SA'S TRADE POLICY: THE IMPACT OF CHINA'S ECONOMIC SLOWDOWN ON SOUTH AFRICA'S MINERAL COMMODITY TRADE

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DECLARATION

I declare that this research report is my own unaided work. It is being submitted to the degree of Master of Science in Engineering to the University of the Witwatersrand, Johannesburg. It has not been submitted before any degree or examination to any other University.

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(Signature of Candidate)

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ABSTRACT

The economic relations between China and South Africa have been largely based on the mineral resources of South Africa. Hence, China's rapid economic growth of recent had positive disruptive impacts on South Africa's economy. Conversely, the recent slowdown of China's economic growth has had negative effects on South Africa. By assessing the value of mineral product exports from South Africa to China from 2001 till recent, this research project provides an outline showing that the decline in China's economic growth has not been advantageous to South Africa's economic economy. It seems that as China and South Africa's comprehensive strategic partnership strengthens, South Africa will continue to be affected by the changes in commodity prices associated with China's economic growth. This also includes changes in mineral input growth.

Based on the findings of the spillover effects of this decline in SA's mineral export value to China, this research project aims to encourage the policy-makers of South Africa to see the need for their current policies to be re-assessed. This re-assessment is for determining whether their policies are capable of enabling their economies to handle the disruptive changes that can occur in their trade relations with a giant economy like China. The result should be restructuring their policies so they would have buffers for changes in global mineral prices and demand, as well as make them better prepared to enter beneficial engagements with China, when its economy grows stronger again.

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I dedicate this research project to my late father, Ezekiel who instilled the love for writing in me. May your soul rest in peace Dad.

TABLE OF CONTENTS

List of Tables

List of Figures

Abbreviations and Acronyms

BRICS	Acronym coined for an association of five major emerging national economies: Brazil, Russia, India, China and South Africa.
CFR	Cost and freight is a trade term obligating the seller to arrange sea transportation to a port of destination.
EU	European Union
FDI	Foreign Direct Investment - an investment in the form of controlling ownership in a business in one country by an entity based in another country
GDP	Gross Domestic Product -the total value of goods produced and services provided in a country during one year
GEIS	General Export Incentive Scheme
GNP	Gross National Product (GNP) - the total value of goods produced and services provided by a country during one year, equal to the gross domestic product plus the net income from foreign investments.GEIS)
JSE	Johannesburg Stock Exchange
MENA	A region encompassing approximately 22 countries in the Middle East and North Africa.
NGO	Non-Governmental organization
PRC	Peoples' Republic of China - is a country in East Asia and the world's most populous country
SADC	Southern African Development Community
US	United States
US$	US dollars
WITS	World Integrated Trade Solution

Glossary

Commodity	Natural resources such as minerals and metals.
Comparative Advantage	Phenomenon describing the reasons nations trade with one another.
Domestic Factors	Internal factors within a country that contribute to its development, including education, healthcare and technology.
External Factors	Includes lower commodity prices, higher borrowing costs and diminished confidence.
Economic Welfare	It specifically refers to utility gained through the achievement of material goods and services.
Export Revenue	The person's total export revenue for a year divided by the persons specified total revenue for the year
Factor Endowment	Amount of labor, land, money and entrepreneurship that could be exploited for manufacturing within a country.
Free Trade	The minimal involvement of government in international trade so that businesses are not restricted from exporting goods and imports from other countries by protectionist means
Generation of output	The quantity of goods or services produced in a given time period by a firm, industry, or country
Import surge	A situation in which the quantity or value of imports suddenly exceeds a "normal" level.
Median Voter Theorem	States that "a majority rule voting system will select the outcome most preferred by the median voter.
Mercantiles	Relating to or having the characteristics of Mercantilism
Mercantalism	Advocates limiting imports to those absolutely necessary whilst exporting enough for profit action/policy over

	other actions/policies.
One China policy	A policy stating that there is only one country of China, despite the fact that there are two regimes, People's Republic of China and Republic of China, with the official name of China.
Ores	Metals extracted from the surrounding rock and brought to the earth’s surface by both energy and capital intensive measures.
Resource curse	The tendency for natural resource abundance to immiserate growth and development.
Ricardian Model	Model uses technological differences in production across countries to explain differences in international trade.
Utilitarianism	Normative ethical theory that places the locus of right and wrong solely on the outcomes (consequences) of choosing one .

1 INTRODUCTION

1.1 Introduction

The dominance of a natural resource in an economy can harm the economic performance of that particular country, a phenomenon known as the resource curse. Countries that suffer from a resource curse specialize in natural resources extraction and their incomes per capita are higher than normal but their economic growth is slower than normal. In this study, the term 'commodity' includes natural resources such as minerals and metals. These natural resources are defined as the 'stocks of materials that exist in the natural environment that are scarce and economically useful in production or consumption, either in their raw state or after a minimal amount of processing' (Davis, 2010). The mining of mineral and metal resources plays a significant role in South Africa's socio-economic development objectives. South Africa is known as a leading producer of manganese and platinum globally, and one of the top producers of gold, diamond, iron ore, chrome and coal. South Africa's abundant mineral resources have contributed to the rapid industrialization of countries such as China over the years (Alves and Sidiropoulos, 2010). The focus of this study is on the policy implications of the growing impact of China's economic slowdown on South Africa's mineral commodity trade. The rest of the introductory chapter provides a brief outline of the background of the study, the research objectives, the limitations and the methodology used in this study.

1.2 The current state of South Africa and China's trade relationship

The continuous appetite for South Africa's mineral resources and its open market has made South Africa an attractive export and import destination for China (Alves and Sidiropoulos, 2010). South Africa and China have a relationship that is termed a 'comprehensive strategic partnership' (Xiong, 2012). A recent challenge to this 'comprehensive strategic

partnership' is the current decline (2013 - 2015) of China's economic growth which has affected the mining industry of South Africa. The decline follows Beijing's attempt to move towards a consumer-based economic model. The current slowdown has been the slowest economic growth that China has experienced in the last 25 years (see Fig 1.1). The Chinese economic decline has contributed to South Africa's current position of vulnerability, which has been characterized by slow economic growth that has been accompanied by a high unemployment rate of 25 percent in 2016, for instance.

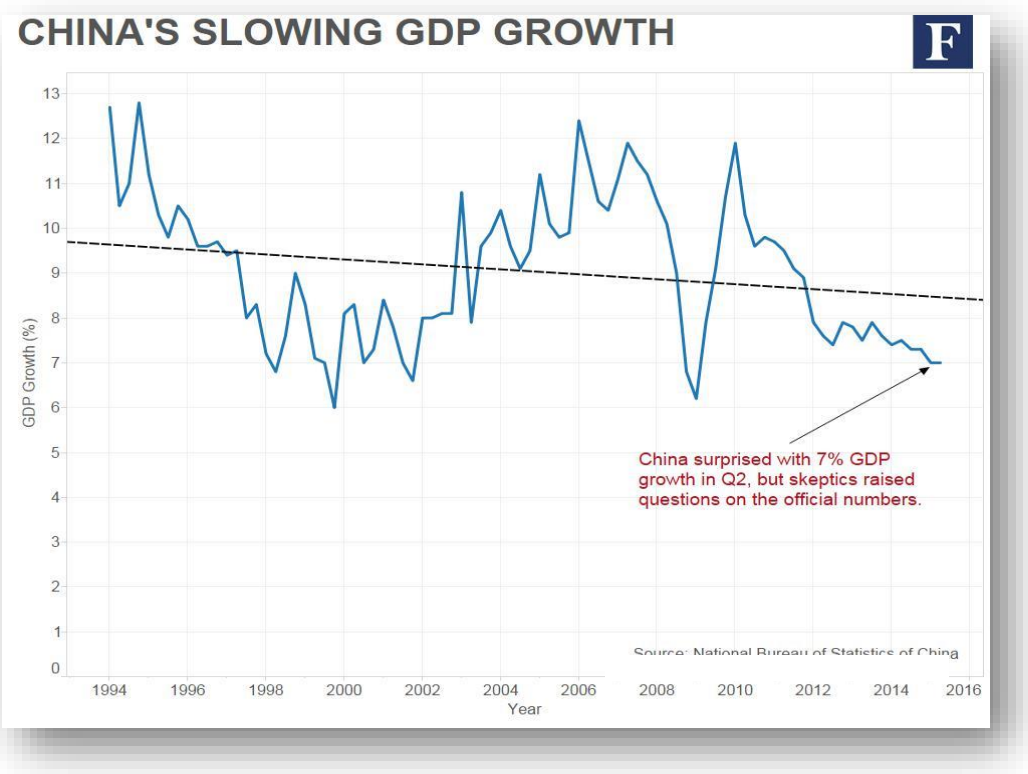

Fig 1.1: China's economic growth over the years. Source National Bureau of Statistics of China.

For many years, China experienced unquantified economic growth rate (s) because of three main factors - its investment in infrastructure, low labour costs and rapid productivity growth (CCS, 2016). China had been experiencing an average growth rate of 10 percent annually from 1979, but started experiencing a steady decline in growth rate from 2011.

The growth rate of the economy of China dropped from 10.6 percent in 2010 to 6.9 percent in 2015 (CCS, 2016). According to Zeilstra (2015), any sharp economic slowdown experienced by a major global player like China has a negative impact on the overall economic growth of the countries exporting goods to China. The consequences of China's recent economic decline from 2011 till to date have been transmitted primarily through the channel of trade. Trade in natural resources is a growing topic in international trade relations and is a key to the economic growth of many developing countries like South Africa. It is well known that developing countries tend to export raw materials and import manufactured goods (Davis, 2010). According to Maxwell (2006), nations freely trade goods and services with one another to increase their economic welfare.. Countries will export goods, which intensively use the factor of production with which it is relatively well endowed and import that which it is relatively poorly endowed. The globalization of natural resources has been driven by factors such as population growth and the growth of developing economies (WTO, 2010). The movement of goods and services internationally is typically more complex as different countries have different currencies and erect trade barriers (Maxwell, 2006).

According to Fedderke and Pirouz (2002), the economic development of South Africa has een intimately tied to the growth in its mining industry. Mining has played a pivotal role in the generation of output for the economy of South Africa. According to Statistics SA (2018), the mining sector of South Africa, contributes significantly to the Gross Domestic Product (GDP). GDP is defined as the total value of goods produced and services provided in a country during one year. During the past two decades developing mineral-rich, countries have become increasingly dependent on the fast-growing economy of China, which has managed to maintain an average growth rate of about 10 percent over the last two decades. In turn, the mineral and metal exports of these developing mineral-rich

countries have risen sharply as a percentage of GDP (IMF, 2015). According to Oyejide et al (2009), countries benefit from productivity growth and increased income in the economies of their trading partners. Although, the effect of trade policy on income and growth is said to be controversial, the channels and expansion of trade are assumed to have an influence on GDP per capita growth (Busse and Koeniger, 2012). In the changing global environment, BRICS for example is expected to contribute nearly half of all global gross domestic product (GDP) growth. South Africa in particular plans to use its BRICS membership to increase strategic cooperation among the emerging market economies (SA Government (2018). Economic growth is defined as the percentage rate of growth in total production over a given period such as a year. Economic growth is important as it reduces poverty and unemployment. . It is stated that trade has brought about unfavourable changes in the economic and financial scenarios of the developing countries and developed countries have mostly benefited from the trade gains (Economy Watch, 2010). Trade however has continually been pursued by most international countries as it has proven to boost development and reduced poverty in developing countries by generating growth through increased commercial opportunities and investment. It has also broadened the productivity of developing countries through private sector development (European Commission, 2018). The countries that export resources can control both the quantity of the resource exported and quantity produced through trade policies. It is said that in this globalized world, if a small country is exporting or importing a commodity, the domestic policy in place will affect the quantity exported or imported (WTO,2010).

