0.0025	0.00008	0.0008	0.00002	0.0009	0.00004
Race=White	0.014	0.0001	0.0097	0.0002	0.0098	0.0001	0.02	0.0002
Ward level (ratios)								
No piped water	0.21	0.0001	0.15	0.0003	0.28	0.0005	0.2	0.0003
No sewerage system	0.84	0.0002	0.82	0.0005	0.86	0.0002	0.92	0.0002
No refuse removal	0.78	0.0002	0.83	0.0005	0.87	0.0002	0.9	0.0002
No electricity lights	0.36	0.0002	0.49	0.0006	0.34	0.0002	0.34	0.0004
Traditional informal dwelling	0.25	0.0001	0.16	0.0002	0.18	0.0001	0.17	0.0002
Total Population	9,200	2.510	7,100	2.17358	10,000	02.226	9,300	4.058
Distance	21	0.0102	62	0.0166	25	0.0085	65	0.0149

Table 60 presents summary statistics of the Bophuthatswana and the Lebowa homelands. This section essentially lays the foundational work to specific case exploration of these mining areas in a post-doctoral project.

13.7.1 Bophuthatswana homeland

The Bophuthatswana homeland is located in the North West Province and is the main case study informing the work of Butler, Rotberg and Adams (Butler, Rotberg, & Adams, 1978), extensively discussed in Section 13.2. This subsection briefly profiles the mining activity in that homeland. The section also presents empirical results of these mines in this homeland, particularly during the 2000s commodities boom.

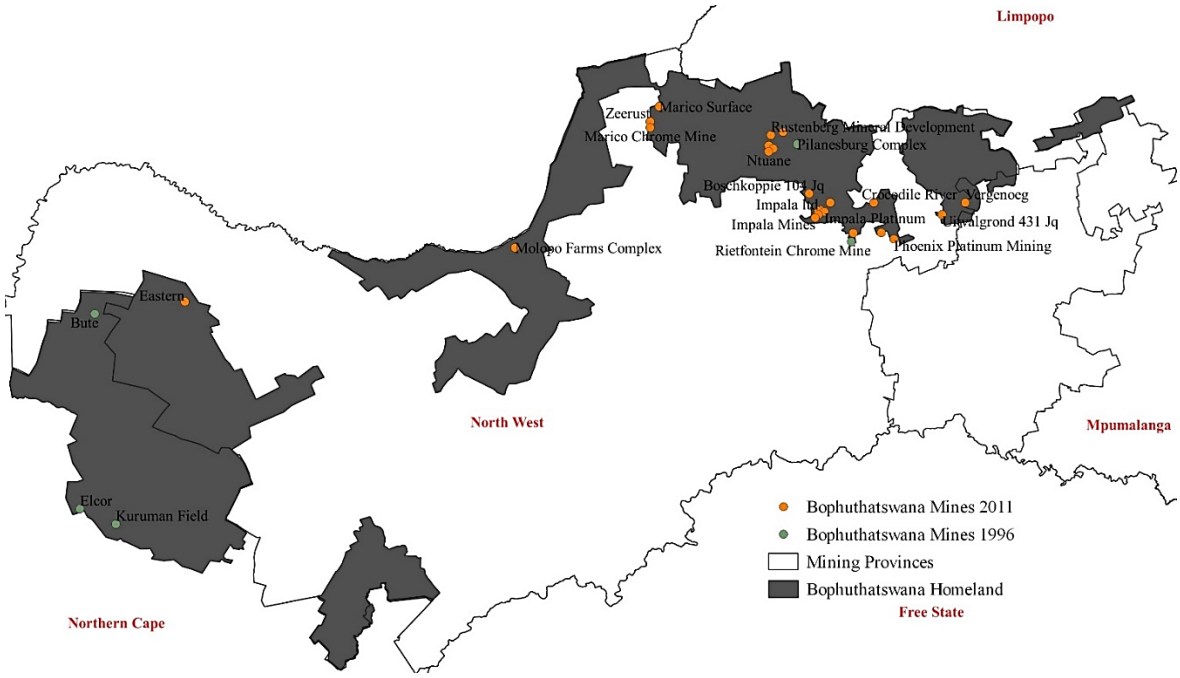


Figure 58 – Map of the Bophuthatswana homeland 1996 and 2011
Source: Author. Mapped using QGIS using mining data from USGS and shapefile from ArcGIS

Overview of the development of new mines in the Bophuthatswana area

Table 61 – Mines located in the Bophuthatswana former homeland, 1996-2011

Ward Code	Province	Year	No. of mines	Mine/project name	Major Commodity
63702018	North West	1996 & 2011	1	Uitvalgrond 431 Jq	Vanadium
63703026	North West	1996 & 2011	2	Bafokeng South Mine	Platinum
63703028	North West	1996 & 2011	1	Crocodile River	Platinum
63703024	North West	1996 & 2011	3	Rustenburg-Impala Sector: Merensky	Platinum
63703004	North West	1996 & 2011	1	Impala Platinum	Platinum
63703024	North West	1996 & 2011	3	Impala Platinum	Platinum
63703024	North West	1996 & 2011	3	Impala Platinum	Platinum
63703005	North West	1996 & 2011	1	Impala Platinum	Platinum
63702026	North West	1996 & 2011	3	Matthey Rustenburg Ref-Wadeville	Platinum
63907011	North West	1996 & 2011	1	Eastern Platinum	Platinum
63705008	North West	2011	1	Pilansberg platinum Mines	Platinum
63703002	North West	2011	1	Boschkoppie 104 Jq	Platinum
63702026	North West	2011	1	Siphumelele Mine	Platinum
63702032	North West	2011	1	Phoenix Platinum Mining	Platinum
63803006	North West	2011	1	Molopo Farms Complex	Platinum
63702036	North West	1996 & 2011	1	Vergenoeg	Fluorine
63805019	North West	1996	6	Marico Surface	Chrome
63805019	North West	1996 & 2011	6	Zeerust Chrome Mine	Chrome
63805019	North West	1996 & 2011	6	Marico Underground	Chrome
63705006	North West	1996 & 2011	1	Rustenberg Mineral Development	Chrome
63705027	North West	1996 & 2011	4	Bathlako Chrome Corp. Smelter	Chrome
63705027	North West	1996 & 2011	4	Bathlako Chrome Mine	Chrome
63705027	North West	1996 & 2011	4	Ruighoek Chrome Mine	Chrome
63705027	North West	1996 & 2011	4	Ntuane	Chrome
63703033	North West	1996	1	Rietfontein Chrome Mine	Chrome
63705014	North West	1996	1	Pilanesburg Complex	Britholite
34501001	N Cape	1996	1	Bute	Asbestos
34501005	N Cape	1996	1	Elcor	Asbestos
34502008	N Cape	1996	1	Kuruman Field	Asbestos

Table 61 shows the list of industrial mines in the Bophuthatswana area. Apart from asbestos mines that closed in the 1990s, most of the mining activity in the area is focused on platinum and chrome. In terms of the period under study, there was significant platinum mining development in the former homeland after 1996, mainly by Anglo Platinum, Impala Platinum, and Lonmin Platinum. The majority of these operations occur on land owned by a collective of communities, such as the Bafokeng community. As such, the deals in these areas are different because the communities have claimed a greater stake in the running of operations and the resultant windfalls (see Part I, Chapter 10). Comparatively, descriptive results show that those located in the Bophuthatswana homeland have far less poverty compared to those located in other mining homelands such as the Lebowa homeland. For example (see Figure 55 and Figure 56. What is the empirical impact of industrial mining on this homeland?

Table 62 – Mining activity and the commodity price boom: Former Bophuthatswana homeland

	(1) Upper Poverty	(2) Upper Poverty	(3) Employed	(4) Employed
$M_{w,t} \leq$ 10km	-0.00730	0.0169	**0.0264***	0.0393
	(0.0145)	(0.0299)	**(0.0151)**	(0.0287)
$P_{w,t} \times M_{w,t} \leq$10km		-0.00473		-0.00252
		(0.00534)		(0.00489)
Constant	1.267***	1.257***	-0.442*	-0.447*
	(0.157)	(0.160)	(0.242)	(0.244)
Ward fixed effects	Yes	Yes	Yes	Yes
District x Year fixed effects	Yes	Yes	Yes	Yes
Observations	2,830,173	2,830,173	2,830,173	2,830,173
Mean of y	0.668	0.668	0.286	0.286

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 62 documents the impact of industrial mining in the Bophuthatswana homeland. The baseline spatial specification results (columns 1, and 3) show that when a mine opens within 10km, individuals close by experience an increase in employment by a probability of 0.26%, but without any significant alleviation in poverty. When taking the commodity price boom into account, the results are not statistically significant. Overall, the impact of mining in the Bophuthatswana area, in terms of the current socio-economic indicators, is marginally positive in terms of employment, but not in terms of poverty alleviation. However, this is also the area of the Marikana massacre. Therefore, a strong case remains about the qualitative impact of mining, especially in relation to poverty alleviation.

13.7.2. Lebowa homeland

The Lebowa homeland is the biggest homeland in the Limpopo province and is host to the eastern limb of the platinum belt. The province grew from the smallest by economy in 1995, at R31 billion per annum, to R231 billion in 2014. According to Lucas Ledwaba (2016), this growth was driven by the development of the platinum belt in the Lebowa area. The area contains 41 per cent of the South Africa's platinum group metals and by 2014, mining contributed 27 per cent to the provincial GDP. Ledwaba (2016) recalls how the Tubatse town in Lebowa was a quiet town of "grinding poverty" "brought about by the combination of a dormant economy and years of neglect by the apartheid regime". However, between 2001 and 2014 the town transformed, with 17 new mining operations established in the region, creating an economic boom. He describes the area as one which "incorporates the towns of Burgersfort, Steelpoort and more than 116 rural villages and settlements" (2016).

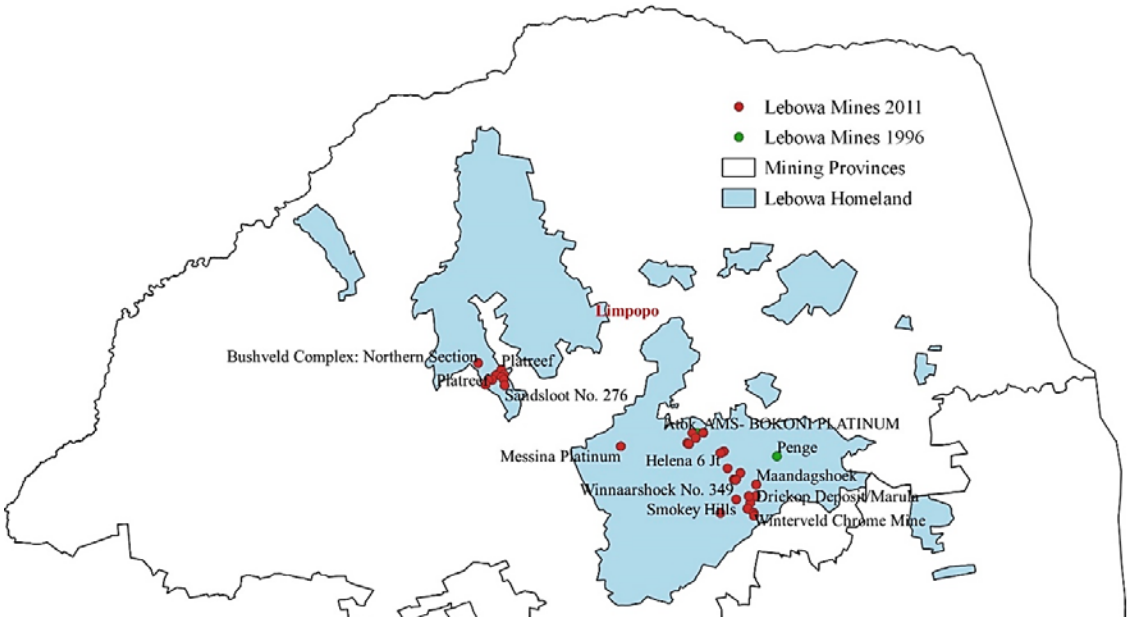


Figure 59 – Map of the Lebowa homeland 1996 and 2011
Source: Author. Mapped using QGIS using mining data from USGS and shapefile from ArcGIS

The development of these mines is largely a consequence of two drivers. The first is the BEE-based mining policy for the inclusion of emerging black capitalists that stimulated investment deals to develop the eastern platinum belt (Nxele, 2022). The second driver is the commodity price boom (see Figure 54). Their combination translated into the opening of new mines, and the expansion

of existing ones. This area is particularly interesting for a study of the intersection between historical homeland deprivation, and the expansion of new mining. Not only does this case study answer the question of the impact of mining on former homelands, because the mines were driven by BEE-related investment, but it also goes some way to answering how BEE-related mining investment affects poverty at the community level.

Mining activities around the Tubatse municipality have for long been centered on chrome and vanadium, but several of these mines closed down during the past decade (see Table 63). During the price boom the area shifted almost entirely to platinum,— with platinum mines contributing more than 50 per cent to employment figures in the province in 2005, and more than 60 per cent to turnover figures – R4-billion in 2005 according to Venter (2007). Venter argues that employment in the mining sector within the Tubatse area in Lebowa has increased threefold since 2001. The empirical investigation in this section will evaluate the extent to which the transformation of this area into a platinum hub has alleviated the threat of poverty and unemployment.