According to the DTI (2010), trade policy is not the sole determinant of trade performance of both commodity and non-commodity products, but it is an important element to the growth paths and industrial policies of countries including South Africa and hence, requires thorough attention. Policy priorities vary in developing countries and are dependent on the

diversity of their conditions (WEO, 2016). According to Busse and Koeniger (2012), trade policies can be seen as responses to market imperfections or mechanisms of rent-seeking. WTO (2010) mentioned that for exhaustible and finite resources, the effects of trade policy depend on both the level of interventions and the evolution of a policy over time. In addition, the effects of policy interventions may differ in certain ways depending on the characteristics of natural resource markets. Trade policies are important to resource exporters as natural resources have a tendency of entirely dominating economies.

1.3 Background of the Study

This chapter provides an overview of South Africa's overall economy and mining industry as well as the Chinese economy whose waning economy directly impacts South Africa.

1.3.1 South Africa's Economic Review

South Africa has the fifth largest mining industry in the world with a resource base that is estimated to be US$ 2.5 trillion (see Fig 1.2) (Antin, 2013). South Africa is the world's largest producer of manganese and platinum and a top producer of coal, iron ore, gold and diamond (CCS, 2016). The mining industry of South Africa has contributed significantly to the GDP of the nation over the years (Antin, 2013). However, according to IDC (2016), the growth outlook of South Africa has deteriorated considerably due to both domestic and external factors. The external factors include lower commodity prices, higher borrowing costs and diminished confidence (National Treasury, 2015). Stats SA (2016) stated that the GDP growth of South Africa has declined from 1.5 percent in 2014 to 1.3 percent in 2015. The sluggish growth has been a result of depressed commodity demand from China – a consumer country, low global commodity prices and low investments.

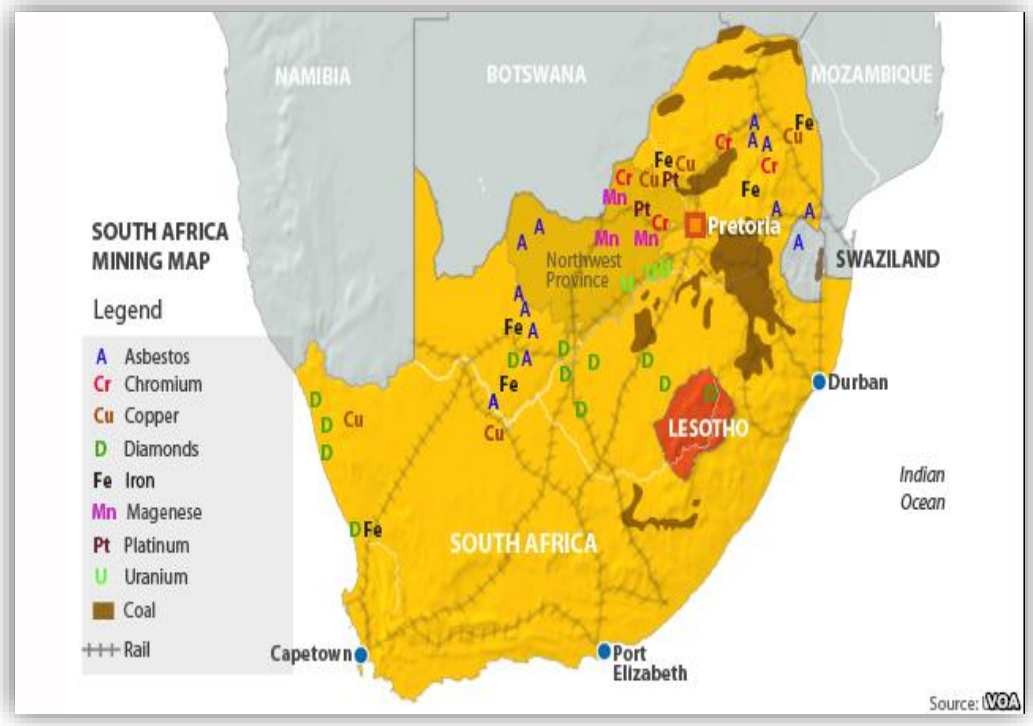

Figure 1.2: A map of the some mineral resources mined in South Africa. Source: USGS (2003).

According to Antin (2013), South Africa's mining industry has been at the heart of the country's economic development given the country's position as one of the resource-rich nations in the world. The mining industry is South Africa's most critically observed sector today as it contributes significantly to GDP and has created a number of jobs over the years. South Africa produces a number of mineral commodities and currently sits as a leading producer of Platinum Group Metals (PGMs), gold, chromium and coal. Most of South Africa's minerals are designated for export. The four main mineral commodities in terms of their contribution to sales and employment have been PGMs, coal, gold and iron ore (see Table 1.1). In terms of reserves, South Africa is number one in PGMs, gold and other less valued minerals. It also holds a similar position in productivity to its position in terms of reserves. According to Stats SA, between 2010 and 2015, those employed in the mining

industry were the top performing earners with the largest nominal increases in earnings (Chamber of Mines, 2017).

Table 1.1: Top 7 Mineral Commodities in South Africa (2011). Source: Antin (2013).

Top 7 Mineral Commodities in SA (2011)							
Commodities	PGM	Gold	Coal	FeOre	Cr Ore	Mn Ore	Diamond
Producer (Global)	1	5	7	6	1	2	3
Reserves (Global)	1	1	6	13	1	1	4
Employees (in k)	195	145	78	22	16	7	12
Profit margins (in %)	35	24	19	8	3	1	2
Total Sales by value (in billion R)	84	68.9	87.8	62.6	8.6	9.9	14.4
Export sales by value (in %)	100	95	58	93	1	87	100

The mining industry of South Africa has attracted foreign investment and created leading global enterprises. It has also undergone major turmoil since the beginning of 2008 during the global financial crisis and in 2012, during the decline of production in the platinum sector respectively. The 2008 - 2009 global financial crisis and the 2012 platinum strikes restricted economic growth for South Africa during these periods leading to a decline in its economy. According to Antin (2013), these factors would continue to determine economic performance in both 2014 and 2015. Between December 2014 and December 2015, the

Rand depreciated by more than 30 percent and unemployment remained at a high of 25.3 percent (CCS, 2016).

Fig 1.3: Africa is top mining companies. Source: Mining Africa (nd)

In 2016, the mining industry declined by 11 percent in production and this was a major contributor to the slowdown of South Africa's economy (see Figure 1.4). The drop in production was of coal, gold, platinum and iron ore (Stats SA, 2016). According to Antin (2013), a major crisis in the mining industry poses a great risk to South Africa's economic growth path.

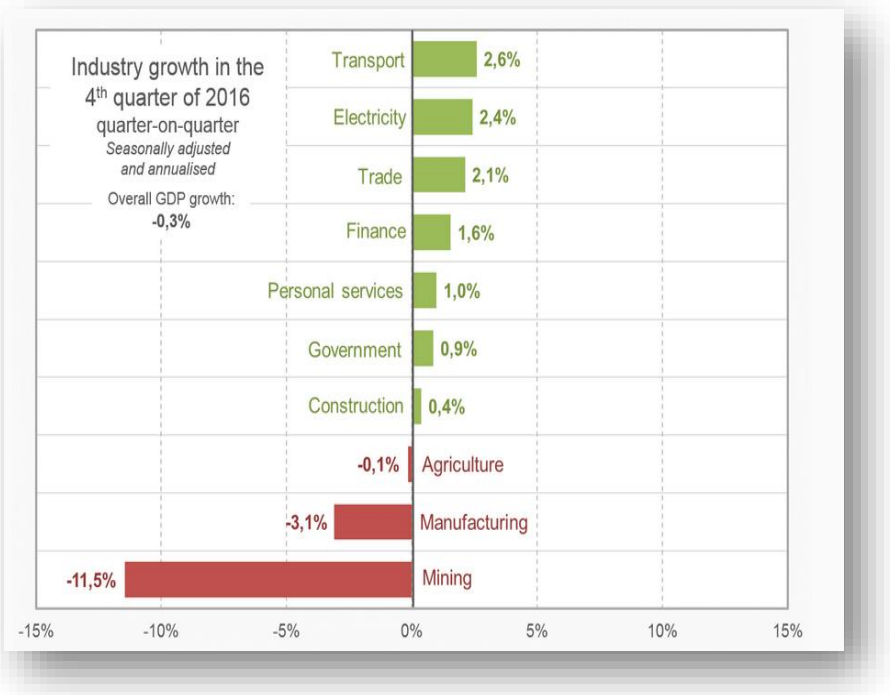

Figure 1.4: South Africa's economic sector growth in the 4th quarter of 2016. Source: Stats SA (2016).

1.3.2 China's Economic Overview

From the mid-1990s, China has been experiencing high economic growth at a sustainable rate of between 8.0 and 11 percent (Oyejide et al, 2009). According to the World Bank (2017) China's GDP growth has averaged approximately 10 percent annually from 1979 – 2011, the fastest expansion experienced in history. It has become the second largest economy in the world and has grown to have a significant influential role in the global economy. China's large economy is underpinned by a huge population and rapidly rising income, which provides a significant economic base for stimulating further growth (Sandrey, 2009). According to CCS (2016), China consumes 40 - 60 percent of mierals produced globally. Its demand for commodities over the last decade has contributed to the increase in prices and has motivated capital investments in the global mining industry. Recently, China's shift towards greater domestic consumption and less debt-fuelled investment has reduced its economic growth and as a consequence, also reduced global

growth and commodity prices. Below is a comparison of the economic indicators of both South Africa and China (see Table 1.2).

Table 1.2: The Economic Indicators of China and South Africa in 2017.

Economic Indicator	South Africa	China
Gross Domestic Product	$ 349. 4193 Billion	$ 12. 2377 Trillion
GDP per capita growth (annual %)	1.32	6.9
Trade Surplus	$ 37 Billion	$ 509.9 Billion

Source: Trading Economics (2017).

1.3.3 The Comprehensive Strategic Partnership

Trade and trade policy are important factors that shape economic growth patterns and trends in the world. The concentration of a region's exports on relatively few primary commodities of low and unstable prices is considered a major contributor to the poor growth performance of its economy (Oyejide et al, 2009). China is a leading destination for a number of African exports and a source of a wide range of manufactured goods to different countries in Africa. The resource endowments (petroleum, mineral and metal raw materials) of some countries in Africa satisfy the criteria of the importation requirements of China (Oyejide et al, 2009). Some of the African countries that are trading partners of China for the importing and exporting of natural resources and manufactured goods include Zambia, Sudan, Congo, Angola and South Africa (Oyejide et al, 2009).

For alignment with the focus of this research, it is important to first examine the factors that have led to increased trade relations between Africa and China, this is to fully understand that of South Africa and China. The relationship between China and Africa is entirely based on strategic economic interests and Beijing's less strict power makes China's engagement with African countries more compelling and attractive to African leaders. The trade between China and Africa has increased from US$ 6.5 billion in 1999 to US$ 106.8 billion in 2008 (Naidu and Mbhazima, 2008). By 2014, the trade between China and Africa was US$ 221.5 billion (Nowak, 2016). According to Peh and Eyal (2010), China's involvement in Africa is opaque and the real role that China is playing in Africa is not clearly revealed. Naidu and Mbazima (2008) stated that the China-Africa trade relations are labelled as unbalanced. Nevertheless, there is increased global interest in the rise of China in Africa due to its significance to the international system and the strengthening of its cooperation with Southern African countries. As China's economy transformed, moving from being a producer of primary (agricultural) products to being a manufacturer and service provider, many African countries remained producers of primary products. Therefore, the pattern of trade is that African countries export primary products, which they have more relative supply of and import manufactured goods and services that they have inadequate supply or skill to produce.