Overview of the development of new mines in the Lebowa area

Table 63 – Mines or projects located in the Lebowa former homeland, 1996-2011

Ward Code	Province	Year	Mine name	Major Commodity
94704009/12	Limpopo	1996 - 2011	Atok/Bokoni Platinum	Platinum
93505017	Limpopo	1996 - 2011	Messina Platinum	Platinum
94705010	Limpopo	1996 - 2011	Forest Hill 117 Kt/Implats	Platinum
94705008	Limpopo	1996 - 2011	Winnaarshoek No. 349	Platinum
94705002/11/19	Limpopo	2011	Maandagshoek/Modikwa	Platinum
93607013/14/17/18	Limpopo	1996 - 2011	Potgietersrus/Mogalakwena	Platinum
94705003	Limpopo	2011	Twickenham Platinum	Platinum
94705008/10/19	Limpopo	2011	Marula Platinum Mine	Platinum
94705012	Limpopo	2011	Smokey Hills	Platinum
93607011	Limpopo	1996 & 2011	Bushveld Complex: Northern Section	Iron
94705007	Limpopo	1996 & 2011	Montrose Hendriksplaats Chrome	Chrome
94704011	Limpopo	1996 & 2011	Waterkop	Chrome
94704012	Limpopo	1996	Jagdlust Chrome Mine	Chrome
94705007	Limpopo	1996 & 2011	Dilokong	Chrome
94705002	Limpopo	1996 & 2011	Winterveld Chrome Mine	Chrome
94705016	Limpopo	1996	Penge	Asbestos

Until the 2000s, the Lebowa area had very limited industrial scale mining activity, especially in platinum. The Messina platinum project was partly developed in the early 1990s, but low platinum prices led to the operation being placed on care and maintenance in 1992. After the Canadian company SouthernEra acquired the mine, in 2001 it resumed limited production. Apart from the Messina project, only Anglo Platinum's (Amplats) small Lebowa operation was actively mining platinum in the Lebowa area (excluding PPRust/Mogalakwena mine on the northern extension of the platinum belt). New developments began in 2002 with the start of Anglo Platinum's Modikwa project, a joint venture with a black empowerment consortium led by African Rainbow Minerals (ARM). Modikwa quickly became the most advanced platinum project in the area, boasting a concentrator plant (see Part I, Chapters 5-9).

Amplats also began construction of the Twickenham mine in mid-2002 and continued expanding rapidly. Other projects by Amplats during the 2000-2011 period included the Der Brochen project, the Booysendal project, and the Paschaskraal project. These areas were developed on the basis of BEE deals (see Part I of PhD). Impala Platinum also began undertaking major development of mines in this area. These include the Marula platinum mine, a BEE joint venture with Mmakau Mining and a community-based empowerment consortium. Mine development began in September 2002 with a concentrator built in 2003, and further expansions continued during the boom period. Another Impala project is the joint venture with ARM, the Two Rivers mine, which began production in 2003. Other projects by other consortia, with differing success rates, include Aquarius Platinum's Everest South, Kennedy's Vale mine, Cluff Mining's Sheba's Ridge project, and Blue Ridge mine.

Table 64 – Temporal variation created by the commodity price boom: Former Lebowa homeland

	(1) Upper Poverty	(2) Upper Poverty	(3) Employed	(4) Employed
$M_{w,t} \leq$ 10km	**-0.0358***	-0.0206	0.00955	0.0456
	(0.0192)	(0.0479)	(0.0115)	(0.0460)
$P_{wt} \times M_{w,t} \leq$10k		-0.00244		-0.00581
		(0.00714)		(0.00749)
Constant	1.308***	1.308***	-0.640***	-0.641***
	(0.189)	(0.190)	(0.170)	(0.169)
Ward fixed effects	Yes	Yes	Yes	Yes
District x Year fixed effects	Yes	Yes	Yes	Yes
Observations	3,525,009	3,525,009	3,525,009	3,525,009
Mean of y	0.731	0.731	0.202	0.202

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 64 presents the empirical results of the impact of mine expansion on the Lebowa area. The results show that the baseline impact of mine activity (column 1), significantly reduced the poverty incidence of individuals living within surrounding areas, compared to those farther away. The additional effect of the commodity price boom is not statistically significant. The net impact on employment is also not significant (column 3 and 4). The Lebowa area is yet to maximise on future commodity price booms.

13.7.3. Venda homeland

The Venda homeland is located in the north-eastern corner of the Limpopo province. It borders the Kruger National Park and is close to the Zimbabwean border. Agriculturally rich, the area has some mining activity related to coal, copper, and industrial minerals.

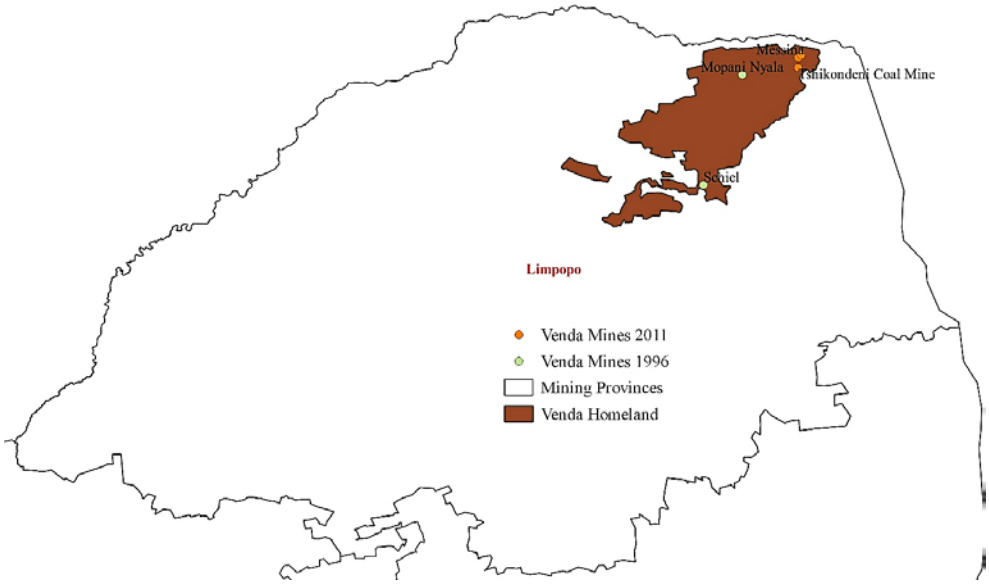


Figure 60 – Map of the Venda homeland 1996 and 2011
Source: Author. Mapped using QGIS using mining data from USGS and shapefile from ArcGIS

Table 65 – Mines located in the Venda former homeland, 1996-2011

Ward Code	Province	Year	No. of mines	Mine name	Commodity
93401002	Limpopo	1996 & 2011	5	Messina	Copper
93405033	Limpopo	1996 & 2011	2	Tshikondeni Coal Mine	Coal
93402010	Limpopo	1996	1	Mopani Nyala	Magnesium
93404003	Limpopo	1996	1	Schiel	Phosphorus

Table 65 documents the mines located in Venda, during the period under study. Only the Messina copper mine and the Tshikondeni coal mine remained open throughout the study.

Table 66 –The impact of the commodity price boom: Former Venda homeland

	(1) Poverty	(2) Poverty	(3) Employed	(4) Employed
$M_{w,t} \leq$ 10km	**-0.0725*** **	**-0.0525** **	0.00767	**-0.185*** **
	(0.0183)	**(0.0255)**	(0.0403)	**(0.0232)**
$P_t \times M_{w,t} \leq$10km		-0.00660		**0.0632*** **
		(0.00849)		**(0.0121)**
Constant	1.732***	1.739***	-0.695	-0.763*
	(0.507)	(0.511)	(0.424)	(0.422)
Ward FEs	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes
Observations	1,205,946	1,205,946	1,205,946	1,205,946
Mean of y	0.731	0.731	0.216	0.216

Standard errors in parentheses* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 66 documents the impacts of industrial mining in the Venda area. It shows the altogether positive impacts of mining in terms of reducing poverty and increasing chances of gaining employment. During the commodity boom, individuals located in mining wards had a statistically significant probability of moving out of poverty, compared to individuals farther away within the homeland (column 1 and 2). The results reflect a similar positive outcome in terms of employment.

13.8. Discussion and Conclusion

The problem facing the mining industry, government, and communities is essentially that mining has long-term significant impacts. These impacts, as discussed in this study, involve both positive economic benefits, and negative environmental and health impacts that ultimately have economic implications. The main challenge addressed in this chapter is the structural poverty in homeland areas, and how mining plays a role in the socio-economic measures of income poverty and employment.

Relying on literature and census data between 1970 and 1991, sections 13.1 to 13.4 discussed the history of poverty in the former homeland areas, isolating the creation of homelands through Separate Development as a major explanation of structural and systematic poverty and high unemployment. Although the homelands were politically reintegrated at the dawn of democracy in 1994, economically enclave underdevelopment persists. What prospects are available for industrial mining development to stimulate local economic opportunities?

Section 13.6 undertook an empirical study by exploiting individual level census data of 1996, 2001, and 2011, combined with geocoded mining data. Comparing mining wards located in homelands with mining wards outside of homelands, the study found persistent disadvantages for individuals located in former homeland areas. Industrial mining activity brings clear relief to local income poverty and increases chances of employment, but this effect is dissipated in homeland areas. Further inquiry of within-homeland variation shows that there are pockets of substantial mining developments, such as the Venda homeland area, where individuals located in mining wards have enjoyed mining-related upliftment that reduces poverty and employment. However, the concern is that the employment levels are volatile, pegged against commodity price booms. As expected, most commodities, though present in homeland areas, disproportionately benefit non-homeland areas.

Beyond the "low-hanging fruits" of procuring local labour and undertaking some corporate social responsibility (CSR) projects, the finding that industrial mining still disproportionately benefits non-homeland areas shows that it is necessary to develop more extensive and complex local supply chain linkages. More complex expansion-related linkages include the procuring of specialised mineworker gear, basic tools, and local maintenance services. These areas require skills and local business development, which are factors that are underdeveloped countrywide, not least in homeland areas.

That the mining boom in most homeland areas is associated with BEE deals provides an opportunity to reimagine black economic empowerment in broader terms than purely elitist deals. The protracted strikes in mining areas, by both labour and community, have proven costly to the running of mines, and therefore to the success of the investments. Policy can become more effective by instilling direct focus on technical skills developments in local communities, upskilling local technical colleges (TVETS), and transforming those colleges to hubs of technology-based business start-ups. However, the expansion of mining also increases local pollution. This undermines subsistence farming as an important source of livelihood. Policy can respond to this negative impact by developing and protecting pockets of local, communal agricultural activity. Environmental management can also be a local business opportunity. If these issues are not addressed, BEE policy loses local legitimacy. It is possible to revive that legitimacy by emphasising sustainable social investment in skills, production, and the localisation of supply

linkages. In the absence of these measures, the “enclave effect” will persist in homelands and will continue to dissipate industrial mining benefits. This will be particularly devastating when mines eventually close.

Chapter 14: Conclusion to the joint-PhD. Reconciling racial class transformation with inclusive investment growth

14.1. Introduction

As asserted in Chapter 1, it is not politically viable for South Africa to dispense with the project of transformation. Nor is it economically sustainable to do without *growth of capital investment*. Transformation is imperative to the stability of the political settlement, while investment is vital for economic growth and thus for the viability of the transformation project. In a scenario where these imperatives are mutually reinforcing, transformation is realised in an investment-inducing way, while a transformed economy offers a larger, more stable market. The daunting challenge of transforming and redressing South Africa's difficult political and economic legacy requires a productive economy that creates new sources of productive rents in the form of entrepreneurship, productive enterprise, and skills.

The concluding argument is structured as follows. First, the argument begins with the "what" – it reflects on South Africa's political settlement of 1994 and the sub-bargains that form(ed) that settlement, specifically new elite inclusion, and the incorporation of non-elites, on the basis of expected socially inclusive economic growth. Second, the argument reflects on the "why" – the importance of capital investment and social investment to materialise and sustain the political settlement and the social contract.[191] Third, the argument reflects on the "how" of creating investment. Together, these three reflect on some of the main contributions of the PhD. A penultimate section of the chapter outlines some of the project's limitations and the future research flowing out of the PhD. Finally, the author concludes by expressing his lifelong conviction of hope and a "passion for the possible" as foundations for his continuous, meaningful work to improve our unequal and developing society.

[191] See "Political Settlements and Development: Theory, Evidence, Implications" (Kelsall et al., 2022) for a detailed conceptual distinction between political settlements and social contract.

14.2. The political settlements and its sub-bargains

The political settlement in South Africa was founded on a set of sub-bargains, including how entrant elites would increasingly occupy the commanding heights of the economy, and how non-elites would be economically incorporated.[192] Racial reallocation of rents was adopted as a broad means to drive racial class transformation. This was more than a policy of redistribution. The idea was to reconstruct South Africa as an economically growing, racially and socially inclusive country.

It takes investment and productivity to stimulate the growth needed to sustain the ever-growing, socio-economic demands of the South African political settlement. A crucial problem, common to several middle-income countries, has been how to sustain sufficiently high and inclusive investment and productivity-driven economic growth.[193] Pressure to drive transformation and investment increasingly became negatively off-balance due to deteriorating state-business relations, ruling party governance fracturing, and intensifying socio-economic pressures. As seen in the study, the project of transformation increasingly became an area of unproductive contestation for access to rents. More rules were created to enable this access, and less cooperation around productive investments. The racial class transformation project consequently did not coincide with good-enough growth in investment. Instead, as argued in this PhD, the political economy became riddled with credible commitment problems, resulting in the dominance of myopic corporate and political strategies over patient strategies focused on mutually beneficial initiatives that would inject dynamism and growth over the medium to long term. The result has been a mutually exclusive relationship between transformation and investment, resulting in low growth, persistent inequality, and high unemployment.

14.3. Capital investment funds the political settlement

Each one of the sub-bargains under the political settlement requires a growing economy, failing which the trade-offs are severe in terms of deteriorating living standards (especially for those already in poverty), and in terms of the quality of governance. Capital investment deployed in job-

[192] Other sub-bargains forming part of the political settlement are discussed in Levy, Hirsch, Naidoo, and Nxele (2021)
[193] There is a growing literature on the low-growth trap in middle income countries (Kharas & Kohli, 2011; Felipe, 2012; Gill & Kharas, 2015; Paus, 2017). Pritchett, Sen & Werker (2017) offer a more comprehensive study on the question of igniting growth, sustaining growth, stalling and decelerations..

creating productive activity is necessary because it is an important funding source for the sub-bargains. The mining sector in South Africa is one of the most labour-intensive industries that has, relative to tertiary sectors, accommodated unskilled workers. Failures of investment due to predatory elite deals have thus directly locked out poor families from their livelihoods. The PhD has shown that the failures in investment, beyond the overall decline in state-business cooperation and trust, can be disaggregated at the deal level, where a disproportionate rise in predatory deals accumulates to an aggregate decline in credible commitment. In short, if the deal deteriorates, investment wanes. The broad deal between state and business has waned, and this has directly dampened investment. This applies in similar measure to the economy as a whole, not just to the mining sector.

14.4. How to sustain ongoing investment?

14.4.1. The primacy of credible commitment

Credible commitment is a permanent feature in the decision-making process of investment. In the mining sector the courts have upheld the "once empowered, always empowered" rule, which protects incumbent firms from a requirement to increase BEE ownership should a mining firm that had at any point attained the 26% of black economic empowerment ownership required by the original Mining Charter of 2004 subsequently fall below the required target. However, intervention by the courts does not resolve the imperative of transformation – which has a long way to go in South Africa – nor does it eliminate residual uncertainty for investors. The court ruling makes it more difficult for policy to push for a perpetual succession of black empowerment deals. However, government retains the power to increase the percentage of required BEE ownership to any desired level. For example, it accepted the court ruling, but in 2018 the government used its power to increase the BEE ownership required from the 26% target to 30%, which was to be reached by 2014 (Fabricius, 2019). These developments clearly demonstrate the importance and relevance of this study. Since rules cannot resolve every contingency, one cannot base transformation solely on formal empowerment rules, particularly when they that fail to cultivate productive partnerships, and result in economic stagnation. The credibility of the process lies in long-term, systematic cooperation between business and government founded on ideas of growth and cooperation. This

needs to be a permanent feature because this is the nexus where transformation reconciles with investment and growth.

14.4.2. Building good partnerships as a way forward

The credibility of the growth-based, transformative development process also relies on good partners/leaders. It would be a mistake to conclude from the presence of perpetually jostling predatory partners and leaders that there is a critical shortage of patient-type entrepreneurs and leaders. What this study shows is that some of the underlying assumptions of BEE policy and legislation were mistaken in so far as they created a system that predators could exploit and defend in ways that crowded out – or left little room for – the patient kind of partners. A clear example cited in the study is the government's Department of Mineral Resources instruction that Anglo cease making further deals with Motsepe's African Rainbow Minerals, in favour of the department's preferred opportunistic partners, which enabled the latter to accumulate rents solely on the basis of political connections.[194] These issues are inherent in the broader incentive environment and are systemic problems.

The study has also highlighted that political connections will no longer be sufficient to access deals. It is already evident that the ruling party's "liberation movement" credentials are a rapidly depreciating asset, whether to secure elite level deals or to secure the popular vote. The "once empowered, always empowered" court ruling, the rise of institutional investors as owners of an overwhelming share of incumbent companies that have been driving BEE deals for the past two decades, the general decline of BEE deals, together with the rise of social values such as inclusion of communities are all potentially positive developments that create an environment for good partners to "flood the space". For example, patient institutional investors care about making investments that support country-based social values such as transformation which could bring stability and predictability to their investments, and which also punish predatory tactics.[195] The decline of BEE deals can also create space for good deals based on business solutions that respond to social and market needs, i.e., real productivity-based entrepreneurship.

[194] See Levy, Hirsch, Naidoo and Nxele 2021 for an in-depth discussion of the link between high inequality and governance erosion.
[195] The author has already started a case study of Northam that focuses on both incumbents and the rise of institutional investors. It will be concluded as a post-doctoral output.

Having laid out an argument that good deals and good partnerships are key to move South Africa forward, the analysis opens and guides the reader towards new avenues of progress. Guided by the argument, and looking beyond mining, a variety of sector-specific policy questions can be explored. These include: how to rebuild countrywide infrastructure in ways that bypass construction mafias and restore a once promising sector with good private-public partnership projects; the return of the textiles sector to the local economy; the emerging opportunities for renewable energy; the rise of local pharmaceutical manufacturing post-Covid-19.[196] The good partnerships hypothesis also pertains to partnering with other countries: securing good partnerships that can bring investment and create jobs locally. All these examples lie in realistically attainable cooperation between business, labour, and the state, centred around the idea of transformation based on a virtuous circle of capability-building, productivity-based growth, and job-creation as discussed in Chapter 11.

14.4.3. Socially responsible investing is important and strategic

Chapters 9 through to 13 have demonstrated the importance of communities both as actors in the game, and as victims when investments go wrong. As noted in Levy, Hirsch, Naidoo and Nxele (2021), part of the sub-bargains of the political settlement included incorporating non-elites. In the mining sector, the rise of communities and labour that demand better and greater inclusion in the productive process and increased benefits means that mining firms need to secure a "social license" – without which communities can bring operations to a halt. Focusing on localisation, jobs, and minimising environmental harm is key to the legitimacy of the political settlement and, at the sector level, to sustainable mining. These ways of "doing business better in communities" is key to minimising local "resource curse" effects.

The study has contributed empirical evidence about the impact of mining at the local ward level, which highlights both the gains and the areas of continuing tension. The findings ranged from general to nuanced. Across all the provinces, mining activity increases people's chances of moving out of income poverty. Focusing on the commodity price boom, the study found that the boom amplifies both the benefits and trade-offs of mining activity. First, the price boom brings additional

[196] More general questions include: Are there good large investment opportunities in South Africa that struggling to take off? Where are there credible commitment issues that are denying investment to take off?

reduction in income poverty in surrounding areas and amplifies the probability of gainful employment for those in surrounding areas. However, employment for the mass cohort of workers in surrounding areas is highly elastic to commodity price booms and busts, and therefore volatile. It is this employment volatility that contributes to the tensions in mining communities. This creates a major concern about creating sustainable economic opportunities beyond boom periods.

Working in mining communities is also complicated by the history of homelands. The study highlighted the history of "Separate Development" as a major explanation of structural and systematic poverty and high unemployment in former homeland mining areas. Although the homelands were politically reintegrated at the dawn of democracy in 1994, the study observed that economic enclave underdevelopment persists. Comparing mining wards located in homelands with mining wards outside of homelands, the study found persistent disadvantages for individuals located in former homeland areas. Industrial mining activity brings clear relief to local income poverty and increases chances of employment, but this effect is dissipated in homeland areas. The finding that industrial mining still disproportionately benefits non-homeland areas shows how important it is to develop more extensive and complex local supply chain linkages.

Overall, the direction of impact of mining on local poverty and employment will depend on the strength of economic linkages and positive multiplier effects versus the intensity of harmful spill overs from mining. Therefore, a key policy action is to amplify the positive impacts of mining. This would include creating an environment in which there are plans to use the increase in incomes and employment during booms to create paths to education and skills investment, better local accountability for the use of windfalls, and diversification to sustain economic opportunities. For patient capital, this has broadened the focus on transformation to explore tangible ways to localise economic activity and broaden BEE beneficiaries. The growing social pressures in South Africa also mean that broadly speaking, each sector has to have a better imagination about how to operate in socially inclusive ways. This creates better societies and a better environment for investment.

14.4.4. Extensions of this research: Politics matters, the state matters, in workable ways

The basis of this study is that getting investment going is a game of being "politically smart",

aligning incentives with context, building relationships for farsighted contracting and transacting. This is the path of promoting economic exchange and preventing expropriation. This is what gets the "machine humming again".

The study built a conceptual framework that connects the macro level political settlement with the micro level deals and partnerships, to demonstrate how politics ultimately play out at the deal level. Building on the literature on state-business relations and development, part of the project's contribution is that it has empirically demonstrated how politics is managed at the deal level in ways that may support or hinder investment. Because the state has been conflated with the ruling party, the study finds that the variation in the quality of deals depends also on the changing political factions within the ruling party. The elite settlement personalised itself around the ruling party and ruling party personalities. This has directly determined "who" gets co-opted into deals, and "who" is likely to be supported by organs of state e.g., the DMR and the IDC.

Partly in response to the growing appreciation of the importance of politics in igniting growth in developing countries, the literature on state-business relations and on transformation in South Africa has correctly but dishearteningly emphasised that the brokering of "a new consensus for inclusive growth" requires a strong state and a long-term oriented political leadership (Chipkin et al., 2018; Jonas, 2018). This PhD suggests that stimulating forward momentum requires less than the desirable strong state and long-term oriented political leadership. First, there is a share of patient capital that is willing to act but cannot be motivated by rules alone. What is key is allowing space for the partners to "find each other" on the basis of entrepreneurial endeavour. Second, there remain politically influential actors in both the private and the public sector that are invested in driving real growth. This is where deals matter and become "pockets of excellence". Third, the rule of law, in the case of South Africa, is an important supportive frame that holds these positive efforts together. Finally, communities and labour can play a proactive role in holding the state and its policies accountable. Overall, there are enough overlapping interests to see the logic of win-win cooperation, at least in several pockets at national, sectoral, and local levels.

14.5. Limitations and future research flowing from the PhD

There are limits to how far one may generalise the study's hypotheses and findings. First, the work suffers from data limitations. Part I, the is constrained by the number of case studies at incumbent

level, and the absence of interviews (in large part because of the constraints that resulted from the COVID pandemic) to complement the research and analysis. Moreover, as it focused only on the mining sector, the study's findings may not be applicable to other sectors. Similarly, Part II of the PhD is limited by having only three waves in the panel (1996, 2001, and 2011), as well as the absence of fieldwork in mining communities that could not only enrich the findings but update the findings beyond the 2011 census.

However, these limitations also make the study extendable at the post-doctoral phase, as follows.

Some of the future research following from Part I

1. Additional case studies in mining
    a. The Gold Fields/Northam case study. Northam Platinum was the third largest platinum mining firm between 1994 and 2018. It is an important case study, because unlike the straightforward simple ownership structure of Amplats and Lonmin, Northam is a case of ownership by arms-length principals and institutional investors, which is typical of the contemporary mining firm. How this ownership structure plays out in the game of deals and transformation is important and interesting. This work will be published as a post-doctoral output.
    b. Foreign entrants in mining in South Africa and their BEE counterparts. There are several new, foreign junior mining companies entering platinum mining in South Africa. The study could explore the role of rules and the type of foreign investor self-selection. Developing the rules-deals hypothesis, does the over-emphasis on rules keep out good foreign investment, in favour of attracting firms with limited franchise value?
    c. Zimbabwe platinum case study. In Zimbabwe, there was a demise of investments from the 1990s via disinvestments, with many mines closing. However, the beginning of the 2000s saw a rush of South African platinum producers, both the dominant old capital, and some BEE players. Even in the midst of rising political, economic and policy upheaval in Zimbabwe, South Africa's platinum investors – Impala Platinum, Anglo Platinum, Motsepe's African Rainbow Minerals, and Mzi Khumalo's Metallon, Bridgette Radebe's (Motsepe's sister) Mmakau mining –

ploughed large greenfield investments into Zimbabwe. The play of the game is different on either side of the border, but the beneficiaries seem to be the same actors. Zimbabwe offers a fascinating experiment for understanding credible commitment and investment under a challenging deals environment.

2. Business labour relations. Chapter 11 alluded to the importance of business labour relations as the "missing deal" in South Africa.

Some of the future research following from Part II

1. Statistics South Africa has undertaken a census collection in 2022. This provides an important opportunity to update the study on the impact of mining on local communities.
2. There exist important opportunities to produce more focused case studies on specific towns, such as comparing the Marikana area in the North West province with the Tubatse area in the Limpopo province, thereby taking the findings from general to specific (subject to data flexibility).
3. The study could explore creating additional variables that specifically isolate the extent of BEE compliance of mines over time. This could consider the extent of BEE ownership, the percentage of procurement spent locally, the level of safety records, and the level of environmental compliance. In turn, these variables could be used to study whether and to what extent they matter in impacting local poverty and employment.
4. Localising linkages in mining. The research can build on the findings to explore practical partnerships and projects to achieve the objective of localising linkages that promote community inclusion in mining areas.

14.6. Lifelong conviction of hope and "the passion for the possible"

This joint PhD is a multi-disciplinary project that has made an original contribution to knowledge by studying the role of deals in locking-in credible commitment for investments, and by

empirically investigating the economic impacts of mining investments on local mining communities. Going below the surface, the study has shown that there are different trajectories of elite transformation that are explained by the capital spectrum (corporate strategies) and the types of deals concluded. By exploring conceptually and empirically the difference between the opposite ends of the spectrum – "collusion and isomorphism route" and the "transformative route" – this research has surfaced a more empirically nuanced and helpful answer to the question of securing capital investment in South Africa, both retrospectively and prospectively. Training the spotlight on the role of deals, the study has demonstrated that, even in contexts where the rule of law is relatively strong, deals remain an important unit of analysis. Deals are an "arena of action" that may lead to different accumulation strategies. The PhD has also shown how investments, as outcomes of these deals, have spatial, local impacts on communities.

The research which went into this study confirms that strategic, productive collaboration between the private sector and the government is one of the most significant enablers to restructuring and reforming economies (Rodrik 2008, Sen, 2015). State-business collaboration does not necessarily have to go the "state capture" route. Even in "crony capitalist" environments, cooperation rather than collusion is not only possible, but necessary in conditions of increasingly scarce resources. Only cooperation shifts outward the "production possibility frontier", while collusion shrinks the economy and the potential gains for all involved. There is a critical mass of players, and they that know that winning is about "growing the pie". Creating new wealth is a path of hope. For the author, staying the course means abiding by the conviction of the "passion for the possible". To the author, the words of Brian Levy ring true: "…the drumbeat of daily headlines tests my resolve not to be flooded with emotion and judgement, but to begin where things actually are. And where things are, I remind myself, is remarkable." (Levy, 2014: xi). Now to begin.