The resource endowments of many African countries have been a key to the import requirements of China. Increased demand for infrastructure by African countries to promote growth has also been an important factor that has led to increased trade relations between China and Africa (Oyejide et al, 2009). For South Africa, China's economy holds a strong position as its biggest trading partner surpassing the US and Europe (CCS, 2016). According to Xiong (2012), the drafting of the 'comprehensive strategic partnership' between South Africa and China is based on common needs in relation to economic

exchanges and global agendas. This comprehensive strategic partnership is also influenced by the power position of South Africa on the African continent and China being a leader in the developing world. South Africa is a major player in the global mining industry where China consumes a majority of the minerals produced (CCS, 2016). South Africa's slow moving economic growth is further exacerbated with China's economic growth being on the decline. The transition of China's economy has resulted in a drop in demand for South Africa's mineral commodities. This has led to the fall in commodity revenue for South Africa. The growth rate of the Chinese economy dropped from 10.6 percent in 2010 to 6.9 percent in 2015 (CCS, 2016).

The Chinese slowdown has proven to be a challenge for South Africa since it is a country whose economy is significantly reliant on mineral commodity exports for economic growth and not a sufficiently well-diversified economy (Bremmer, 2015). Irrespective of this, China's partnership with South Africa continues to rise with a potential for growth in the long term. This is due to the fact that China's strong appetite for mineral resources has inevitably powered the economy of South Africa over the years, although it has been seen as disadvantageous by some. Hence, this study aims at determining how and to what extent China's economic slowdown has affected the mining industry of South Africa and the overall economy. It also aims at determining whether South Africa consists of a well-constructed trade policy that positions it to be able to handle the economic dynamics of China's continued appetite for South Africa's mineral resources.

1.4 Problem Statement

According to Cashin et al (2016), given the emergence of China as a global force in the world economy in recent years, any slowdown and change in the composition of its GDP growth can bring about significant spillovers to other systematic economies, and its trading

partners. Oyejide et al (2009) stated that South Africa and China lack a trade relation that is well balanced. As mentioned previously, the waning of China's economic growth accompanied by the decline in demand for commodities and decreasing prices adds a challenge to the trade relations between South Africa and China. Any changes in China's economic growth will affect the mining industry of South Africa and in turn the overall economy.

Minerals constitute a significant percentage of South Africa's export revenue. The economy of South Africa has been built on the mining of gold and diamond mining and the industry is an important foreign exchange earner. The mining sector accounts for approximately one-third of the market capitalisation of the JSE and is a magnet for foreign investment in the country. According to the Chamber of Mines, the mining sector creates one million jobs, accounts for about 18 % of the GDP, is a critical earner of foreign exchange, accounts for 20% of investment and accounts for 13.2% of corporate tax receipts. South Africa's Reserve Bank floating rate regime is a major influence on its mining industry. According to CCS (2016), trade flows i.e. demand for goods and services, FDI and portfolio investment primarily determines the value of the rand, and this strongly influences the mining industry of South Africa (Brand SA, 2012). It is important to evaluate South Africa's current trade policy and its role in the mining industry of South Africa. This will provide an understanding of whether the trade policy of South Africa is suitable to handle the economic dynamics of China's appetite for minerals in the future. The gap in the knowledge of international trade is that the future global trading environment is uncertain but unpredictable and there is little understanding of whether there are suitable policy measures for mineral dependant developing countries that are aimed at restricting the impacts of the economic dynamics of China's continued appetite for South Africa's mineral resources going forward.

1.5 Research Objectives

The objectives of this study are to determine how and to what extent China's economic decline has impacted the mining industry of South Africa through the commodity trade relationship between the two countries. In addition, the study aims to determine whether the current trade policy of South Africa is suitable to withstand the economic dynamics of China's continued appetite for mineral resources. The objectives of this study are the following:

- Development of a detailed timeline of the factors that have driven the commodity (minerals, metals) trade relations of South Africa and China over the past 15 years.
- Provision of an interpretation of the China-South Africa commodity export data for short term review of the recent economic impacts (2013-2016) associated with the slowdown of China's GDP growth.
- Conducting a review of the current state of trade policy discussion in South Africa to determine if there are favourable trading conditions for the country.

The questions that this research project aims to answer are the following:

- What are the recent developments in the commodity trade relation of South Africa and China?
- What are the factors that are likely to drive the trade pattern and performance going forward?
- How has the slowdown in China's GDP growth affected the mining industry of South Africa?
- What role has South Africa's trade policy strategy played thus far?
- Is South Africa well positioned for possible unfavourable trading conditions in the

future?

This study is therefore important to help understand the factors that have contributed to the developments of the mineral commodity trade relations between South Africa and China, the changes in China's economic growth and the accompanying spillovers to the mining industry of South Africa.

1.6 Justification of the study

As mentioned previously, the analysis of the underlying factors that have led to the impacts of China's economic slowdown on the mining industry of South Africa and overall economy, which will be carried on in this study will help determine what South Africa is likely to experience in the future in terms of export growth. This will help determine whether South Africa needs to deepen its relations with China going forward especially if South Africa is looking to realize its objective of possessing a more diversified economy. The assessment of the patterns and direction of trade over time between South Africa and China will provide a clear understanding of the current economic dynamics and the implications for trade policy.

This is important and sets a scene for analysing the trade policy of South Africa in terms of determining whether it positions the country to capitalize on features of the global trading environment. This study would look into the impacts of China's economic slowdown on the mining industry of South Africa to determine how important it is that South Africa not only re-evaluate its economic relations with China but also reconstruct its trade policy to withstand vulnerabilities going forward. This major contribution of knowledge will attempt to provide policy makers with additional information that will assist in the improvement of trade policy and the formulation of comprehensive trade strategies for South Africa's mineral resources going forward.

1.7 Research Limitations

According to Simon (2011), limitations are the potential weaknesses in one's study and are out of one's control. The following are the potential limitations of the research project:

- The methodology and the procedures that will be followed could ultimately affect the outcome of the research. In this case, there could be bias in the use of secondary data as the choice/type and the number of sources is entirely determined by the researcher.
- The lack of data or reliable data might require that the scope of the researchers analysis be limited. In this study, it could be a significant obstacle in finding patterns and meaningful relationships between South Africa and its trading partner China.
- The data reported by the researcher could also be a limitation by the fact that it rarely can be independently verified. It can contain sources of inherent bias.
- Access to experts and practioners can also be a limit for the study i.e. denied access for interviews.

1.8 Research Methodology and Structure

This section provides a short overview of the methodology, which would be discussed in more detail in Chapter 3. Sithole (2015) stated that the motives, attitudes, understandings and strategies of partnerships in international relations are employed but not deliberately revealed, and this is often problematic as underlying issues are often overlooked. Two research methods are used in this study: qualitative and secondary data collation and analysis method. These methods are used in an attempt to gain an understanding of the underlying factors that motivate the trade relations between South Africa and China. Also, they are used with the aim to gain insight into the settings of the research problem (the

impact of China's economic slowdown on South Africa's mining industry). The qualitative method includes the use of descriptive data based on the observations of various scholars and researchers with the primary intent of developing themes from the data (Creswell, 2003).

The secondary data collation and analysis method is used in this study to evaluate existing information in the quantitative context with focus on the current knowledge and statistical data presented by analysts and observers. The existing statistical data surrounding international trade relations of South Africa and China from years 2001 - 2016, will contribute to the analysis section of the research project (MacDonald and Headlam, 2009). A thematic analysis is used to identify the main themes of the research project. The structure of the research project includes the following sections: introduction, literature review, methodology, data presentation and analysis, interpretation and conclusion.

Chapter 1: Introduction, research objectives and limitations

This chapter includes the background and rationale, problem statement, research objectives, research design and reasons for this study.

Chapter 2: Literature review

The chapter provides the literature review which includes: the international trade theory and policy (Institutions and framework of mineral development, models of comparative advantage and Heckscher- Ohlin, and the political economy and trade policies).

Chapter 3: Research Methodology

The focus of the third chapter is on the research methods used for this study: the qualitative method (comprehensive documentary analysis) and secondary data collation and analysis.

The aim of the chapter is to justify the procedures followed to answer the questions of this research project.

Chapter 4: Presentation of Findings

This chapter provides a detailed description of the findings based on the results accumulated through the qualitative as well as secondary data collation and analysis methods.

Chapter 5: Interpretation of results

The focus of the fifth Chapter will be on interpreting the findings of the research project and establishing the patterns and themes necessary to determine the factors that have influenced the impact of China's economic slowdown on South Africa's mining industry. The results from the trade pattern analysis will be used to address policy implications in order to support whether the trade policy of South Africa needs to be reviewed to enable it to withstand a continuously changing and competitive global trading environment.

Chapter 6: Conclusion

The sixth chapter is the conclusion of the research project, which will include the key findings and recommendations of the study.

1.9 Conclusion

The aim of the study is to understand the different economic dynamics that influence and affect international trade as it is assumed that these are the same factors that have contributed to the developments of China and South Africa's mineral commodity trade relations. The impact of China's slowdown on South Africa's mining sector through the channel of trade will help determine whether South Africa's trade policy needs to be reviewed so as to position South Africa to become less vulnerable to global economic

dynamics such as China's growing appetite for South Africa's mineral resources going forward.

2 LITERATURE REVIEW

2.1 Introduction

As previously mentioned in Chapter 1, the developments of the strategic relationship between South Africa and China have been triggered mainly by economic interests. In addition, trade is the channel through which the decline in China's economic growth has affected the mining industry of South Africa in the last 3 years – this is further discussed in Chapters 4 and 5. The first section of this literature review provides an overview of the following notions of international trade: the international trade theory of mineral commodities, the international political economy of trade and trade policy. This section of the literature review is necessary as it provides the basis for the factors that have contributed to the developments of the trade relationship between South Africa and China. The second section of the literature review provides an overview of the strategic partnership between South Africa and China and the trade policy of South Africa. The focus is on commodity trade patterns that have occurred over the years so as to help understand the factors that have led to the impact of China's recent economic slowdown on South Africa's mining industry. The following topics are discussed with regards to the trade relationship between South Africa and China:

- The evolution and patterns of the trade relations between South Africa and China;
- The slowdown of China's economy and its impact on the mineral industry of South Africa (2013-2015); and
- The current state of the trade policy of South Africa and its potential of facilitating the current and future trading environment between the two countries.

2.2 The International Trade Theory

According to Suranovic (2010), the understanding of the international economy is dependent on appreciating the application of economic models to the real world. Also, the study of the concepts and policies of international trade is important to help understand its effects on both individuals and businesses. This helps with the understanding of the effects of changes in trade policies and other economic conditions. According to WTO (2010), any comprehensive and fruitful analyses of the factors that shape international trade together with their implications for trade policy can only be performed effectively with the help of a clearer understanding of trade patterns over time. Balaam and Veseth (2005) defined international trade as a result of the production structure of the international political economy. The production structure is a set of relationships that determine what is produced, the location and price at which it is produced. The trade that occurs between nations involves the sum total of trade done by the businesses that are registered to trade on behalf of the nation.

According to Davis (2010), energy and minerals form part of the non-renewable resources that can be traded internationally. International trade in ore is quite rare. The first saleable product of mining is called concentrates, which are manufactured from mineral ores. Mineral ores are extracted from the surrounding rock and brought to the earth's surface by both energy and capital-intensive measures. Due to the relative low price of ore per ton, mineral ores need to undergo at least some processing in order to increase their value per unit weight before they can be sold. According to IMF (2018), trade is driven by comparative advantage as observed by Ricardo who stated that one country may be more productive than others in all goods. He stated the same country would still benefit from trading according to its comparative advantage, which is exporting products in which its absolute advantage was the greatest and importing products in which its absolute advantage

was comparatively less. Therefore although a country may be twice as productive as its trading partner in producing X, it may be three times as productive in producing Z and benefits more from producing and exporting Z. Because of comparative advantage, trade raises the living standards of both countries. The exchange of goods and services that occurs between nations has a multiplier effect on their respective economies. In most cases, employment is created and the international economic integration is further strengthened (Balaam and Veseth, 2005).

2.2.1 The History of International Trade

The understanding of the future shaping factors of world trade requires the acknowledgment of the historical forces that created the global trading system we have today (WTO, 2013). The theory of international trade dates back to Colonial period 1776 and 1826 based on the publications by Smith (1986) and Ricardo (1951) as mentioned by Sen (2010). According to Suranovic (2010), since the Great Depression of the 1930s, a steady decline of trade barriers stirred the growth of international trade and investment. Post-World War II, negotiations among the growing body of members occurred to jointly reduce tariffs (import taxes) on imported goods. These negotiations were prompted by the General Agreement on Tariffs and Trade (GATT). Countries[1] would then lower tariffs on imported goods and begin to liberalize the agriculture and services markets (Suranovic, 2010). The multilateral trade negotiations under the GATT, further liberalized trade among many developed and developing countries. Since the early 1980s, developing countries flocked to free trade in belief that it would propagate economic development (Milner, 1999). Regional trade agreements arose in 2009 as countries needed to promote

[1] By 2009, 153 countries of 195 in the world were members of the WTO 'trade liberalization club' which was created to manage this system of new agreements, providing the forum for the discussions of matters relating to trade.

interdependence and connectedness with the trade partners they regarded as economically and strategically important (Suranovic, 2010). Table 2.1 outlines some of the important events in the history of international trade.

Table 2.1: The events that have shaped the history of international trade.

Year's	Historical event related to Commodity Exports
Pre 1800	• The 1607 Jamestown Colony was one of the several English investment attempts to discover and exploit precious metals, non precious metals and non precious metallic ore. • Before the Industrial Revolution, drift mines and bell pits were the two types of mines that existed. These were small –scale coal mines.
1800 – 1930	• Marked the rise of a world trading system beginning largely with industrial revolution. During this time, the steam power was the first revolutionary technology, which transformed transportation starting from steam ships, and the opening of the Suez Canal in 1869. • The improvement of the steam engine increased demand for coal. • During this time, the trans-oceanic trade in grains, metals, textiles and other bulk commodities became increasingly common. • The mid – 1800's marked the great gold rush that occurred after gold was discovered in the US. • The Great Depression was characterized by a steady decline of trade barriers. This led to the growth of international trade.

Source: Adapted from Edwards and Lawrence (2008), Radetzki (2008), Davis (2010), Suranovic (2010), Lichtenstein (2013) Heuvel (2007) GK (2013) and WTO (2010).

1950 - 1960	• The countries that were abundant in labour and capital exported manufactures. The countries that were abundant in natural resources exported raw materials. • The extreme exporters were the US, UK, France, Italy, Belgium and Japan. • The countries that demonstrated a higher concentration of trade in minerals and energy per unit of Gross National Product (GNP) were Indonesia, Columbia, Ecuador, Libya, Canada, Chile and Nigeria. • Smaller coal mining companies merged into larger, more diversified firms. • The minerals and metals accounted for about 12.4 percent of the value of the global exports.
1970 – 1980	• In 1975, 62 percent of the manufacturing exports from developing countries were resource-based manufactures. • Large parts of the metal and steel sectors were in one form or the other state-owned. In the late 1980's, the economic crisis started.
2008 – 2009	• The year 2008 was a year of strong interest in world commodity markets because prices had soared. Competition in the coal mining industry increased leading to a demand for better technology and new mines • In 2009, the largest economic slowdown since the early 1980s occurred – International trade fell considerably all across the world.

Source: Adapted from Edwards and Lawrence (2008), Radetzki (2008), Davis (2010), Suranovic (2010), Lichtenstein (2013) Heuvel (2007) GK (2013) and WTO (2010).

It is important to highlight the Ricardian and Heckscher-Ohlin models, of comparative advantage[2] in this literature review due to contributions that the models have made towards the understanding of international trade. The models are considered as two major paradigms of foreign trade and have been applied to a host of issues, such as gains from international trade, the conflict of interest between various groups in society concerning open markets and the impact of trade policies (Helpman et al, 2012). Until the 1980s, the trade theory that was based on the Ricardian and Heckscher-Ohlin models was the main framework for understanding international trade (Davis, 2010).

2.2.2 The Ricardian Model of Comparative Advantage

The Ricardian model of Comparative Advantage was chosen to help understand reasons countries trade with one another. According to Kowalski (2011), the model of comparative advantage has been suggested as one of the principal explanations of international trade. As introduced by David Ricardo in 1817, the comparative advantage is not the absolute differences in countries abilities to produce goods that are at the heart of international trade but rather the relative differences. The theory of comparative advantage is used to explain the commodity composition and direction of trade (Golub and Hsieh, 2000). According to Greenway and Milner (2008), it is regarded as a significant determinant of the observable commodity trade patterns that occur between nations. The law of comparative advantage says that a country can still profit from international trade even if what it produces can be produced elsewhere more efficiently. The basis of the Ricardian model is that comparative advantage rises from technological differences in production across countries (Sen, 2010). It is widely accepted that a country's specialization in production is due to comparative

2

(cost) advantage where a comparative advantage in a specific product results in production and the export of that product along with the production of non-traded goods for domestic consumption (Davis, 2010). David Ricardo's calculations demonstrated that it is comparative advantage that is necessary and sufficient to ensure that mutual trade gains occur across nations (Sen, 2010). Conversely, Leamer and Levinsohn (1996) concluded that the Ricardian model was too simple to be used for serious empirical analysis of trade and therefore, had limitations.

According to Leamer and Levinsohn (1996), the Ricardian model ignored factors of production besides labour and the suggestion that countries specialize in the production of tradable goods is unrealistic (Golub and Hsieh, 2000). It was suggested that while it is important to put resources into the most productive industries, no country wants to rely on one product only. This is because specialization in one product makes a country more vulnerable to the changes that occur in the global economy e.g. recessions, new trade laws and even treaties. In addition, a country can specialize relative to the influence of its terms of trade (Gonnelli, 1993). In the twentieth century, the Benthamite utilitarians stated that the Ricardian model of comparative advantage missed the role of demand as an explanation for the terms of trade (Sen, 2010).

2.2.3 The Heckscher-Ohlin Model of Comparative Advantage

The Heckscher – Ohlin Model of Comparative Advantage is another important model that is used in this study to explain why nations trade with one another. Following the Austrian school's notion of the balancing act between the forces of supply and demand is the Heckscher-Ohlin model (Sen, 2010). The Heckscher-Ohlin model of 1977 credits the differences in comparative advantage to the differences in factor supplies. According to the model, the immobile supplied endowment of natural resources forms a source of

comparative advantage that controls how the minerals flow from one nation to another. The assumptions of the Heckscher-Ohlin model seem to also apply to more than just minerals trade. This doctrine migrated from the interpretations of skill and technology and brought resource endowments of nations to light as the determining factor for mutually gainful trade.

The Heckscher-Ohlin theory of 1977 predicted that countries tend to export goods that make use of those factors that are locally abundant. Ohlin based his theory on observations relating to the abundance of mineral deposits to trade in minerals and metals (Davis, 2010). Moroney (1975) agreed that it seemed reasonable that comparative advantage in primary goods depended mainly on regional availability of the natural resources. There is, however, a debate on the usefulness of the Heckscher-Ohlin model in explaining the patterns of world production and trade. Nevertheless, it is agreed that the most obvious factors that explain a good deal of international trade are natural resources (land of different quality, climate conditions) and mineral deposits (Davis, 2010).

2.2.4 Institutional Frameworks of Mineral Development

The concept of the Institutional frameworks of mineral development is a fundamental element that forms part of the trade theory. Institutional Framework is defined as the system of formal laws, regulations, and procedures that shape socio-economic activity and behaviour. It is a known fact that developing countries have been known to export raw material and import manufactured goods for a long time. The countries that were abundant in labour and capital tended to export manufactures. Unfortunately, many developing mineral-rich countries have inadequate physical infrastructure and institutional frameworks that are important for facilitating the functioning of their economies in the midst of growth spillovers. Most African countries are lagging behind in developing human capital thereby

losing the most from potential gains from trade and investment linkages with emerging economies. (Bandara, 2012). The proper implementation of good institutional frameworks for mineral development is important mainly because mining can have a large number of negative effects on the surrounding communities and environment – a phenomenon known as the 'resource curse'. The influences of institutions within processes of mineral development is primarily concerned with how State level policies in particular have the ability to assure a positive development impact with regard to economic, environmental and socio-cultural values (Poulton et al, 2013).

The concept of resource curse states that the income per capita of a resource rich country is high but their economic growth is slower than countries that are not resource-rich (Davis, 2010). Frankel (2010) describes the resource curse as the phenomenon where countries with oil or other natural resource wealth have failed to grow more rapidly than those without. Meanwhile, the East Asian economies Japan, Korea, Taiwan, Singapore and Hong Kong have achieved western-level standards of living despite being rocky islands with no exportable natural resources (Frankel, 2010). Therefore, the resource curse may have an indirect effect on the economic growth of a country through institutional framework, where it can hamper growth in the presence of weak institutions such as poorly functional legal systems and badly defined property rights (WTO, 2010).

2.3 The International Political Economy of Trade

The international Political Economy[3] is an important component of international trade as the economic and political fate of nations can no longer be discussed in isolation (Falkner, 2011). Kegley (2008) stated that both the economic and political events in one country can

[3] International Political Economy (IPE) is defined as the study of the intersection of politics and economics within a country (Kegley, 2008).

have serious economic implications for other countries. This is because international trade has linked a number of countries over the years, and the commercial exchanges have been both political and economic with the global market becoming interlinked. The theories that underpin the international political economy of trade include mercantilism, liberalism and structuralism.

2.3.1 Mercantilism (1500-1780)

Mercantilism was the first theory of international political economy to emerge in the modern era with the concern on the dominance of the national interest in economic policy, the central role of the State in redirecting economic activity. Mercantalism advocates limiting imports to those absolutely necessary whilst exporting enough for profit. Mercantiles stress the politics of trade where nations fear becoming too dependent on other nations for certain goods and a natural desire to protect them (Falkner, 2011). The Mercantiles view trade as a zero-sum game in which a gain by one country results in a loss by another. According to the Mercantiles, the key objective of trade should be to promote a favourable balance of trade-where the value of goods that are exported exceeds the value of goods imported. (Greenaway and Milner, 1993).

According to Mercantiles, the involvement of government in international trade is important for the protection of the State and society's interests (Ravenhill, 2005). Mercantiles, however, have rejected the notion of comparative advantage due to their pessimistic take on human and government behaviour (Kegley, 2008). Also, this notion has proven to be very challenging since not every country can have a balance of trade surplus (Irwin, 2001). Nevertheless, Mercantilist's ideas however continue to provide an essential vantage point from which to view international political economy as it inspires current protectionist policies and approaches to growth and development of States (Falkner, 2011).