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APPENDICES TO PART I

Appendix to Chapter 7 – Narrative on Lonrho and Ramaphosa

To get Incwala going as a company, the following board was appointed (Engineering News, 2005a; Klein, 2015a):

i. Ian Farmer, interim CEO 2004
ii. Brian Gilbertson, Chairman and CEO 2004 and "dealmaker extraordinaire" (Mabanga, 2004; Theunissen, 2021)
iii. Arne Frandsen, CEO 2005 -2006 (*former investment banker*) (Madlala, 2005)
iv. Zanele Mavuso Mbatha, Deputy chairman then CEO 2006 – 2009 (*former investment banker*)
v. Ronnie Ntuli (*investment banker*) (African Leadership Institute, 2006)
vi. Mutle Mogase (investment banker)[197]
vii. Albert Jamieson, Lonmin's chief commercial officer
viii. Ufikile Khumalo (formerly IDC, then with Scaw Metals)
ix. Dawn Marole (chairperson of Dema, then chairperson of Incwala)[198]
x. Mahomed Seedat (former president of Lonmin South Africa)
xi. Kugan Thaver (IDC)
xii. Lumkile Mondi (IDC)

[197] See Duke (1999)
[198] See Mail & Guardian (2006)

Table 67 below outlines the details of the partners making up Incwala Resources.

Table 67 – The partners making up Incwala Resources

1.	**Dema Group** – led by 34 year old Zanele Mavuso Mbatha and Dawn Marole Confident that the BEE rules were changing to favour black female-led companies, Mavuso Mbatha created her own investment company, Dema, with Dawn Marole (The Economist, 2007)
	Zanele Mavuso Mbatha is a daughter of exiled political activists (The Economist, 2001), and a former investment banker. Responsible for advising the South African government during its privatization of the telecommunication and transportation sectors (Bambili Group, 2017)
	Dawn Marole: Chairperson at Dema, Director at Incwala, SA Post Office, MTN (MarketScreener, 2022a)
2.	**Thelo Incwala/Andisa Capital /(Thelo Investments)** - led by Saki Macozoma (Chairman) and Ronald (Ronnie) Ntuli (Chief Executive). Andisa Capital was registered in 2003, the exact year Incwala was created. The company is described as an empowerment financial services company headed by Saki Macozoma (Chairman) and Ronnie Ntuli (Impala Platinum, 2004; Mail & Guardian, 2012)
	Saki Macozoma, Apartheid Robben Island prisoner, official spokesperson of the ANC under Nelson Mandela, director at NAIL, former head of Transnet, former parliamentary member of the ANC, was the preferred BEE partner in the Implats' Two Rivers mine, but Motsepe won the deal. "He is a member of the ruling ANC's national executive committee "because that is where the country's future is decided", and is regularly seen with President Thabo Mbeki at business events" (The Economist, 2001). "Mr Macozoma faces the charge that he owes his position to such political connections, and that he has been handed assets rather than created any." (The Economist, 2001). [Side note: Two Rivers was initially given to Tiso Capital, before ARM took over Avmin (IOL, 2003)].
	Ronnie Ntuli, chairman of the state-owned development finance institution, the National Empowerment Fund (MarketScreener, 2022b). Appointed director at Incwala. Atul Gupta became an executive director of Thelo, the actual direct partner in Incwala, in May 2007 (Who Owns Whom, 2017), exactly the time the scales had shifted to Jacob Zuma, and exactly the time the Guptas were registering several companies in South Africa. Thelo investments has been deregistered, and replaced by Thelo DB, registered under Ntuli in 2019 (Who Owns Whom, 2020).
3.	**Vantage Capital - led by Mutle Mogase**
	Mutle Mogase is a co-founder and former Executive Chairman of Vantage Capital Group, an investment and finance (private equity and mezzanine) house founded in 2001 (Aleyo Capital, 2019). Strongly embedded in the financial services sector, including formulating the Financial Sector Charter on Black Economic Empowerment (Small Enterprise Foundation, 2022). Former chairman of African Bank Investments Limited at the time of its demise.
4.	**Bapo-Ba-Mogale – led by the Mogale leadership; (and Lonplats employees, and South African Women in Mining Investment Holdings)**
	The Bapo ba Mogale community, which lives in the village, represents the "broad-based" element of the consortium through a 2,8% holding in the controlling stake (Mabanga, 2004)

Box 7.1: IDC as conduit of ANC internal factional battles in BEE deals

In addition to the DMR as a conduit for accessing mineral rights, there is need for finance, to back the deals. Finance is the scarcest resource, while development finance institutions (IDF's) are embedded in politics. The checks and balances do not police against financing the politically connected, they police compliance with processes.

It appears that there is a relationship between ANC dominant factions, and access to IDC funds (Ref). In the case of Incwala deal, the Incwala board included IDC chief economist Lumkile Mondi and its chief investment officer, Raisibe Morathi (Mabanga, 2004).

The Business Day revealed a network of politically connected executives as beneficiaries of IDC funds in 2017, suggesting a systematic allocation of funds to this cohort over time (Creamer, 2018b; Ensor, 2018; Huffpost, 2018).

Extract of mining companies funded by the IDC, 2010-2018

	Entrant	Accounting periods	Percentage interest
Incwala Resources (Pty) Limited	Ramaphosa	1/10/08 - 30/9/16	24
Savannah Platinum SPV	Zwelakhe Sisulu	1/7/08 - 30/6/16	29
Imbani Platinum (Blue Ridge)	Mzi Khumalo	1/1/09 - 31/12/11	25
Sheba's Ridge Platinum	Mzi Khumalo	1/1/09 - 31/12/16	26
Mvelaphanda Resources (Micawber 325 (Pty) Limited)*	Tokyo Sexwale		
OTHER			
New African Investment Limited (NAIL) (Ramaphosa	Ramaphosa	1993	

*Verified using Who Owns Whom company database
Sources: IDC annual reports 2010 - 2018
From the 2017 annual report, the section showing IDC's investments in companies is left out.
Note: The earliest annual report from the IDC released to the public is 2010, blinding the most important period of the commodity boom and BEE mining boom. However, from the available reports, triangulated with media articles over time, the following is clear.

Table 68 – Shanduka group conglomerate

Company	Year of registration	Operating Status as at 2022	Industry	Notable Crossholdings	BEE deals
Shanduka Group (Pty) Ltd	2001	Deregistration Process (2019). Merged into Phembani Group	Activities Auxiliary to Financial Intermediation	China Investment Corporation	Incwala Resources (2010), Pan African Resources UK (2009), Assore Ltd (2008)
Shanduka Properties (Pty) Ltd	2002	Not stated		China Investment Corporation	Activities Auxiliary to Financial Intermediation
Coca-Cola Shanduka Beverages South Africa (Pty) Ltd	2005	Dormant	Wholesale Trade in Beverages		
Shanduka Beverages (South Africa) (Pty) Ltd	2006	Not stated	Activities Auxiliary to Financial Intermediation	China Investment Corporation	
Shanduka Restaurants Company (Pty) Ltd	2010	Deregistration Process (2019)	Activities Auxiliary to Financial Intermediation	China Investment Corporation	
Associated companies					
Johnnic Holdings Ltd	1889	Non-Trading	Publishing of Newspapers, Journals and Periodicals	Southern African Clothing and Textile Workers Union	JCI
New Africa Investments (Metlife)	1993	Dormant		Mineworkers Investment company	SANLAM
Phembani Group (Pty) Ltd	1994	Active	Other Financial Intermediation	Shanduka	Merged with Shanduka
Umcebo Mining (Pty) Ltd	2003	Active	Mining of Coal and Lignite		
Incwala Platinum (Pty) Ltd	2004	Not stated	Activities Auxiliary to Financial Intermediation	Industrial Development Corporation of South Africa	Lonmin
Incwala Resources	2003	Not stated	Mining of Platinum Group Metals	Shanduka	Shanduka (2010), Lonmin
Akanani Platinum	Incwala Resources bought 26% of Lonmin's Akanani Platinum (2007)				
Izimbiwa Coal (Pty) Ltd	2005	Active	Mining of Coal and Lignite	Glencore Plc	
Kangra Coal (Pty) Ltd	2001	Active	Mining of Coal and Lignite	Glencore Plc	
Koornfontein Mines (Pty) Ltd	2006	Business rescue		Oakbay Investments, Mabengela Investments, Tegeta Exploration	

Source: Who owns whom, 2022

Appendix to Chapter 8 – Lonmin deals and investment outcomes

Year	Cash held	Net Total assets
1995	cash at bank at 30 September 1995 amounted to £173 million of which 80 per cent was held in bank accounts in Europe and the United States compared to 70 per cent in 1994. Cash held in Southern Africa was 12 per cent compared to 20 per cent in 1994. (p.30)	1967 p.45
1996	Cash at bank at 30 September 1996 amounted to £195m (1995 - £173m). Of this cash 59 per cent (1995 - 80 per cent) was held in bank accounts in Europe and the United States by companies registered and operating in those areas. The cash held in Southern Africa at 30 September 1996 was 28 per cent (1995 - 12 per cent) of total cash. This has increased due to cash generated by the mining companies. (p.28)	1059 (p.69)
1997	Cash at bank at 30 September 1997 amounted to £260m (1996 - £195m). Of this cash 75 per cent (1996 - 59 per cent) was held in bank accounts in Europe and the United States by companies registered and operating in those areas. The cash held in Southern Africa at 30 September 1997 was 18 per cent (1996 - 28 per cent) of total cash (p.49)	1185 p. 50
1998	Cash at bank at 30 September 1998 amounted to £203m (AR 1999, P. 38)	1322 ar 2009 (p.38)
1999	Cash at bank at 30 September 1999 amounted to £110m (AR 1999, P. 38)	1344 ar 2009 (p.38)
2000	Cash and short-term deposits = $439m p.17	1249 p.17
2001	Cash and short-term deposits = 528 p. 18 Most of the cash held in South Africa is in US dollars and is remitted to the UK on a quarterly basis. Short-term working capital facilities required in South Africa are drawn in US dollars or South African rand as appropriate. (2001 AR, 4)	1401 p.51
2002	Cash and short -term deposits = $34 p. 19 Most of the cash held in South Africa is in US dollars and is remitted to the UK on a quarterly basis. Short-term working capital facilities required in South Africa are drawn in US dollars or South African rand as appropriate. (2002 AR, 4)	1175 p. 19
2003	Cash and short-term deposits = 66 p. 27 Same as above (p.4)	1354 p.27
2004	Cash and short-term deposits = 20. P. 30 Same as above (p.4)	1516 p. 30
2005	Cash and short-term deposits = 11 p. 34 Same as above (p.4)	1876 p. 34
2006	Cash and short-term deposits = 61 p. 37 Same as above (p.5)	1670 p. 46
2007	Cash at bank $12m (p.78)	2145 p. 54
2008	Cash held at the yearend amounted to $226 million p. 14	2269 p. 75
2009	Cash held at the yearend amounted to $462 million p. 22	2046 p. 103
2010	Cash and cash equivalents = 148 p. 99	1649 p. 112
2011	Cash held at the yearend amounted to $210 million p. 10	1954 p. 116
2012	Cash at bank $67 P.144	1768 p. 119
2013	Cash at bank $117 P.147	1990 p. 121
2014	Cash at bank $42 P.165	1827 p. 137
2015	Cash at bank $224 P.178	1363 p.178
2016	Cash and cash equivalents $ 323m (p.126)	70 p. 139
2017	Cash and cash equivalents = 253 p.126	362 p. 126
2018	Cash and cash equivalents = 264 p.118	457 p. 118

APPENDICES TO PART II

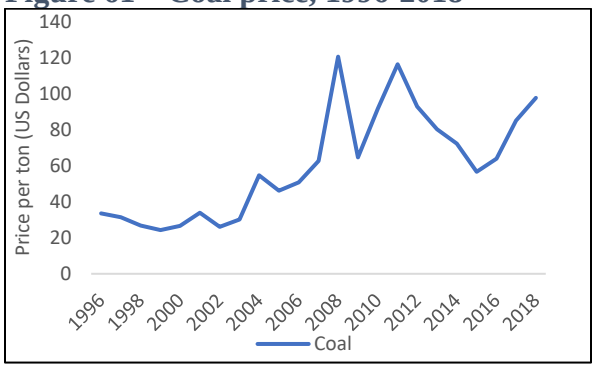
Appendix to Chapter 12 – The economic impact of industrial mining investment on income poverty and employment in local communities in South Africa, 1996-2011

APPENDIX A – Descriptive data

A.1. Commodity prices by commodity type

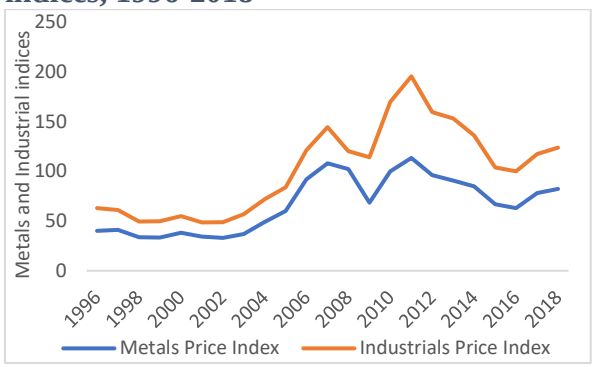
Commodity boom: other commodity price trends