The Mercantilist view remains a popular resource for governments at times (Ravenhill, 2005).

2.3.2 Liberalism (1815-1873)

Liberalism advocates a market economy that provided individual enterprise. Liberalism emerged in the era of industrialization and challenged the notion of mercantilism (Kegley, 2008). According to the Liberal political economy, the role of the State is to support the free interplay of market forces without any hindrances (Falkner, 2011). In addition, individuals can be trusted by governments to control their own destiny as it is believed that the power of government can have detrimental effects on individual liberty and the functioning of the market. The Liberal approach is the fundamental basis for the belief in free trade. Liberalism supports David Ricardo's theory of comparative advantage as it provides a powerful rationale for free trade (Kegley, 2008). Although the doctrine of free trade is widely supported by many scholars and informs the contemporary international trade system, governments continue to pursue trade protectionism to isolate their economies (Falkner, 2011). Even though Liberalism never fully replaced mercantilism, liberalism and mercantilism continued to compete for influence well into the 20th century. (Kegley, 2008).

2.3.3 Structuralism (1940s)

Structuralism (1940s) is another important view that has shaped the trade and development policies in developing countries (Oatley, 2015). Structuralists emphasize how trade is used by industrialized nations to exploit developing nations. The Structuralist view is a 'centre-periphery' dichotomy that illustrates that the centre belongs to the mature industrialised economies that benefit from the small scale economies. Developing countries are said to be at the periphery, where they specialize in producing low productivity primary products. These structural differences ensure that the gains from trade are steered towards the centre

and the result therefore is a dependency status from the periphery to the centre (Greenaway and Milner, 1993). Structuralists conclude that it is through the pathways of trade that developing countries are exploited by industrialised nations (Balaam and Veseth, 2005). As a result, structuralism enabled governments to transform their protectionist trade policies which benefited their principal political supporters, into State-led development strategies (Oatley, 2015).

2.4 The Political Economy of Trade Policy

According to Milner (1999), the main instrument of trade policy since WWII has been tariffs and these have been reduced to insignificant levels particularly in industrialized countries. The Post-war period witnessed many less developed countries using trade barriers extensively. In the 1980s, a number of developing countries began to liberalize trade to adopt export-oriented policies. This section provides an overview of some of the factors that have shaped how policies have been created over the years, which is mainly based on politics.

2.4.1 The Pressure Group Model

According to Mansfield and Busch (1995), a number of factors that shape the individuals preferences about trade policy. One of the models is the 'pressure group politics'[4] model, which results from the desire of domestic groups to protect and liberalize trade, as such policies increase their incomes. The framework of this pressure group/interest group model emphasizes the incentives faced by capitalists to influence politicians to move policy in a direction that would favour them (Milner, 1999). Individuals and firms organize into common economic interest groups as the demanders of particular public policies such as

[4] Pressure group politics model explains the recourse to protection by governments as the fluctuations of the demands made by domestic groups.

import protection. The public officials on the other hand are the suppliers of these policies. Therefore, the nature of the policies that arise from these interactions depends on the effect of the policies on their economic interests (Baldwin, 1989).

2.4.2 The Median - Voter Model

The second model that explains the determinants of trade policy is the Median-Voter model, where the implicit assumption is that trade policy is being directly voted upon or that the government chooses a policy based on majority opinion on the issue (Milner, 1999). According to Mayer (1994), a country's trade policy depends on the relationship that exists between the country's aggregate endowment ratio and the median voter's factor endowments (Baldwin, 1989). The Median –Voter Model approach however lacks a realistic element since tariff policy is not commonly determined by majority voting (Gautier, 2001).

2.5 South Africa - China Mineral Commodity Trade Relations

As previously mentioned, the Ricardian and Heckscher-Ohlin models of comparative advantage and the theories of the politics of international trade are important in this study as they help understand the global system (trade gains, the conflict of interest of different groups, policies) and its functions. Authors such as Manji and Marks (2007), Alden (2008), Large and Soares de Oliveira (2008), van Dijk (2009), Yong (2013), Edwards and Lawrence (2012) and Cashin et al (2016) have studied the impact of the expansion of China's engagement with Africa and the effects on Africa's broader economic development policies (Yong, 2013).

2.5.1 Africa's Engagement with China

Naidu and Mbhazima (2008) stated that it is of critical importance to understand the future of China's relations with countries in Africa. China has become a significant trading partner to a number of mineral-rich developing countries in Africa. These include countries such as the Democratic Republic of China, Gambia, Liberia and South Africa. The trade relations are primarily a result of Africa's dependence on its mineral resources for economic growth (Zeilstra, 2015). China's engagements with Africa cannot be ignored for the obvious reason that China has given Africa leverage in its relations with the North. In addition to this, China has played an important role as a catalyst in demand and supply for the global economy, which has enabled developing countries to undertake necessary structural reforms and transformations. However, China's relations with Africa is said to be complex.Naidu and Mbhazima (2008) suggested that the deepening of China's engagement with countries in Africa needs to be understood in the context of Africa's need to proclaim some authority and sustainable development going forward. McCormick and Morris (2007), Edwards and Lawrence (2012) and Alden and Wu (2016) are some of the authors that have conducted studies on the trade relations between South Africa and China. According to Finger (2006), South Africa depends on the real increase in demand from China as well as the strengthening of prices of primary commodities. Table 2.2 highlights some of the developments of mineral commodity trade in South Africa from the 1970s – 2010.

Table 2.2: Developments of the Mineral Commodity Trade Patterns in South Africa.

Period	Historical event related to Commodity Exports
1970-1980	• In South Africa, import substitution policies blocked imports and discouraged exports.
1981-2000	• Limited interest in commodity markets because of depressed prices. • In the 1990s, South Africa introduced a multi-faceted round of tariff and trade policy reform and this led to a growth in import penetration. • The exports increased in South Africa and was associated with liberalization leading up to the opening up of the economy**.**
2001 – 2007	• For South Africa, the volume of imports and exports increased, however, gold exports in particular declined in volume. Gold exports dropped by 30 % over the decade. • The top mineral and metal commodities traded over this period were iron and steel, precious stones, copper, aluminium and coal. • South Africa became a founding member of WTO in 2005.
2008 – 2010	• The global crisis of 2008 led to sharp declines in demand and prices for commodities, including a reduction in global trade and investment. • South Africa's economic performance deteriorated with significant losses in production and employment in the mining industry. • In 2009, the government of South Africa adopted the "Framework for South Africa's Response to the Global Economic Crisis" with the aim to mitigate and manage the impact of the crisis.

Source: Adapted from Edwards and Lawrence (2008), (Radetzki, 2008), Davis (2010) and DTI (2010)

2.5.2 South Africa-China Relations: Historical Context

Since the liberalisation of trade and the dismantling of international sanctions, South Africa has restructured its economy substantially. It has become more open, more productive and more outward oriented (Flatters and Stern, 2007). South Africa has opened up its economy more rapidly since it became a democracy and it has led to the export growth that the country has been experiencing over the years (Gonzalez-Nunez, 2008). The bilateral trade relations of South Africa and China date back to 1992 following the opening of China's Ministry of Foreign Trade and Economic Cooperation in South Africa (Grimm et al, 2013). According to Xiong (2012), the relations between South Africa and China were initially characterised by the agreement with the world's sentiment against the Apartheid regime. The end of Apartheid led to the end of the international diplomatic isolation of South Africa. The economic sanctions that had been placed against the Apartheid regime were finally lifted, thereby allowing South Africa to reinvent its foreign relations. South Africa thus realigned its foreign relations to new partners and opportunities as well as changed diplomatic relations from Taiwan to China (Grimm et al, 2013).

According to Grimm et al (2013), economic diplomacy is quite significant as it maximises the national gain in all fields of activity including trade. South Africa's realignment to new partners was influenced by China rising, in the global system, which meant that access to the mainland for South African goods would prove beneficial. South Africa's economic diplomacy led to its decision to support Beijing's One-China policy. Moreover, South Africa also made changes to its foreign policy in order to survive in an increasingly competitive and complex global economy (Grimm et al, 2013). In 1998, the heads of the two countries then President Nelson Mandela and President Jiang Zemin signed the 'Pretoria Declaration on the Partnership between the People's Republic of China and the

Republic of South Africa (Xiong, 2012). A series of State visits occurred in the 1990s between the leaders of China and South Africa marking the highest form of diplomatic contact with a cause to deepen the bilateral relations. Since 1998, the relations between South Africa and China have grown and emerged to play a huge role in China's relations with the rest of the African continent (Xiong, 2012). According to Grimm et al (2013), the bilateral economic relations between South Africa and China have been challenging. The authors conducted a study on how economic relations evolve in a political environment that is skewed to favour one partner over another. Grimm et al (2013) suggested that South Africa should use more coherent and comprehensive approaches towards its political relations with nations such as China.

2.5.3 South Africa-China Relations: A Strategic Economic Partnership

The relationship between South Africa and the PRC is a strong diplomatic relationship, which is considered as a comprehensive strategic partnership. A partnership is characterized as a working relationship that consists of a shared sense of purpose and mutual respect by those in partnership (Buckup, 2012). The relationship is often viewed and analysed mostly from China's perspective and rarely from that of South Africa, which is just as important to understand so as to know why South Africa pursues China (Sithole, 2013). The political and economic ties between the two nations are said to be agreements driven by political elite interests (Alden and Wu, 2016). South Africa is important to China because of two major reasons. Firstly, South Africa's diplomatic and political support has provided China with a base in the international community. This is because South Africa is regarded as a continental leader with substantial impact on Africa's agenda. Therefore, China's approach to South Africa is sometimes seen as China's Africa strategy in the broader context (Grimm et al., 2013). Secondly, South Africa is regarded as a major

economic power in Africa with natural resources and industrial capacity that serves as pull factors for China (Grimm et al., 2013). South Africa is the world's largest producer of manganese and platinum and one of the top producers of diamond, gold, iron ore, chrome and coal (CCS, 2016).

According to Sithole (2015), China's flourishing relationship with African countries are attributed to its need for energy and raw materials from these countries to fuel its economic growth. South Africa's endowment of natural resources such as iron ore, coal and platinum is key to China's economic output and growth. The diplomatic relationship between South Africa and China has fostered the current trade flow and investment between the two countries (Grimm et al., 2013). South Africa makes up almost 20 percent of China's trade with the entire African continent (Alden and Wu, 2016). Historically, South Africa's trade had traditionally been confined to a few countries namely: Japan, South Korea and Taiwan (April and Shelton, 2014).

Today, the bilateral trade between South Africa and China has expanded and this is a reflection of the increased mutual interdependence (April and Shelton, 2014). In 2009, China surpassed the United States and Europe in becoming the largest trading partner of South Africa (see Table 2.1) (Xiong, 2012). This was after the total trade between South Africa and China amounted to about US$ 14.1 billion. Traditionally, South Africa has mainly exported mining products to China such as iron, steel, heavy chemicals and nonferrous metals (April and Shelton, 2014). It is estimated that 40 percent to 60 percent of the minerals produced globally ends up in China every year for infrastructure and manufacturing.

Starting with the turn of the millennium, the mining sector and demand for commodities started to grow significantly due to the advancement of the Chinese economy (Lichtenstein,

2013). According to the US Geological Survey (2004), China's development was influenced primarily by infrastructure projects and the demand for capital and consumer goods. In 2004, China's mineral imports rose rapidly and hence, the mineral prices also rose worldwide. Foreign investment increased at the time as well and it was projected that fluctuations in global commodity prices could be larger in the future, including environmental residuals from production.

Table 2.3: The top 5 import and export partners of SA. Source: Adapted from WITS (2017).

Top 5 import and export partners of South Africa					
Region	Trade (US$ Mil)	Partner Share (%)	Exporter	Trade (US$ Mil)	Product Share (%)
China	6.812	9.19	China	13.537	18.11
US	5.474	7.39	Germany	8.817	11.80
Germany	5.260	7.10	US	4.978	6.66
Unspecified	4.149	5.60	India	3.104	4.15
Botswana	3.712	5.01	Saudi Arabia	2.836	3.79

2.5.4 South Africa-China relations: Challenges and Opportunities

The Peoples Republic of China has experienced huge economic growth over the years and as a result has become a significant contributor to global economic growth. Gonzalez-Nunez (2008) stated that the growth of China's economy and the increase in demand for natural resources has benefited South Africa greatly in its export market over the years.. According to Edwards and Lawrence (2012), the prices of commodities strongly increased from the years 2000 - 2007 because of an increase in China's demand for metals, oil and other primary commodities (see Figure 2.1). Coal prices and iron ore prices in particular

are said to have increased the most in the metal and minerals industry. Between 2000 and 2012, the prices of iron ore increased by about 1000 percent and that of coal by 300 percent (Lichtenstein, 2013). This increase has contributed positively to South Africa's mining sector as both commodities are major exports for the country.

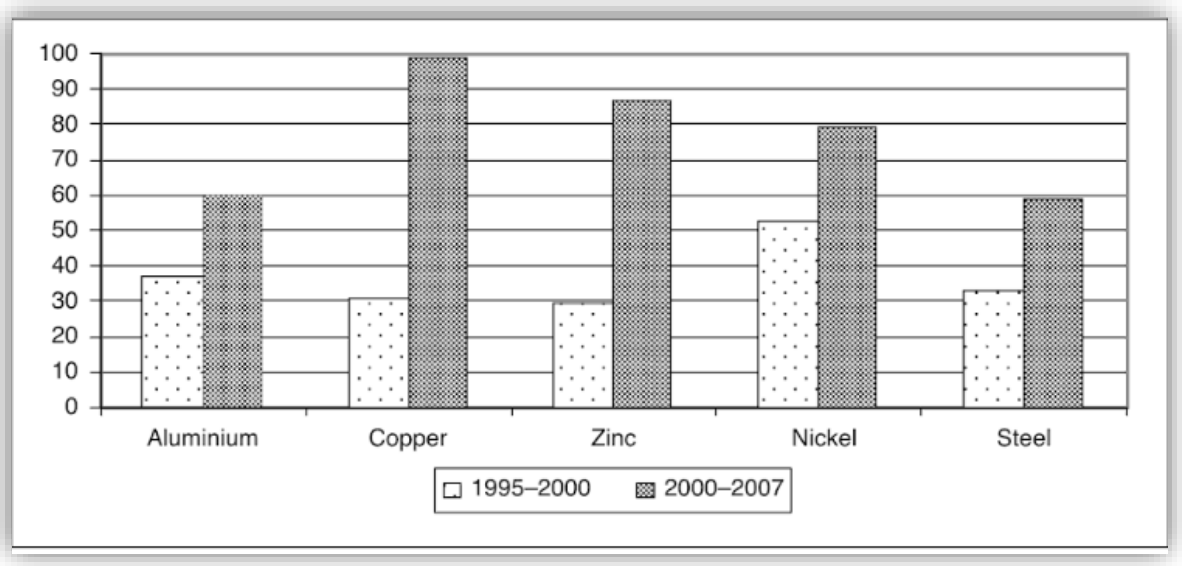

Fig 2.1: Percent increase in global demand for metals accounted for by China (Dent, 2010).

China's developing country status, its identification as a member of the Global South and the G77 in the UN are elements that carry significance for South Africa. According to the South African government perspective, China's investments in South Africa are expected to promote South Africa's industrial policy and development strategy. It is suggested that going forward, the composition of the Chinese GDP will most likely lead to some great opportunities for South Africa in the future contributing significantly to South Africa's agenda for renewal and jobs creation (Alves and Sidiropoulos, 2010). On the other hand, according to Yong (2012), a high percentage of manufactures of produced goods in South Africa are currently being forced into bankruptcy because of imports from China. Chinese mass products have driven many local manufacturers out of the market with cheap imports eliminating many jobs. Trade union movements have accused China of being responsible

for the loss of jobs in certain economic sectors in South Africa such as the manufacturing and mining sectors (Grimm et al, 2013). In addition, as South Africa exports raw materials and imports manufactured goods, tariff barriers prevent the promising export potential of several other sectors of the economy (Grimm et al, 2013).

Alves and Sidiropoulos (2010) stated that China's global competitiveness makes it difficult for South Africa to compete in the global market. The is due to the fact that China's trade relations with South Africa presents a threat to the survival of its labour –intensive industry. In 2012, then President Jacob Zuma showed concern with regards to the unbalanced nature of South Africa's trade ties with China and stated that it was unsustainable. In the quest to promote a more symmetrical relationship and increase economic security, South Africa has formulated structured policies and entered into investment agreements that will ensure that specific trading patterns in favour of South Africa are achieved. This will allow South Africa to change its pattern of trade and export semi-finished and manufactured goods instead of raw materials only to various countries of the world (Grimm et al, 2013).

2.6 China's Recent Economic Slowdown

The developments of the recent economic slowdown witnessed in China are due to the Chinese government's political decision to undergo a transition (Garg and Kozhikade, 2012). For many years, China experienced significant growth rates as a result of three main factors: the investment in infrastructure, low wages and rapid productivity growth. China had been experiencing an average growth rate of 10 percent annually since 1979 but has been experiencing a steady decline in growth rate since 2011. The growth rate of the Chinese economy dropped from 10.6 percent in 2010 to 6.9 percent in 2015 (Coolgeography, 2018) (see Figure 2.1). The increase in domestic wages has led to the erosion of China's cost advantages as a low-value added manufacturer. In addition, the

wealth of China is concentrated among the leaders of State-owned enterprises owned by the central government and by local governments (Garg and Kozhikode, 2012). For many years, exports and State-funded fixed asset investments in infrastructure and real estate have been China's primary focus as a mechanism to grow its economy. However, China started recently to look at shifting toward a new growth model that is more dependent on domestic consumption and technology innovation. The aim is that the growth model should depend on domestic consumption and technology innovation instead of exports and fixed asset investments for the provision of new revenue streams for China's economy (Garg and Kozhikade, 2012). In addition, China has invested in Research and Development to upgrade its value chains, improve technology and boost technology to assist in its shift from labour –intensive manufacturing to growth driven more by innovation (WEF, 2016).

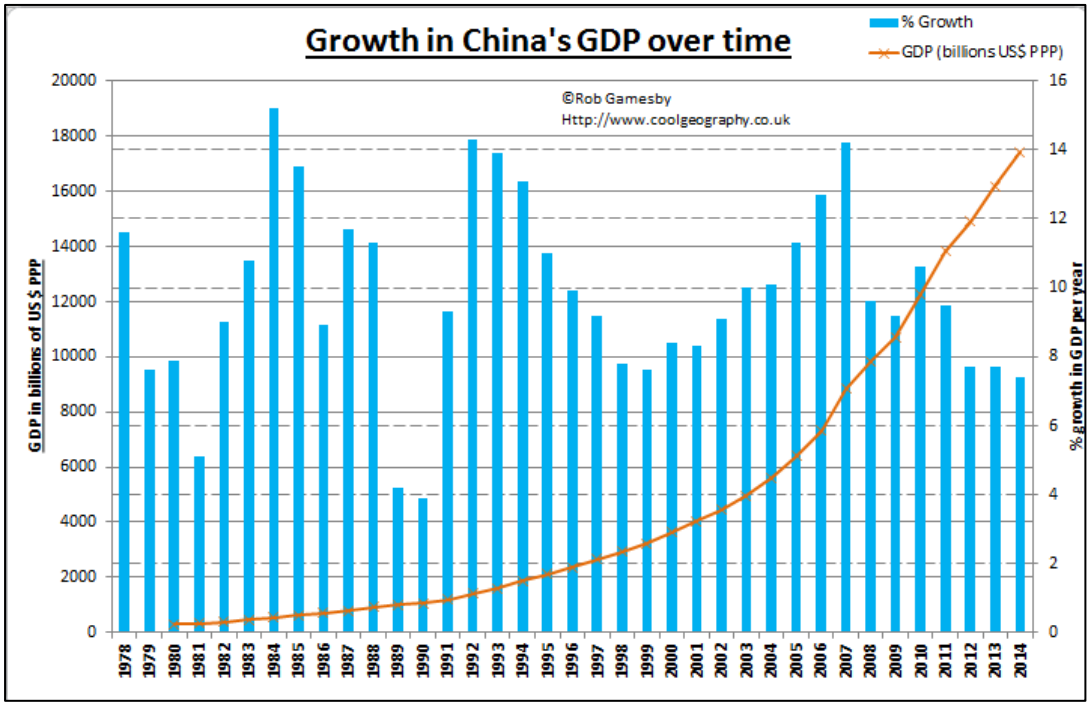

Figure 2.2: China's GDP growth rate over time. Source: Coolgeography.co.uk (n.d.)

There are a number of factors that have contributed to the slowdown in China's economic growth. Firstly, the growth of China's economy to double digit level has proven to be

unsustainable. CCS (2016) stated that growth to double digit levels is unsustainable when a country attains a high level of Gross Domestic Product (e.g. see Figure 2.2 at 14.2 percent in 2007). Therefore, for China which had a GDP of approximately US$10 trillion and a GDP per capita of approximately US$ 7,000 as of 2016, deceleration is expected to occur as it transitions into a developed country. Another factor is the weak recovery in global growth in the aftermath of the 2007 - 2009 recession, where international trade growth slowed down with global export growth falling to 6.1 percent in 2014 and -1.8 percent in 2015 (CCS, 2016). Since then, the global demand for Chinese goods has been very weak that little was expected from global exports in 2016. This factor has influenced Beijing's decision to focus on domestic demand as a driver for future growth. Thirdly, the structural changes in the labour market and Beijing's attempt to control China's excessive investment rate, which was becoming unsustainable has contributed to the slowdown (CCS, 2016). It was presumed that it could be a positive development for China if the country could shift away from the 'unsustainable investments' model which is more focused on industrial production and fixed asset investments (Garg and Kozhikade, 2012).

2.6.1 The Impact of China's Economic Slowdown: What it means for mining in SA

"No country can exist as an island by itself. Any economic programme that is designed by a country to strengthen its position in the global world ultimately creates problems for the rest of the world " as stated by Pearce (1970). According to Zeilstra (2015), trade is a channel through which a sharp economic decline experienced by a major global player like China could affect many countries. The countries affected and moat vulnerable to fluctuations in export revenues are those highly dependent on exports. Any negative impact on trade in turn affects the overall economic growth of the exporting country. Recently,

China’s economy has experienced a downturn and South Africa’s mining industry has been affected as a result.