Figure 61 – Coal price, 1996-2018



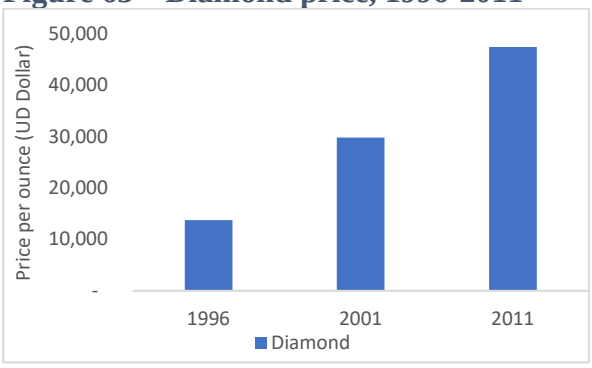
Source: Index Mundi, https://www.indexmundi.com/

Figure 62 – Metals and industrials indices, 1996-2018



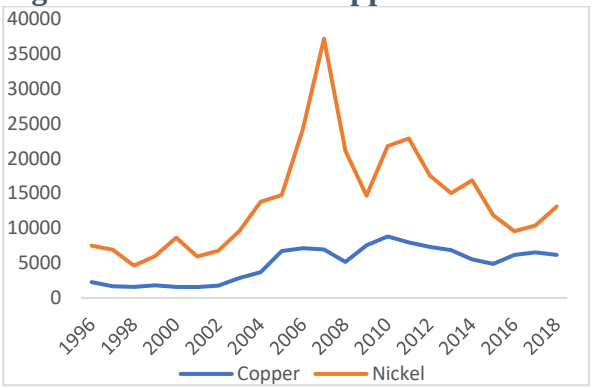
Source: Index Mundi, https://www.indexmundi.com/

Figure 63 – Diamond price, 1996-2011



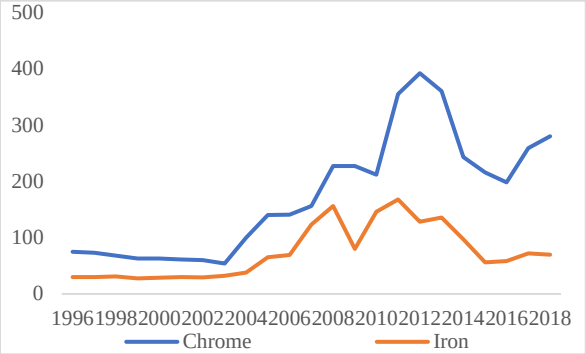
Source: Index Mundi, https://www.indexmundi.com/

Figure 64 – Nickel and copper



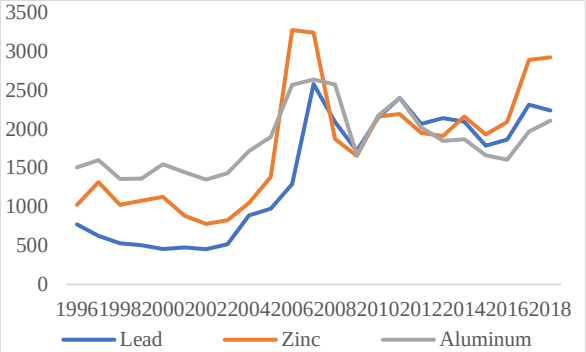
Source: Index Mundi, https://www.indexmundi.com/

Figure 65 – Chrome and iron prices, 1996 -2018



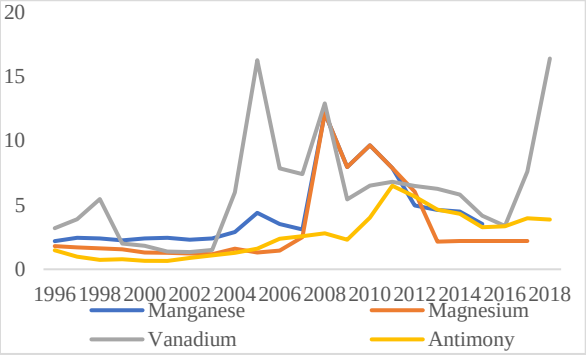
Source: Index Mundi, https://www.indexmundi.com/

Figure 66 – Lead, zinc, aluminium, 1996 – 2018



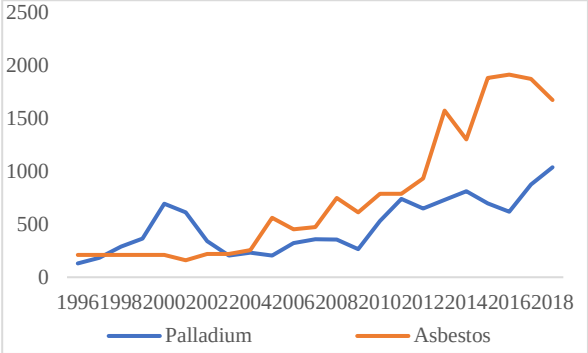
Source: Index Mundi, https://www.indexmundi.com/

Figure 67 – Manganese, magnesium, vanadium, and antimony prices, 1996-2018



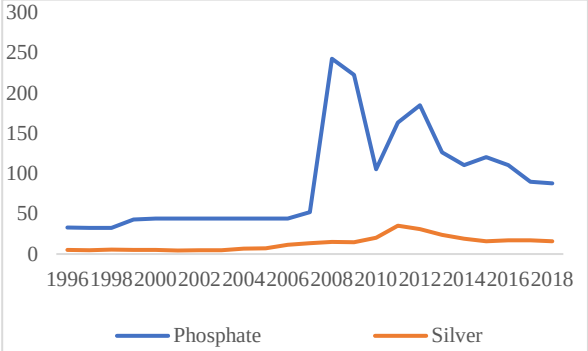
Source: USGS, https://www.usgs.gov/

Figure 68 – Palladium prices, 1996-2018



Source: Index Mundi, https://www.indexmundi.com/

Figure 69 – Phosphate and silver prices, 1996-2018



Source: Index Mundi, https://www.indexmundi.com/

A.2. Municipal differences and fixed effects

This subsection aims to show municipal differences to explain why municipal variation had to be included in the fixed effects.

Are there vast differences by municipality to warrant the use of municipal fixed effects? The descriptive results suggest that there are significant municipal differences in the five provinces. In addition, within municipalities there is sufficient variation in wards that are treated and those that are the control. The data below shows some key summary statistics to highlight the differences between municipalities, focusing on the difference between mining and non-mining municipalities.

Table ***69*** presents summary statistics at municipal level to highlight differences between mining and non-mining municipalities.

Table 69 – Summary Statistics of Municipal data

	Non-mining municipalities		Mining municipalities	
	Mean	*Standard error*	Mean	*Standard error*
Frequency	345		200	
Per cent	63.30		36.70	
Upper-bound Poverty	0.665	0.007	0.613	0.009
GDP by sector at municipal level				
Agriculture/Forestry/Fishing	0.105	0.005	0.074	0.006
Mining & Quarrying	0.102	0.01	0.278	0.019
Manufacturing	0.061	0.003	0.072	0.004
Wholesale/Retail/Trade	0.175	0.003	0.149	0.005
Finance Insurance & Real Estate	0.121	0.003	0.106	0.004
General Government	0.21	0.004	0.14	0.005
Occupations				
Professionals	0.056	0.002	0.053	0.002
Technicians	0.067	0.002	0.068	0.002
Service workers, shop & sales	0.122	0.003	0.127	0.004
Skilled Agri & fishery	0.056	0.003	0.041	0.003
Craft and trades	0.116	0.002	0.136	0.003
Plant & machine operators	0.064	0.002	0.088	0.003
Elementary occupations	0.35	0.005	0.313	0.006
Industry share				
Agriculture/hunting/forestry/fishing	0.204	0.008	0.149	0.009
Mining & quarrying	0.045	0.004	0.121	0.01
Manufacturing	0.061	0.002	0.069	0.003
Wholesale & Retail	0.131	0.002	0.129	0.003
Finance insurance & real estate	0.065	0.002	0.069	0.003
Community & Social Services	0.232	0.004	0.207	0.006
Private Households	0.136	0.002	0.132	0.003
Other characteristics				
Unemployment Rate	0.208	0.004	0.207	0.004
No schooling	0.142	0.004	0.11	0.005
Female	0.522	0.002	0.501	0.003
Youth (15-39)	0.459	0.006	0.477	0.007
Diverse Ethnicity	0.198	0.024	0.479	0.039
Large households (>6 people in house)	0.27	0.006	0.219	0.007
Married	0.203	0.002	0.242	0.003
Electricity for lighting	0.744	0.01	0.78	0.011
Voter Turnout	0.551	0.005	0.511	0.005
ANC Support	0.706	0.007	0.715	0.007
Malicious damage to property	179.679	16.89	370.364	40.245
Arson	12.542	1.127	21.688	2.67
Total contact crimes	1054.811	92.784	1970.675	227.351
Total property related crimes	765.532	76.971	1630.506	194.758

Data Source: ("SALGA Municipal Barometer", 2016)

APPENDIX B - Mining versus non-mining wards

Baseline estimation results showing alternative distance thresholds

Table 70 – Baseline estimation results at 30km: Income poverty (Upper Poverty and No Income) and Employment

	(1) Upper Poverty	(2) No Income	(3) Employed
$M_{w,t} \leq$ 30km	0.00367	-0.000283	-0.000279
	(0.00711)	(0.00781)	(0.00728)
Constant	1.496***	1.147***	-0.493***
	(0.142)	(0.129)	(0.144)
Ward fixed effects	Yes	Yes	Yes
District x Year fixed effects	Yes	Yes	Yes
Observations	19109159	19109159	19109159
Mean of y	0.644	0.556	0.315

Table 71 – The impact of mine opening/closing on income poverty and employment at 30km

	(1) Upper Poverty	(2) Employed
Mine open <=30km	-0.00400	0.00884
	(0.0122)	(0.0118)
Mine close <=30km	**0.0158****	-0.0154
	(0.00721)	(0.0172)
Constant	1.491***	-0.489***
	(0.142)	(0.144)
Ward fixed effects	Yes	Yes
District x Year fixed effects	Yes	Yes
Observations	19109159	19109159
Mean of y	0.644	0.315

Table 72 – Impact of the commodity price boom on local poverty and employment, at different thresholds

	(1) Upper Poverty	(2) Upper Poverty	(3) Upper Poverty	(4) Employed	(5) Employed	(6) Employed
Mwt<=30	-0.00302			0.00138		
	(0.0110)			(0.0105)		
log Ward commodity price X distance 30km	0.00137			-0.000339		
	(0.00170)			(0.00166)		
Mwt<=10		-0.0214			**0.0448****	
		(0.0221)			(0.0226)	
log Ward commodity price X distance 10km		-0.00166			-0.00281	
		(0.00356)			(0.00364)	
Mwt=with mine			-0.0161			**0.0648***
			(0.0252)			(0.0379)
log Ward commodity price X with mine			0.00328			**-0.0127****
			(0.00376)			(0.00604)
Constant	1.498***	1.507***	1.501***	-0.494***	-0.505***	-0.502***
	(0.142)	(0.142)	(0.142)	(0.144)	(0.144)	(0.143)
Ward fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
District x Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	19109159	19109159	19109159	19109159	19109159	19109159
Mean of y	0.644	0.644	0.644	0.315	0.315	0.315

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 73 – The impact of the price boom disaggregated by mine opening and closing, by other thresholds

	(1) Upper Poverty	(2) Employed
Mine **open** <=30km	**-0.0161***	**0.0287***
	(0.00939)	(0.0164)
Mines **opening** within 30km x Pwt	0.00300	**-0.00707****
	(0.00184)	(0.00335)
Mine **close** <=30km	-0.0389	**0.0464****
	(0.0248)	(0.0223)
Mines **closure** within 30km x Pwt	**0.0110*****	**-0.0117*****
	(0.00417)	(0.00381)
Constant	1.490***	-0.486***
	(0.142)	(0.144)
Ward fixed effects	Yes	Yes
District x Year fixed effects	Yes	Yes
Observations	19109159	19109159
Mean of y	0.644	0.315

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 74 – The intensive marginal mining impact on poverty and employment, other distance thresholds

	(1) Upper Poverty	(2) Upper Poverty	(3) Employed	(4) Employed
Mwt<=30	0.00472		-0.00172	
	(0.00715)		(0.00728)	
Number of Mines within 30km	**-0.00844***		**0.0116*****	
	(0.00446)		(0.00364)	
Mwt=with mine		0.0148		**-0.0257***
		(0.0155)		(0.0136)
Number of Mines within ward		-0.00996		**0.0116***
		(0.00833)		(0.00637)
Constant	1.493***	1.498***	-0.489***	-0.492***
	(0.144)	(0.143)	(0.146)	(0.146)
Ward fixed effects	Yes	Yes	Yes	Yes
District x Year fixed effects	Yes	Yes	Yes	Yes
Observations	19109159	19109159	19109159	19109159
Mean of y	0.644	0.644	0.315	0.315

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 75 – The intensive marginal mining impact disaggregated by mine opening and closing, using alternative distance thresholds

	(1) Upper Poverty	(2) Upper Poverty	(3) Employed	(4) Employed
Number of mines **opening** within 30km	0.00257		-0.00571	
	(0.00601)		(0.00534)	
Number of mines **closing** within 30km	0.00230		-0.00641	
	(0.00386)		(0.00392)	
Number of mines **opening** within 20km		**-0.0130***		0.00520
		(0.00700)		(0.00497)
Number of mines **closing** within 20km		0.00780		-0.00809
		(0.00915)		(0.00805)
Constant	1.500***	1.497***	-0.497***	-0.493***
	(0.142)	(0.142)	(0.144)	(0.145)
Ward fixed effects	Yes	Yes	Yes	Yes
District x Year fixed effects	Yes	Yes	Yes	Yes
Observations	19109159	19109159	19109159	19109159
Mean of y	0.644	0.644	0.315	0.315

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 76 – The intensive marginal mining impact and the price boom impact on poverty and employment (alternative distance thresholds)

	(1) Upper Poverty	(2) Upper Poverty	(3) Employed	(4) Employed
Number of Mines within 30km	**-0.00893*** **		**0.0231*** **	
	(0.00282)		(0.00864)	
Number of Mines within 30km * log commodity price	0.000179		-0.00301	
	(0.00110)		(0.00195)	
Number of Mines within ward		-0.0159		**0.0482*** **
		(0.0105)		(0.0172)
Number of Mines within ward * log commodity price		0.00134		**-0.00690** **
		(0.00146)		(0.00297)
Constant	1.497***	1.501***	-0.496***	-0.505***
	(0.144)	(0.143)	(0.145)	(0.144)
Ward fixed effects	Yes	Yes	Yes	Yes
District x Year fixed effects	Yes	Yes	Yes	Yes
Observations	19109159	19109159	19109159	19109159
Mean of y	0.644	0.644	0.315	0.315

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

APPENDIX C - Robustness checks

Table 77 – Robustness checks: Placebo test, different level clustering, and logit estimation

	(1) Upper Poverty	(2) Upper Poverty	(3) Upper Poverty
	Placebo Test	**Cluster at municipality**	**Logit**
Placebo $M_{w,t} \leq$ 10km	-0.0015		
	(0.02305)		
$M_{w,t} \leq$ 10km		-0.0839**	-0.695***
		(0.0345)	(0.00885)
$P_{w,t} \times M_{w,t} \leq$10km		0.0186**	0.136***
		(0.00856)	(0.00214)
Constant	1.217***	1.223***	3.116***
	(0.0155)	(0.0185)	(0.00336)
Ward fixed effects	Yes	Yes	n/a
Year x municipality fixed effects	Yes	Yes	n/a
Observations	19,440,143	19,440,143	19,440,143

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Spatial Randomisation Placebo Test

Since there might exist doubt that the results are driven by choice of calculating distances to mine, a spatial randomisation placebo test is performed by creating a non-existent randomly allocated Mwt variable at random ranges of observations. This follows (Tolonen, 2014), who performs a randomisation inference test by offsetting mine location by 0 to 50 kilometres in any direction, to test if the results attenuate toward zero.

When implemented, this placebo Mwt generates 4,000,005 real changes. This number is similar to the original sample of people in mining areas in the dataset. The results displayed in Table 77 (1) show that results attenuate toward zero. This supports the integrity of the location of mines and the measurement of the distances throughout the panel waves.

Clustering at different levels

To check the robustness of the model results, it is helpful to cluster the standard errors at a different level. Clustered Standard Errors (CSEs) happen when some observations in a dataset are related to each other. Incorrect standard errors violate the assumption of independence, and may lead to standard errors that are smaller than regular OLS standard errors and misleadingly

small p-values (Colin Cameron & Miller, 2015). To rule out this concern, Table 77 (2) presents the results of the model with standard errors clustered at the municipal level. The results remain significant and maintain the same signs as the main findings. This result is consistent with Table 69

Table *69* municipal level summary statistics that suggest considerable variation at this level. This robustness check alleviates concerns about results purely driven by CSEs at the ward level.

The panel logit (xtlogit) estimation procedure

The alternative specification would be the panel logistic function with fixed effects. This would potentially take care of the binary outcome variable while estimating a fixed effects model. Using xtlogit, the aim is to obtain answers that are conditional on the panel effects. This has the merit of adjusting for any time (or replication) invariant attributes of the panels that might also be confounding variables. Thus, this eliminates omitted variable bias that might be attributable to those confounding variables.(Schechter, 2017).

The estimation procedure would thus be run as follows:

$$xtlogit\ y_{i,w,t}\ \ M_{w,t}\ (P_t\ \times M_{w,t})\ \ Z_{i,w,t}\ X_{w,t}\ \alpha_w\ \alpha_t\ \varepsilon_{i,w,t},\ fe\ nolog$$

Note that xtlogit did not work with the following error message: "7,423 (group size) take 3,996 (# positives) combinations results in numeric overflow; computations cannot proceed"

This means that one of the groups has 7,423 members with 3,996 positives among that group, and that leads Stata to an attempt to calculate the binomial coefficient as follows:

$$\binom{7423}{292}$$

which Wolfram Alpha tells us is approximately $2.812\ \times\ 10^{474}$ which exceeds the limit for the largest number representable in double precision (Lisowski, 2017).

The note "7,423 groups dropped because of all positive or all negative outcomes" means that 7,423 subjects were either in poverty during all three time periods or were not in poverty during all three time periods. Fixed-effects models are looking at the determinants of within-subject variability. If there is no variability within a subject, there is nothing to examine. Put another way, if poverty status were something that hardly ever changed across time, or if very few people were ever in poverty, there would not be many cases left for a fixed effects analysis (Williams, 2018).

Instead, a basic logit is estimated. The results in Table 77 (3) confirm, at the least, that people located in mining areas are statistically less income poor than people living farther.

APPENDIX D – Impacts by type of commodity

Table 78 documents number of people by commodity, to provide more information on sample sizes in the regressions.

Table 78 – Changes in number of observations by commodity

	Year			
	1996	2001	2011	Total
Frequency	5,217,534	6,646,685	7,575,924	19,440,143
Total				
1 if platinum ward	**780,675**	**1,148,903**	**1,604,002**	**3,533,580**
1 if gold ward	**1,428,223**	**1,957,370**	**2,072,155**	**5,457,748**
1 if nickel ward	5,297	233	29,337	34,867
1 if copper ward	**175,365**	**307,623**	**368,645**	**851,633**
1 if coal ward	**243,754**	**617,425**	**1,004,974**	**1,866,153**
1 if diamond ward	**215,518**	**332,410**	**485,624**	**1,033,552**
1 if iron ward	114,382	80,362	134,754	329,498
1 if lead ward	82,478	152,103	151,051	385,632
1 if tin ward	50,789	0	0	50,789
1 if zinc ward	1,508	37,477	22,793	61,778
1 if manganese ward	279,034	6,987	71,037	357,058
1 if magnesium ward	40,129	0	0	40,129
1 if vanadium ward	**232,105**	**300,519**	**269,339**	**801,963**
1 if phosphorus ward	**524,057**	**220,540**	**151,124**	**895,721**
1 if antimony ward	**249,370**	**383,474**	**417,854**	**1,050,698**
1 if asbestos ward	259,396	225,831	0	485,227
1 if chrome ward	**308,438**	**431,073**	**567,477**	**1,306,988**
1 if feldspar ward	**329,230**	**407,444**	**225,758**	**962,432**
1 if britholite ward	23,018	36,911	0	59,929
1 if beryllium ward	16,041	0	0	16,041

Table 79 – Number of observations by commodity, in mining areas

	Year			
	1996	2001	2011	Total
Frequency	3,852,140	4,615,396	5,297,001	13,764,537
Total				
1 if platinum ward	720,931	995,181	1,395,294	3,111,406
1 if gold ward	794,023	1,247,664	1,271,727	3,313,414
1 if nickel ward	5,297	233	2,533	8,063
1 if copper ward	79,390	100,524	139,753	319,667
1 if coal ward	223,193	384,653	716,028	1,323,874
1 if diamond ward	173,020	196,370	328,933	698,323
1 if iron ward	53,578	67,327	71,751	192,656
1 if lead ward	19,762	54,748	50,741	125,251
1 if tin ward	50,789	0	0	50,789
1 if zinc ward	927	694	1,393	3,014
1 if manganese ward	160,744	2,065	53,252	216,061
1 if magnesium ward	40,129	0	0	40,129
1 if vanadium ward	229,251	300,519	269,339	799,109
1 if phosphorus ward	404,504	164,408	94,456	663,368
1 if antimony ward	245,762	169,822	190,237	605,821
1 if asbestos ward	185,715	137,340	0	323,055
1 if chrome ward	271,580	378,087	485,806	1,135,473
1 if feldspar ward	275,960	378,850	225,758	880,568
1 if britholite ward	23,018	36,911	0	59,929
1 if beryllium ward	16,041	0	0	16,041

Table 80 – Impacts by other types of commodities: Poverty and employment

$M_{w,t} \leq$ 10km	Upper Poverty (A)		Net coefficient (Poverty)	Employment (B)		Net coefficient (Employment)	Treated wards	Non-treated wards
	(1)	(2)	(3)	(4)	(5)	(6)	(9)	(10)
	$M_{w,t}$	$P_t \times M_{w,t}$		$M_{w,t}$	$P_t \times M_{w,t}$			
(11) Nickel	-0.0294*** (0.0105)	-0.0107 (0.0169)	**-0.0401** (0.0199)**	0.0313*** (0.0104)	0.0290 (0.0182)	**0.0603*** (0.020)**	3	1
(12) Iron	-0.0302*** (0.0106)	0.0708*** (0.0207)	**0.0406** (0.0190)**	0.0322*** (0.0105)	-0.0759*** (0.0233)	**-0.0438** (0.0214)**	14	70
(13) Lead	-0.0279*** (0.0104)	-0.218*** (0.0174)	**-0.2457*** (0.0138)**	0.0306*** (0.0104)	0.103*** (0.0213)	**0.1334*** (0.0181)**	4	86
(14) Tin	-0.0300*** (0.0105)	0.238*** (0.0583)	**0.2075*** (0.0587)**	0.0319*** (0.0104)	-0.227* (0.122)	-0.1953 (0.1221)	3	12
(15) Zinc	-0.0294*** (0.0105)	0 (.)	**-0.0294*** (0.0105)**	0.0313*** (0.0104)	0 (.)	**0.0313*** (0.0104)**	0	15
(16) Manganese	-0.0286*** (0.0103)	-0.0168 (0.0684)	-0.0454 (0.0682)	0.0292*** (0.0107)	0.0442 (0.0486)	0.0734 (0.0473)	6	68
(17) Magnesium	-0.0291*** (0.0105)	-0.0405** (0.0175)	**-0.0696*** (0.0144)**	0.0323*** (0.0104)	-0.163*** (0.0194)	**-0.1307*** (0.0160)**	1	8
(18) Asbestos	-0.0298*** (0.0108)	0.00790 (0.0212)	-0.0219 (0.0199)	0.0322*** (0.0107)	-0.0179 (0.0200)	0.0142 (0.0183)	18	134
(19) Britholite	-0.0289*** (0.0106)	-0.0148 (0.0655)	-0.0437 (0.0645)	0.0313*** (0.0106)	-0.000282 (0.0612)	0.0310 (0.0602)	2	9
(20) Beryllium	-0.0294*** (0.0106)	-0.00235 (0.0411)	-0.0317 (0.0395)	0.0305*** (0.0105)	0.0761*** (0.0258)	0.1066*** (0.0228)	3	3

1. APPENDIX E – How variables were formulated

Calculating poverty variable

One of the main limitations of the poverty variable in this study is that it adopts a national poverty line, rather than a provincial poverty line, which would likely respond to the historical differences in provincial living standards (see (StatsSA, 2012a). The reasons for not adopting this approach are twofold. First, this study could not secure these measures for the 1996 wave. Second, standard poverty lines are widely used in literature to study local level estimations, yielding comparative informative insights into poverty conditions.

Individuals report income by indicating their income category. Therefore, the income variable is a categorical variable. To determine poverty lines for each wave, the study follows StatsSA's poverty line guidelines for each of the years.

Table 81 – Income categories: Census 1996, 2001, 2011

1996		2001		2011	
Monthly income	Annual income	Monthly income	Annual income	Monthly income	Annual income
1 = None	1 = None	1 = None	1 = None	1 = None	1 = None
2 = R1-R200	2 = R1-R2,400	2 = R1-R400	2 = R1-R4,800	2 = R1-R400	2 = R1-R4,800
3 = R201-R500	3 = R2,401-R6,000	3 = R401-R800	3 = R4,801-R9,600	3 = R401-R800	3 = R4,801-R9,600
4 = R501-R1,000	4 = R6,001-R12,000	4 = R801-R1,600	4 = R9,601-R19,200	4 = R801-R1,600	4 = R9,601-R19,200
5 = R1,001-R1,500	5 = R12,001-R18,000	5 = R1,601-R3,200	5 = R19,201-R38,400	5 = R1,601-R3,200	5 = R19,201-R38,400
6 = R1,501-R2,500	6 = R18,001-R30,000	6 = R3,201-R6,400	6 = R38,401-R76,800	6 = R3,201-R6,400	6 = R38,401-R76,800
7 = R2,501-R3,500	7 = R30,001-R42,000	7 = R6,401-R12,800	7 = R76,801-R153,600	7 = R6,401-R12,800	7 = R76,801-R153,600
8 = R3,501-R4,500	8 = R42,001-R54,000	8 = R12,801-R25,600	8 = R153,601-R307,200	8 = R12,801-R25,600	8 = R153,601-R307,200
9 = R4,501-R6,000	9 = R54,001-R72,000	9 = R25,601-R51,200	9 = R307,201-R614,400	9 = R25,601-R51,200	9 = R307,201-R614,400
10 = R6,001-R8,000	10 = R72,001-R96,000	10 = R51,201-R102,400	10 = R614,401-R1,228,800	10 = R51,201-R102,400	10 = R614,401-R1,228,800
11 = R8,001-R11,000	11 = R96,001-R132,000	11 = R102,401-R204,800	11 = R1,228,801-R2,457,600	11 = R102,401-R204,800	11 = R1,228,801-R2,457,600
12 = R11,001-R16,000	12 = R132,001-R192,000	12 = R204,801 or more	12 = R2,457,600 or more	12 = R204,801 or more	12 = R2,457,600 or more
13 = R16,001-R30,000	13 = R192,001-R360,000	99 = Unspecified	99 = Unspecified	99 = Unspecified	99 = Unspecified
14 = R30,001 or more	14 = R360,001 or more	98 = N/A: Institution	98 = N/A: Institution	98 = N/A: Institution	98 = N/A: Institution
99 = Unspecified	99 = Unspecified				
98 = N/A: Institution	98 = N/A: Institution				

Sources: CENSUS 1996 (StatsSA, 1997); CENSUS 2001 Metadata (StatsSA, 2002b); CENSUS 2011 10%SAMPLE METADATA (StatsSA, 2012b)

Note that the survey questionnaires did not require respondents to give exact figures of their income but rather the income category/band. Though children were also asked about their income, this present study truncated the sample to working age population (15-65).