Cashin et al (2016) stated that any slowdown or changes in the composition of China’s real GDP growth can have serious implications on South Africa’s economy as an emerging market. The recent economic slowdown in China has contributed to the present global excess of supply capacity of mineral commodities relative to demand. This has in turn affected commodity prices and has exerted pressure on the currencies in the world. As China’s economy transits, prices are dragged down due to the decrease in its demand for commodities since China consumes 20 percent of non-renewable resources and 40 percent of base metals produced globally. This has serious implications for the global prices of mineral commodities (CCS, 2016). With Beijing’s attempt to move towards a consumer-based economic model and the slowing down of China’s economy, there has been less demand for South Africa’s minerals. South Africa is an example of a country with a high dependence on exports for its economic growth. South Africa depends on the strengthening of products and prices for multiple primary commodities that it exports to China. South Africa’s mining industry is a global player in the production of minerals and contributed about 5 percent in real terms to the GDP of the country as of 2016 (CCS, 2016). South Africa’s mining industry provides more than 50 percent of foreign exchange revenue, 20 percent of all investment and accounts for 13 percent of corporate tax. Ninety percent of the country’s exports consist of minerals and related products. Approximately 9.7 percent of total mineral exports go the PRC (Trading Economics, 2017).Therefore; the foreign exchange value to South Africa is sensitive to volatility in mineral commodity prices. For example in the years 2000 - 2007, there was a strong commodity price increase due to the increase in China’s demand for metals, oil and other primary commodities (Edwards and Lawrence, 2012). On the contrary, in 2013, the economic slowdown resulted in the decline

of South Africa's commodity prices where iron ore, platinum and copper fell by 41 percent, 19 percent and 18 percent respectively (Igbinoba, 2016). Therefore, the openness of South Africa's economy, its dependency on exporting of metals and the share of its exports to China in relation to its GDP makes it vulnerable to China's econmic dynamics. Any decline in commodity prices and depreciation of the Rand creates uncertainty and volatility in the economy of South Africa. In addition, SA's unfavourable trade balance with China of approximately R384.1billion raises the current account deficit and ultimately increases the national debt.

This in turn negatively affects investors' confidence and leads to capital flight. This ends up creating a domino effect from the mining industry to the overall economy and a number of jobs are put at risk in the process. South Africa is therefore obliged to re-examine its trade strategies due to the extent to which its reliance on mineral exports to China has been affected by China's recent economic slowdown (CCS, 2016). Against this backdrop, Jacks (2013), Ocampo and Erten (2012) and Arezki et al (2013) mentioned that the metal exporting countries in Africa are likely to be impacted by the lower prices and lower demand for commodities from China in the future with increased price volatility . Having said that, new trade policy strategies are necessary to ensure that South Africa stands at a better position to withstand any future vulnerabilities as China and South Africa's trade relations further strengthens.

2.7 South Africa's Trade Policy

South Africa's Trade Policy stems from the industrial policy that aims to contribute to meeting the objectives of upgrading and diversifying the economic base of the country. It supports industrial development and upgrading, increased value-added products and employment growth (DTI, 2010). According to Greenway and Milner (2008), policy

makers in mineral-rich developing countries should consider that their countries possess comparative advantage in mineral resources and therefore, should not ignore this fact when formulating the broad trade strategy and trade policy environment. Michaels (2015) stated that the most critical influence on the aggregate growth and composition of trade for South Africa is its trade policy.

2.7.1 Trade Policy and Tariff Reform

When South Africa became a democratic country, it normalised its trade environment by removing the dual exchange rate and the opening up of its capital account (Gonzalez-Nunez, 2008). In the mid-1990s, it changed its trade policy stance from import-substituting industrialisation to export-orientation (Gonzalez-Nunez, 2008). During this time, South Africa began an ambitious set of tariff and trade policy reforms which included multilateral liberalization through the World Trade Organization. This is the elimination of quotas, GEIS and most import surges and new bilateral agreements with the EU and SADC. According to Edwards and Lawrence (2007), a strong relationship exists between tariffs and export performance. It is assumed that protection reduces imports and exports whilst liberalization increases them (Flatters and Stern, 2007). Over the years, South Africa's tariff reform process has been characterized by the following facets: nominal tariffs, the reduction of the number of tariff bands and categories, the removal of surcharges and quantitative controls and phased unilateral reduction of tariffs (Gonzalez-Nunez, 2008). In mid-2007, South Africa's trade policy was reviewed since it was seen as important to evaluate the lessons of the trade reform process undertaken by South Africa since 1994. In addition, that review process helped to better define and clarify the contributions that trade policy makes to the South African government's broad economic development strategy (DTI, 2010).

South Africa's National Industrial Policy Framework (NIPF), which was adopted in 2007 in support of the development strategy, states, "Our fundamental approach is that tariff policy should be decided primarily on a sector by sector basis, dictated by the needs and imperatives of sector strategies". Therefore, the NIPF seeks to steer the economy of South Africa from the over reliance on traditional commodities and non-tradable services to a more diversified economy that encourages value –added, labour absorbing industrial production and furthermore creates employment. In November (2009), 'A South African Trade Policy and Strategy Framework: Discussion Document' which is alsSoutho called the Trade Policy Framework followed earlier government efforts in 2007. South Africa's trade policy and strategy has been reviewed since 1994 under the guidance of the Deputy Minister and trade policy experts. The Trade Policy Review Group were tasked with recommending an approach on policy and strategy and guiding the process of developing recommendations on trade policy (DTI, 2009).

South Africa's Trade Policy and Strategy Framework outline how the trade policy and strategy in South Africa can make the necessary contributions to meet these objectives. The framework has recommended a strategic approach to tariff setting in the future as an important part of improving South Africa's trade performance in the future. Therefore, it is suggested that the role that trade policy can play should not be exaggerated, as there are other factors such as commodity prices, investment rates and global demand that can shape the growth model of South Africa's economy (DTI, 2010).

2.7.2 Trade Policy and managing future uncertainties

According to the DTI (2010), trade policy is not the sole determinant of trade performance of both commodity and non-commodity products, but it is an important element to South Africa's growth path and industrial policy and hence requires thorough attention. WEO (2016) on the other hand stated that policy priorities are varied in developing economies given the diversity in conditions. Overall, there is indeed a need for policymakers to manage vulnerabilities and rebuild resilience against potential shocks (Greenway and Milner, 2008). The growth in trade volumes has reduced and commodity prices are low, meaning countries have had to implement tighter monetary and fiscal policies (DTI, 2010). Trade liberalisation has occurred in the country since 1994 and exports have grown significantly (NCOP, 2014). The increasing growth in exports has been seen as a key objective in achieving growth but the question is how so? The trade policy of South Africa has undergone many changes during thelast decades (Gonzalez-Nunez, 2008).

Gonzalez-Nunez (2008) noted that there has been a debate over the years concerning what direction the trade policy of South Africa should take. In light of this, the first argument has been around free trade, which is believed to promote greater competition, more efficient use of resources and increase in exports of the goods and services that a country is believed to have comparative advantage. The second argument has been around a more active role for the State and the need for tariff protection to allow certain industries to grow their ability to export and compete internationally. A number of issues such as the volatility in exchange rate, widening trade deficit and political crisis have affected South Africa's ability to achieve its growth objective over the years . There is a correlation between South Africa's exchange rate and level of exports. The exchange rate is believed to be a significant determinant of export competitiveness (Gonzalez-Nunez, 2008).

According to Lawrence and Volker (2001), the measures of export competiveness include the unit labour costs and export diversification. The authors suggested that competitiveness hinged not only on trade policy and changes in international prices but also on government supply side measures and labour market institutions. Hence, as suggested by Edwards and Lawrence (2012), that South Africa needs to be positioned for a continuation of the commodity cycle. Notwithstanding, South Africa should not concentrate its export basket on products that have a declining world market price/demand. In addition, DTI (2010) suggested that South Africa would be better positioned to expand into labour intensive resources within which it already has a comparative advantage. South Africa's trade policy should be developed as part of a broader set of policies that aim to establish a new growth path for the economy.

2.7.3 South Africa's trade performance

It was in the 1960's that SA managed to obtain about six percent real economic growth. In the 1970's, South Africa experienced commodity booms in which led to the improvement of the terms of trade by an average of 4.9 percent. The Rand appreciated in real terms during the second boom and due to the soaring of gold prices. The profitability of commodity production depressed and commodities exports flattened. The 1980's saw an economic stagnation with annual growth of approximately 1.5 percent showing the degree to which SA depended on trade. During the period 1991 – 2001, the volumes of exports and imports of goods and services grew by 73 and 70 percent respectively. There was rapid growth in exports from 1992 – 1998 that led to an improvement of profitability. The exports of commodities were up by 50 percent and non-commodity exports 200 percent. From 200 – 2005, import volumes continued to grow rapidly and export volumes were rather sluggish. It is suggested that SA trade policy has exerted a major influence on the composition and aggregate growth of trade. Both exports and imports were impeded in the apartheid period

and the economy depended on global commodity price trends. SA then later developed comparative advantage in capital- intensive commodities because of its abundant natural resources. This comparative advantage was also developed because the pattern of protection was detrimental to exports of non-commodity manufactured goods (Edwards and Lawrence, 2006).

2.7.4 South Africa's Development Objectives and China

Oyejide et al (2009) stated that there is concern in Africa's policy community about the impact of the rapidly rising China's relations with African countries. It is suggested that this relationship will alter the environment in which African countries make trade policy decisions. According to Naidu and Mbhazima (2008), it is important that African countries adopt a more nuanced understanding regarding the various impacts that China can potentially have on the developments of their economies. According to Oyejide et al (2009), the existing China-Africa trade patterns do not correspond with the longer term objectives of many countries in Africa. In addition, it is stated that China's influence has negatively affected the economic development policies of some African countries and that there is a growing concern on the growth of these trade relations.

In this case, South Africa's mining industry as well as that of other African mining industries will face serious challenges that require that domestic approaches be adopted. Several economists recognise that China's economy is still growing and commodity prices are still above historical levels, which has a potential of facilitating the trading environment of both South Africa and China the more. Lawrence (2012) stated that, the weakening of the demand of commodities is also likely to occur in the future as China pursues a more consumption – intensive growth path. For China, the increase is likely to reduce demand for mining products. It is suggested that South Africa's trade policy should adopt a different

approach to position the country's economy to capitalize on the features of the future trading environment (Edwards and Lawrence, 2012). Therefore, there is a need for a fiscal and monetary policy that will be more countercyclical for the purpose of moderating the effects from negative spillovers from China's economic slowdown. The policy should be well constructed to handle both the current positive spillovers as well as the negative, as changes occur in the trading environment between the two countries. Therefore, it is suggested that further work should be done focusing on the impact of spillovers on South Africa's monetary policy (Ruch, 2013).

2.8 Conclusion

It is quite evident that trade is a concept that cannot be looked at in isolation. There are a number of factors that shape the dynamics of international trade, and all of these factors should be considered to understand the behaviour of economies in the global environment. The bilateral trade relations cannot be examined without taking into considerations the effects of the international political economy. The economic decline of China has serious implications on South Africa's economy as an emerging market commodity exporter, and therefore the impacts should be assessed to determine how this affects policy makers. The next chapter of this study provides an overview of the methodology used in this study.

3 RESEARCH METHODOLOGY

3.1 Introduction

South Africa's mining industry has been affected by the negative consequences of China's economic decline between 2013 and 2015. In this research, it is assumed that trade is the channel through which the slowdown in China's economy has affected the mining industry and the overall economy of South Africa. The previous chapter dealt with the different factors that shape the global trading environment. In this chapter, an overview of the methodology of this study is outlined. This includes the research questions, the types of research methods that were used, and why the methods were specifically chosen for this research project. It also describes how the data that was collected was analysed and the ethical considerations applied in the process.

The aim of the methods chosen for this study was to help understand:

- The factors that have driven the commodity trade relations of South Africa and China over the years;
- The impact of China's economic slowdown on South Africa's mining industry, and overall economy of South Africa.
- The current state of South Africa's trade policy.