Poverty lines determined by Statistics South Africa

Table 82 – Inflation-adjusted poverty lines (per capita per month in Rands)

Year	Food poverty line	Lower-bound poverty line	Upper-bound poverty line
1996			R183.3-R292.5*
2001	148	219	323
2011	321	443	620

Source: Poverty Trends in South Africa (StatsSA, 2014); *(May, 2003)

Based on the information above, the study calculated two poverty lines, as follows:

1. "No Income" poverty line was taken as the "no income" bin in Table 81. The census surveys all share this category, making this arguably the most comparable category of income poverty across the surveys. However, this line has not been adopted by StatsSA, nor in South African literature.
2. "Upper Poverty"
    a. 1996: [2 = R1-R200] because this bin contains part of the Upper-bound poverty line in 1996. This is somewhat comparable to the R250 poverty line for 1996 used by (Leibbrandt et al., 2005).
    b. 2001: [2 = R1-R400] because the Upper-bound poverty line in 2001 falls within this range. Note that the study is balanced by the "No Income" poverty line in order to alleviate the discretion applied in picking the income bins to determine the "Upper" poverty line. The results remain similar. Importantly, both measures of poverty reveal striking increases in income poverty in 2001.
    c. 2011: [3 = R401-R800] because the 2011 Upper-bound poverty line approximates the average of this income bin.

The study reviewed literature in considering this poverty lines, including Woolard and Leibbrandt's paper "Methodological issues of measuring poverty in South Africa" (Woolard et al., 1999).

Calculating distance between wards and mines

The study calculates distance from each ward to the nearest mine by using a trigonometric and radians function adopted by Microsoft (see Microsoft 2019 and (Ronen and Shenkar, 2017)), as follows:

ACOS(COS(RADIANS(90-Lat1)) * COS(RADIANS(90-Lat2)) + SIN(RADIANS(90-Lat1)) * SIN(RADIANS(90-Lat2)) * COS(RADIANS(Long1-Long2))) * 6371

This formula estimates the arc distance between two coordinates on the surface of the earth. The formula can be used in Excel in combination with the "MIN" formula to extract the shortest distance between a ward and all mines in the dataset. While this formula can determine the distance between two points, it cannot say which mine is the closest. To extract this information, the study used the "INDEX" formula on Excel.

Example: =INDEX($A$1:$AD$1,SUMPRODUCT(MAX(($A2:$AD2=AF2)*(COLUMN($A2:$AD2))))-COLUMN($A$1)+1)

As a robustness check, the trigonometric function tested well when compared to the Google Maps road network.

Table 83 – How the control variables were calculated

Variable	How it was calculated	Where to Find
GPS Location	n/a	Mindat Google Maps
Municipal ward code	n/a	VS Finder
Coordinates of municipal wards	n/a	VS Finder
Municipal ward town	n/a	VS Finder
Municipal ward suburb	n/a	VS Finder
Ward political party	n/a	IEC Municipal Elections Results
Commodity of mine	n/a	Integrated Reports, Mineral Statements, and USGS
Commodity price	n/a	Index Mundi
Employment	Employed = 1	StatsSAStatsSA census data
Working age	15-65	(Statistics South Africa, 1998)
Sex	Male =1	In this study
Distance	Distance between central voting station in a ward and nearest mine	Explained in section 12.4
No piped water	Ratio of people in ward with no access to piped water	StatsSAStatsSA census data
No sewerage	Ratio of people in ward with no sewerage system	StatsSAStatsSA census data
No refuse removal	Ratio of people in ward with no rubbish disposal	StatsSAStatsSA census data
No electricity lights	Ratio of people with no electricity for lights	StatsSAStatsSA census data
Traditional Informal dwelling	Ratio of people living in either traditional or informal dwelling	StatsSAStatsSA census data
Crime		ISS Africa
Municipal elections		IEC Municipal Elections Results
Labour-sending variable	Data from Anglo America Platinum (Amplats), which details number of employees by local municipalities of origin. The study uses this information to create an index over time of the intensity of each local municipality's sending of labour to mining work. The index ranges from 1 = very low, to 5 = very high. This variable is therefore imperfect as it uses Amplats to estimate and generalise the migration flows of labour (see (Anglo American Platinum, 2015).	Anglo American Platinum, 2015
Reconciling place names to wards	The 1996 wave came with wards in the dataset. To ensure that people were placed in the right wards in the 2001 and 2011 dataset, the study used the comprehensive site by Adrian Frith	

	https://census2001.adrianfrith.com/ and https://census2011.adrianfrith.com/. This site helped identify the exact geographic area of each place name. This information could be extracted and searched in the IEC's voting station finder https://maps.elections.org.za/vsfinder/, which provides the ward code. For older ward codes, given the change in wards in 2016, the study used https://wazimap.co.za/, which provides the 2011 ward codes. The Labour Force Survey 2003 Main Place codes list by StatsSA also helped. These codes locate the main place, sub-place, and place code.	

APPENDIX to Chapter 13– Relief or additional curse: the discovery of minerals in former homelands and the impact of the 2000s commodity price boom, 1970-2011

APPENDIX F – 1970-1991 descriptive tables

Table 84 – Changes in population sizes across provinces and homelands in South Africa, 1970-1991

Province/Homeland	Population 1970	Population 1980	Population 1991
Cape	2,981,531	5,102,916	4,518,403
Natal	1,095,201	2,679,612	2,013,873
Transvaal	2,359,326	8,376,042	5,625,712
Free State	402,919	1,939,666	1,421,285
KwaZulu	114,417	3,482,690	2,930,885
Lebowa	57,083	1,755,874	2,096,372
Gazankulu	13,706	517,227	686,685
KwaNgwane (Swazi)	6,178	162,835	445,533
QwaQwa	1,379	159,328	7,102
KwaNdebele	-	157,455	298,575
Bophuthatswana	47,347	1,512,002	1,473,898
Ciskei	29,946	682,880	477,567
Venda	13,980	-	558,797
Transkei	103,285	-	-

Source: Statistics South Africa census 1970, 1980, 1991

Table 85 – Education levels in former homeland areas, census 1970

Province/Homeland	Number of Black People w/ No Education	% Of Black People in Province w/ No Education
Gazankulu	9143	68.94
Venda	8848	66.03
KwaNgwane (Swazi)	3811	64.74
Lebowa	34284	63.20
KwaZulu	64912	61.62
Natal	32446	58.49
Free State	38144	57.79
Transkei	47995	55.73
Transvaal	117656	55.33
Cape	37009	54.78
Bophuthatswana	21815	49.38
QwaQwa	564	45.59
Ciskei	11897	45.19

Source: Statistics South Africa census 1970.

Table 86 shows prospecting activity statistics in the homelands during 1979. It clearly demonstrates that there was a lot of prospecting activity concentrating in the Limpopo homelands by the late 1970s. Prospecting was particularly concentrated in Lebowa; given its platinum and coal deposits.

Table 86 – Prospecting by the private sector during 1979

Homeland	Number of valid concessions	Total extent (hectares)	Expenditure R	Number of Blacks in employment	Black earnings R
Homelands					
Gazankulu	14	72 691	37 906	30	5 192
Lebowa	89	166 857	932 077	120	84 969
Venda	5	6 389	77 297	38	22 754
Ciskei	5	1 625	10 337	18	3 168
KwaZulu	53	887 027	870 761	185	235 962
KaNgwane	4	673	279 615	120	61 265
QwaQwa	1		120 000	16	12 000
KwaNdebele	2	4 713			
Total	**137**	**1 139 975**	**2 327 993**	**527**	**425 310**

Source: South African Institute of Race Relations (1981)

Table 87 – Amounts paid out by Chamber of Mines Employment Bureau of Africa (TEBA)'s regional offices: 1988 and 1989

	1988	1989
	Rm	Rm
Bophuthatswana	17.2	13.2
Botswana*	20.2	19.6
Cape	7	5
Ciskei	2.9	2.9
Gazankulu#	**0.8**	**1**
KwaNgwane	0.4	0.4
KwaZulu and Natal	14	15.5
Lebowa#	**1.9**	**2**
Lesotho*	347.8	408.4
Malawi*	54.8	17
Mozambique*	102.7	114.3
Orange Free State	4.7	1.2
QwaQwa	2.7	2.7
Swaziland*	15.2	16.1
Transkei	73.9	81.3
Transvaal	6	6.5
Venda#	**0.4**	**0.6**
Total	672.6	707.7

*Neighbouring countries
#Limpopo homelands
Source: South African Institute of Race Relations (1990)

APPENDIX G – Additional summary statistics tables

Table 88 – Summary statistics, mines and commodity prices

	$Homelands = 1$		$Homelands = 1 \& M_{w,t} = 1$		$Homelands = 1 \& M_{w,t} = 0$		$Homelands = 0$		$Homelands = 0 \& M_{w,t} = 1$		$Homelands = 0 \& M_{w,t} = 0$	
Variables	Mean N = 11,276,644	Standard Error	Mean N = 7,975,273	Standard Error	Mean N = 3,301,371	Standard Error	Mean N = 8,163,499	Standard Error	Mean N = 5,789,264	Standard Error	Mean N = 2,374,235	Standard Error
Mines and distance												
Multi-commodity ward	0.04	0.0037	0.05	0.0059	0.03	0.0046	0.04	0.0046	0.06	0.0067	0.01	0.0039
Platinum ward	0.26	0.0085	0.33	0.0130	0.18	0.0105	0.09	0.0065	0.08	0.0079	0.10	0.0112
Gold ward	0.09	0.0057	0.08	0.0075	0.11	0.0085	0.13	0.0078	0.16	0.0105	0.08	0.0106
Copper ward	0.03	0.0034	0.02	0.0035	0.05	0.0059	0.10	0.0070	0.04	0.0059	0.21	0.0157
Coal ward	0.07	0.0049	0.05	0.0060	0.08	0.0076	0.21	0.0093	0.28	0.0128	0.09	0.0108
Diamond ward	0.03	0.0032	0.01	0.0027	0.05	0.0057	0.13	0.0076	0.09	0.0082	0.19	0.0150
Chrome ward	0.07	0.0050	0.09	0.0078	0.06	0.0064	0.08	0.0060	0.10	0.0086	0.03	0.0065
Feldspar ward	0.09	0.0057	0.12	0.0090	0.07	0.0069	0.04	0.0043	0.04	0.0055	0.03	0.0069
Commodity prices ($US)												
Platinum	885.26	11.6086	863.89	16.3842	906.35	16.4338	885.26	13.5737	871.66	16.7862	910.07	23.0491
Gold	742.63	11.4218	729.70	15.9670	755.40	16.3297	742.63	13.3553	731.34	16.4746	763.23	22.7873
Copper	4233.78	63.5325	4164.08	88.7759	4302.58	90.8716	4233.78	74.2873	4171.60	91.6289	4347.21	126.7759
Coal	61.23	0.7585	60.10	1.0651	62.34	1.0794	61.23	0.8869	60.41	1.0952	62.72	1.5100
Diamond	30356.57	268.0563	29489.27	386.4409	31212.75	370.4141	30356.57	313.4334	29967.14	390.6921	31067.01	524.3034
Chrome	163.67	2.6375	160.25	3.6947	167.04	3.7630	163.67	3.0840	160.94	3.8061	168.63	5.2571
Feldspar	53.76	0.1420	53.24	0.2059	54.26	0.1949	53.76	0.1661	53.54	0.2076	54.14	0.2763
Industrial index	102.55	1.2870	101.15	1.7983	103.94	1.8410	102.55	1.5049	101.29	1.8562	104.84	2.5683
Metals index	62.64	0.7018	61.80	0.9819	63.48	1.0024	62.64	0.8206	61.94	1.0124	63.93	1.3995

APPENDIX H – Additional regression results tables

Table 89 – Impact of mining on poverty by type of commodity, homeland versus non-homeland areas (other commodities)

	HOMELANDS N = 11,234,396; Mean of y = 0.708			NON-HOMELANDS		
	Upper Poverty (A)		Net coefficient (Poverty)	Upper Poverty (B)		Net coefficient (Upper Poverty)
$M_{w,t} \leq$ 10km	(1)	(2)	(3)	(4)	(5)	(6)
	$M_{w,t}$	$C_{w,t} \times M_{w,t}$		$M_{w,t}$	$C_{w,t} \times M_{w,t}$	
(11) Nickel	-0.0145 (0.0111)	0 (.)	-0.0144809 (0.0111239)	**-0.0407**** **(0.0192)**	0.0179 (0.0150)	-0.0228295 (0.0268855)
(12) Iron	-0.0148 (0.0112)	**0.0387*** **(0.0220)**	0.0238423 (0.0189982)	**-0.0414**** **(0.0193)**	0.0802 (0.0646)	0.0387489 (0.0657702)
(13) Lead	-0.0120 (0.0109)	**-0.272***** **(0.0164)**	**-0.2835941***** **(0.0115279)**	**-0.0408**** **(0.0192)**	0 (.)	**-0.0408036**** **(0.0191844)**
(14) Tin	-0.0142 (0.0111)	0.322*** (0.0205)	**0.3073933***** **(0.02317)**	**-0.0430**** **(0.0192)**	**0.185***** **(0.0254)**	**0.1423744***** **(0.0254245)**
(15) Zinc	-0.0145 (0.0111)	0 (.)	-0.0144809 (0.0111239)	**-0.0408**** **(0.0192)**	0 (.)	**-0.0408036**** **(0.0191844)**
(16) Manganese	-0.0144 (0.0108)	-0.000623 (0.0815)	-0.0150682 (0.0806753)	**-0.0398**** **(0.0192)**	**-0.102***** **(0.0343)**	**-0.1419547***** **(0.0381182)**
(17) Magnesium	-0.0139 (0.0112)	**-0.0687***** **(0.0173)**	**-0.0826153***** **(0.0138987)**	**-0.0408**** **(0.0192)**	0 (.)	**-0.0408036**** **(0.0191844)**
(18) Asbestos	-0.0153 (0.0117)	0.0147 (0.0241)	-0.0005584 (0.0210482)	**-0.0408**** **(0.0192)**	0.00209 (0.0293)	-0.0387449 (0.0335626)
(19) Britholite	-0.0132 (0.0115)	-0.0284 (0.0511)	-0.0415522 (0.0495547)	**-0.0408**** **(0.0192)**	0 (.)	**-0.0408036**** **(0.0191844)**
(20) Beryllium	-0.0145 (0.0111)	0 (.)	-0.0144809 (0.0111239)	**-0.0421**** **(0.0199)**	0.0312 (0.0474)	-0.0108969 (0.042762)

Table 90 – Impact of mining on employment by type of commodity, homeland versus non-homeland areas (other commodities)

	HOMELANDS N = 11,234,396; Mean of y = 0.708					
	Employment (A)		Net coefficient (Employment)	Employment (B)		Net coefficient (Employment)
$M_{w,t} \leq$ 10km	(1)	(2)	(3)	(4)	(5)	(6)
	$M_{w,t}$	$C_{w,t} \times M_{w,t}$		$M_{w,t}$	$C_{w,t} \times M_{w,t}$	
(11) Nickel	0.0140 (0.0101)	0 (.)	0.0140143 (0.0101398)	**0.0389*** **(0.0208)**	0.0201 (0.0198)	**0.0590498**** **(0.0273231)**
(12) Iron	0.0140 (0.0102)	-0.00102 (0.0176)	0.0130034 (.0149777)	**0.0397*** **(0.0208)**	-0.105 (0.0684)	-0.0656093 (0.0699558)
(13) Lead	0.0125 (0.0101)	**0.165***** **(0.0182)**	**0.1770269***** **(0.0146319)**	**0.0388*** **(0.0208)**	0 (.)	**0.0388397*** **(0.02078)**
(14) Tin	0.0137 (0.0101)	**-0.328***** **(0.0137)**	**-0.3139206***** **(0.0176308)**	**0.0408*** **(0.0211)**	**-0.164***** **(0.0526)**	**-0.1231709***** **(0.0462151)**
(15) Zinc	0.0140 (0.0101)	0 (.)	0.0140143 (0.0101398)	**0.0388*** **(0.0208)**	0 (.)	**0.0388397*** **(0.02078)**
(16) Manganese	0.0122 (0.0107)	0.0318 (0.0453)	0.0440086 (0.0430793)	0.0375* (0.0208)	0.139*** (0.0431)	**0.1769909***** **(0.0461054)**
(17) Magnesium	0.0151 (0.0102)	**-0.130***** **(0.0185)**	**-0.1148127***** **(0.0146643)**	0.0388* (0.0208)	0 (.)	**0.0388397*** **(0.02078)**
(18) Asbestos	0.0145 (0.0106)	-0.00837 (0.0280)	0.006088 (0.025679)	**0.0392*** **(0.0208)**	-0.0201 (0.0276)	0.019111 (0.0319575)
(19) Britholite	0.0130 (0.0105)	0.0232 (0.0396)	0.036139 (0.037797)	0.0388* (0.0208)	0 (.)	0.0388397* (0.02078)
(20) Beryllium	0.0140 (0.0101)	0 (.)	0.0140143 (0.0101398)	0.0359 (0.0220)	**0.0688*** **(0.0377)**	**0.1046763***** **(0.0266535)**

APPENDIX I – Additional individual homeland regression results

Table 91 – Summary statistics by homeland: Bophuthatswana and Lebowa

	Qwaqwa				Gazankulu			
	$M_{w,t} = 1$		$M_{w,t} = 0$		$M_{w,t} = 1$		$M_{w,t} = 0$	
Variables	Mean N = 142,918	Standard Error	Mean N = 512,935	Standard Error	Mean N = 593,985	Standard Error	Mean N = 391,746	Standard Error
Individual level (working population:15-65)								
Upper poverty	0.65	0.0013	0.73	0.0006	0.75	0.0006	0.74	0.0007
No income poverty	0.55	0.0013	0.63	0.0007	0.67	0.0006	0.59	0.0008
Employment	0.3	0.0012	0.24	0.0006	0.19	0.0005	0.24	0.0007
Age	34	0.0366	32	0.0189	31	0.0175	32	0.0217
Sex (Male=1)	0.46	0.0013	0.44	0.0007	0.42	0.0006	0.43	0.0008
Education years	9.2	0.0095	8.8	0.0059	5.3	0.0065	8.6	0.0073
Race=Black	0.98	0.0004	0.98	0.0002	0.99	0.0001	0.97	0.0003
Race= Coloured	0.011	0.0003	0.0015	0.00006	0.0008	0.00004	0.0019	0.00007
Race=Indian/Asian	0.0021	0.0001	0.0012	0.00005	0.0005	0.00003	0.0033	0.00009
Race=White	0.0098	0.0003	0.013	0.00016	0.0039	0.0001	0.025	0.00025
Ward level (ratios)								
No piped water	0.092	0.00006	0.044	0.00006	0.13	0.0002	0.078	0.0001
No sewerage system	0.78	0.0007	0.79	0.0004	0.92	0.0002	0.86	0.0004
No refuse removal	0.41	0.0010	0.82	0.0004	0.93	0.0002	0.9	0.0004
No electricity lights	0.2	0.0006	0.43	0.0005	0.35	0.0003	0.2	0.0003
Traditional informal dwelling	0.25	0.0004	0.32	0.0002	0.45	0.0004	0.34	0.0004
Total population	13,000	2.8908	11,000	4.3726	11,000	3.792	11,000	5.124

Table 92 – Summary statistics by homeland: Venda, KwaNdebele, KwaNgwane

	Venda				KwaNdebele				KwaNgwane			
	$M_{w,t}=1$		$M_{w,t}=0$		$M_{w,t}=1$		$M_{w,t}=0$		$M_{w,t}=1$		$M_{w,t}=0$	
Variables	Mean N = 392,798	Standard Error	Mean N = 813,148	Standard Error	Mean N = 105,311	Standard Error	Mean N = 0	Standard Error	Mean N = 1,187,228	Standard Error	Mean N = 562,072	Standard Error
Individual level (working population:15-65)												
Upper poverty	0.68	0.0008	0.75	0.0005	0.72	0.0014	0	n.a	0.68	0.0004	0.69	0.0006
No income poverty	0.6	0.0008	0.61	0.0005	0.65	0.0015	0	n.a	0.59	0.0005	0.62	0.0006
Employment	0.23	0.0007	0.21	0.0005	0.24	0.0013	0	n.a	0.27	0.0004	0.26	0.0006
Age	31	0.0215	32	0.0153	32	0.0419	0	n.a	32	0.0124	31	0.0177
Sex (Male=1)	0.42	0.0008	0.42	0.0005	0.45	0.0015	0	n.a	0.45	0.0005	0.44	0.0007
Education years	3.8	0.0065	8.5	0.005	8.1	0.0143	0	n.a	8.3	0.0043	6.6	0.0069
Race=Black	0.99	0.0001	0.99	0.0001	01	0.0002	0	n.a	0.97	0.0002	0.96	0.0002
Race= Coloured	0.0006	0.00004	0.0012	0.00004	0.0015	0.0001	0	n.a	0.0034	0.00005	0.0044	0.0009
Race=Indian/Asian	0.0015	0.0001	0.0045	0.00007	0.0012	0.0001	0	n.a	0.0029	0.00005	0.0028	0.00007
Race=White	0.0056	0.0001	0.0052	0.00008	0.0022	0.0001	0	n.a	0.026	0.00015	0.029	0.0002
Ward level (ratios)												
No piped water	0.16	0.0003	0.18	0.0002	0.095	0.0002	0	n.a	0.18	0.0002	0.22	0.0002
No sewerage system	0.94	0.0002	0.87	0.0002	0.94	0.0002	0	n.a	0.85	0.0002	0.84	0.0003
No refuse removal	0.93	0.0002	0.89	0.0002	0.97	0.0002	0	n.a	0.86	0.0002	0.83	0.0004
No electricity lights	0.65	0.0004	0.27	0.0003	0.16	0.0004	0	n.a	0.21	0.0002	0.4	0.0004
Traditional informal dwelling	0.46	0.0003	0.16	0.0002	0.27	0.0006	0	n.a	0.14	0.0001	0.2	0.0002
Total population	13,000	6.1458	14,000	2.376	9,000	7.136	0	n.a	10,000	3.3769	10,000	5.3402

Gazankulu

The Gazankulu former homeland is located in north-eastern Limpopo province and was mainly reserved for the Tsonga-speaking people. The former homeland has limited mining activity in its history, relying on neighbouring mining wards. Limited mining in the area includes gold and basic industrial minerals.

Table 93 – Temporal variation created by the commodity price boom: Former Gazankulu homeland

	(1) Upper Poverty	(2) Upper Poverty	(3) Employed	(4) Employed
$M_{w,t} \leq$ 10km	-0.00951	**-0.0562****	-0.0196	-0.0368
	(0.0318)	**(0.0263)**	(0.0670)	(0.0613)
$P_{w,t} \times M_{w,t} \leq$10km		0.0159		0.00587
		(0.0128)		(0.0235)
Constant	1.306***	1.293***	-0.592	-0.597
	(0.390)	(0.383)	(0.363)	(0.358)
Ward fixed effects	Yes	Yes	Yes	Yes
District x Year fixed effects	Yes	Yes	Yes	Yes
Observations	984196	984196	984196	984196
Mean of y	0.742	0.742	0.211	0.211

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Despite limited mining activity, Table 93 shows that mining activity does have an impact in the area. However, the benefits are mainly limited to reduction in income poverty. In terms of employment, individuals located closer to mines are more likely to report themselves as unemployed when mining activity expands. Given that Gazankulu is a major agricultural area, this result might be explained by the dislocation of agricultural and tourism workers. This requires deeper case study research.

KwaNgwane homeland

The KwaNgwane homeland is situated in the Mpumalanga province, around the border with Eswatini (Swaziland). The homeland has very limited mining activity, mainly anthracite. However, the Mpumalanga province is a large mining province, containing coal, gold, chrome, and other important elements.

Figure 70 – Map of the KwaNgwane homeland 1996 and 2011

Source: Mapped using QGIS using mining data from USGS and shapefile from ArcGIS

Table 94 – Temporal variation created by the commodity price boom: Former KwaNgwane homeland

	(1) Upper Poverty	(2) Upper Poverty	(3) Employed	(4) Employed
$M_{w,t} \leq$ 10km	0.00207	0.00316	0.0128	0.0126
	(0.0316)	(0.0693)	(0.0209)	(0.0425)
$P_{w,t} \times M_{w,t} \leq$10km		-0.000283		0.0000503
		(0.0153)		(0.00966)
Constant	1.102***	1.103***	-0.232	-0.232
	(0.296)	(0.297)	(0.232)	(0.238)
Ward FEs	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes
Observations	1749300	1749300	1749300	1749300
Mean of y	0.682	0.682	0.267	0.267

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 94 documents results of the impact of industrial mining in the KwaNgwane homeland. While industrial mining has no impact on poverty in the absence of expansion, the net impact of mining expansion reduces the probability of individual income poverty by 0.06%. However, individuals located in the homeland, in mining areas, are less likely to gain employment than those farther away. This is potentially because those farther away participate in coal mining activity further inland.

KwaNdebele homeland

The KwaNdebele homeland is located in the Mpumalanga province. As shown by Table 95, there is no mining activity within the homeland.

Table 95 – Temporal variation created by the commodity price boom: Former KwaNdebele homeland

	(1) Upper Poverty	(2) Upper Poverty	(3) Employed	(4) Employed
$M_{w,t} \leq$ 10km	-0.0269	-0.0269	**0.103*****	**0.103*****
	(0.0306)	(0.0306)	**(0.0103)**	**(0.0103)**
$P_{w,t} \times M_{w,t} \leq$10km		0		0
		(.)		(.)
Constant	0.127	0.127	0.828**	0.828**
	(0.343)	(0.343)	(0.255)	(0.255)
Ward FEs	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes
Observations	105311	105311	105311	105311
Mean of y	0.722	0.722	0.240	0.240

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

QwaQwa homeland

The Qwaqwa homeland is located in the Free State province. The homeland is located close to gold mines, most of which closed in the late 1990s and early 2000s. However, some consolidated mines remain during the period of study.

Table 96 – Temporal variation created by the commodity price boom: Former QwaQwa homeland

	(1) Upper Poverty	(2) Upper Poverty	(3) Employed	(4) Employed
$M_{w,t} \leq$ 10km	0	0	0	0
	(.)	(.)	(.)	(.)
$P_{w,t} \times M_{w,t} \leq$10km		0		0
		(.)		(.)
Constant	0.349	0.349	0.189	0.189
	(0.529)	(0.529)	(0.336)	(0.336)
Ward fixed effects	Yes	Yes	Yes	Yes
District x Year fixed effects	Yes	Yes	Yes	Yes
Observations	639807	639807	639807	639807
Mean of y	0.717	0.717	0.249	0.249

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 96 documents the results in Qwaqwa. There was no variation for the few mines located close to the homeland, therefore the Mwt variable is omitted. However, the commodity price boom provides variation. The results show that individuals located close to gold mines during the boom enjoyed a decline in individual income poverty by a probability of 0.03%, and a probability of 0.02% chance of gaining employment.

The end of the joint-PhD document. Thank you.