3.2 Overview of Research questions and methods

As previously mentioned in Chapter 1, the aim of the research is to determine how and to what extent China's recent economic slowdown has affected South Africa's mining industry. The aim is to also determine whether South Africa consists of a well-constructed trade policy that positions it to be able to handle the economic dynamics of China's continued appetite for South Africa's mineral resources. The following main questions are addressed to achieve the objectives of the research project.

- What are the recent developments in the commodity trade relation of South Africa and China?
- What are the factors that are likely to drive the trade pattern and performance going forward?
- How has the slowdown in China's GDP growth affected the mining industry of South Africa?
- What role has South Africa's trade policy strategy played thus far?
- Is South Africa well positioned for possible unfavourable trading conditions in the future?

Two distinct methods are chosen to satisfy the objectives of this research project. The methods are the qualitative method as well as secondary data collation and analysis method. Although both methods have different approaches, they serve the same purpose, which is to help understand the nature of the problem.

3.2.1 Qualitative Research

According to MacDonald and Headlam (2009), the qualitative research method is used to obtain information that seeks to answer a question. It is concerned with the quality of the information and generates ideas or hypothesis. Denzin and Lincoln (2000) described qualitative research as a method that systematically uses a predefined set of procedures to answer the question. In addition, it collects evidence and produces findings that were not determined in advance. In most cases, it produces findings that are applicable beyond the scope of the study. As stated by Khotari (2004) and MacDonald and Headlam (2009), qualitative research is concerned with a qualitative phenomenon namely that relating to or involving quality or kind. Creswell (2003) stated that it provides insights into the settings of a problem. With a qualitative approach, an inquirer usually makes knowledge claims

based on constructive perspectives or participatory perspectives. In the qualitative research method used for this study, existing literature data was used. The information was collected from a number of different trade sources. The data used was mainly concerned with the global interactions of South Africa and China and the impact of China's recent economic slowdown on the mining industry of South Africa. The data collected through the qualitative method were compared and analysed. The aim of the qualitative method was to provide an understanding of the underlying reasons and motivations for the patterns and trends observed from the relationship between South Africa and China. It is important to note that the goal was not to quantify data or measure the incidence of various views and opinions in a chosen sample like in a quantitative method, but to provide insights into the setting of the problem. Figure 3.1 provides an outline of some of the key features of a qualitative method.

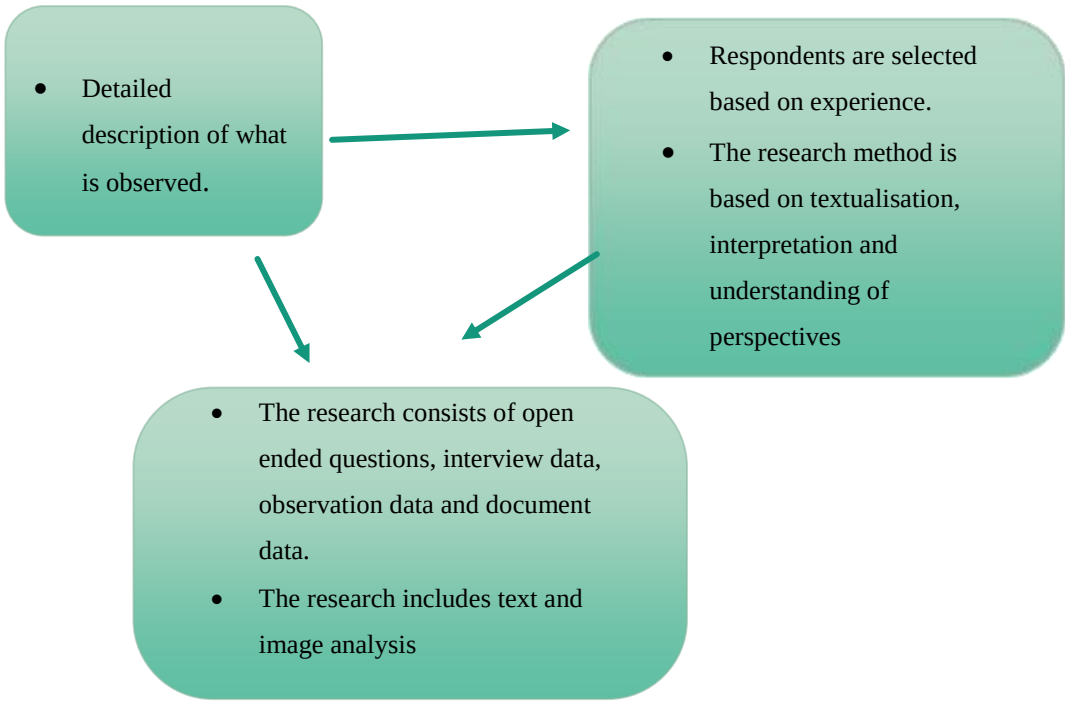

Figure 3.1: The key features of a qualitative method. Source: Adapted from MacDonald and Headlam (2009) and Creswell (2003).

3.2.2 Secondary Data Collation

Secondary data collation was used in this study to review existing information in the quantitative context which involved the manipulation of statistical data. According to MacDonald and Headlam (2009), secondary data collation can be useful in that it can provide a starting point for an evaluation or analysis to gain some background knowledge. In addition, it is useful for contributing to the analysis and commentary throughout the research report. Secondary data collation differs from quantitative research in that the data is not collected directly and the data collection process cannot be controlled.

The quantitative data acquired was the mineral export data of South Africa's mineral commodity trade with China over the last 15 years. The mineral export of the 2013 - 2015 in particular was focused on so as to access the impact of the slowdown of China on the mining industry of South Africa. Annual reviews from Kumba Iron Ore were used to construct a case study to further strengthen this study. The secondary data was collated into key categories through the use of charts, graphs and tables. Data on the role of the trade policy of South Africa and its influence on the performance of the mining industry and overall economic performance was collected as well.

The combination of the literature and statistical data provided the background knowledge of the characteristics of the mineral commodity trade relationship between South Africa and its trading partner China. The study attempted to avoid the use of large data sets that would require specialist skill to manage. Hence, it used information that seemed adequate to allow for contribution to the analysis and commentary throughout the research. The information gathered from the secondary data collation method was used to produce a number of outputs that also included graphs and tables. According to McDonald and Headlam (2009), such information should show how changes have occurred over time in a particular area, in this case, how changes in mineral commodity export relations between

South Africa and China have occurred. Therefore, the secondary data collation method provides robust and accurate data to enable comparison to the differing views and observations across time. Figure 3.2 gives an outline of some of the key features of a secondary data collation and analysis method. A breakdown of the different sources of secondary data that were used in this study is given below in Table 3.1.

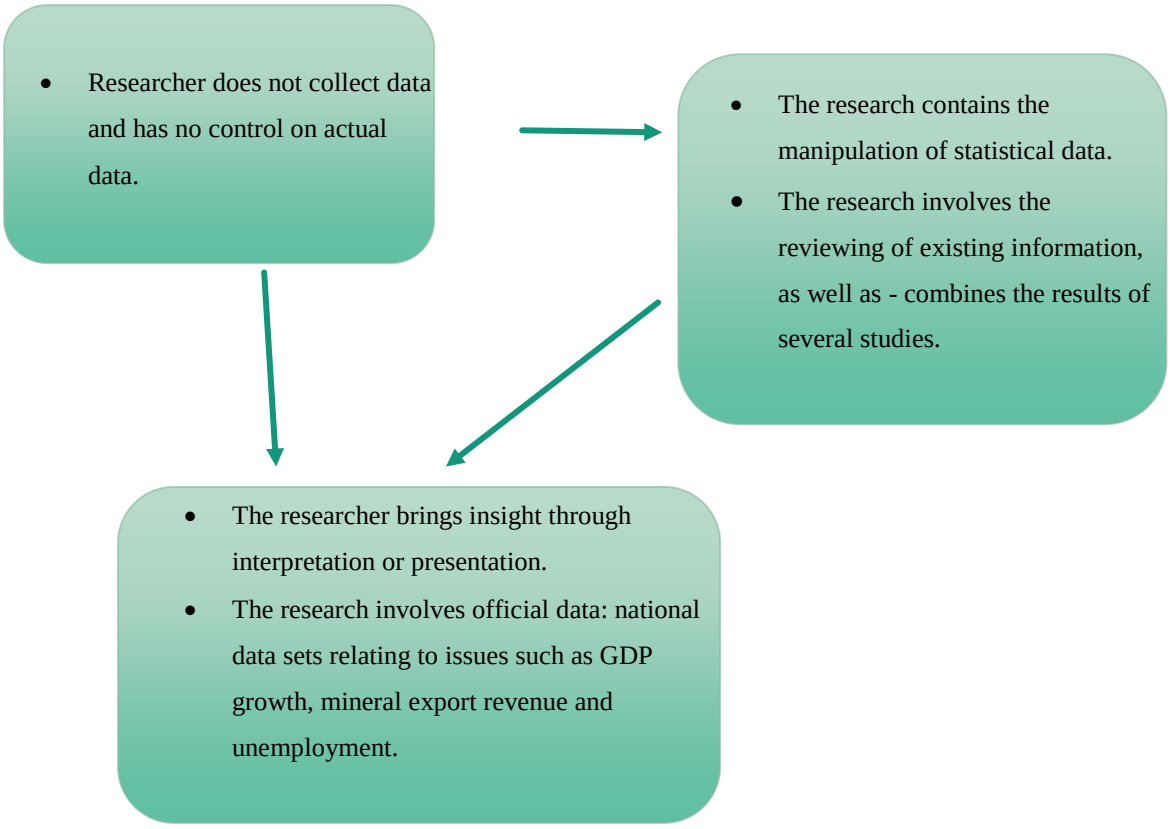

Figure 3.2: The key features of a secondary data collation and analysis method. Source: Adapted from MacDonald and Headlam (2009) and Creswell (2003).

Table 3.1: The sources of the collated secondary data.

Data Sources	Organizations/Government Departments
Technical Reports / Journals and Organizations (work done on specific research projects for the provision of research results to institutions, governments and other interested researchers.	Mine Annual Reports e.g. Kumba Iron Ore World Trade Organization (WTO) World Bank OECD World Economic Forum World Integrated Trade Solution
Scholarly Journals (These consist of a collection of reports that contain original research and experimentation)	Centre of Chinese Studies Researcher The Southern African Institute of Mining and Metallurgy (SAIMM) Other
Reference Books (These are books with secondary source materials with specified facts and summaries of a topic).	Google Scholar Wits Library Guides

3.3 Research Design

The research design includes two main methods: qualitative and secondary data collation and analysis methods. This research design was specifically chosen for this study as it considers how the research methods ultimately affect the results and conclusion of the findings. Moreover, the chosen research methods were used to obtain reliable observations that can help understand the research problem (see Table 3.2).

Table 3.2: A descriptive outline of the research design used in this study.

Structure of research study	Description
Aims	The aim of the research is to determine how and to what extent China's economic slowdown has affected the mining industry of South Africa and the overall economy.
Objectives	Evaluate the trade relationship between South Africa and China, as well as the impact of China's decline in economic growth and role of South Africa's trade policy.
Background	Trade relations between South Africa and China and Trade Policy are important for shaping South Africa's economic growth patterns and trends.
Methods	Qualitative method executed through the use of: Secondary data collation and analysis executed through literature and statistical data analysis.
Resources	Research methods, interpretative and analysis skills
Time Scale	(2) Years

Source: Adapted from Patton and Cochran (2002).

3.4 Strategies for analysis and interpretation of data

According to Vosloo (2014), data analysis is described as a process of bringing order, structure and meaning to the collected data. According to Richmond (2006), different strategies provide analysts with an organized approach to working with data, thereby enabling the author to follow a logical sequence. In this research, the strategies used to analyse the data were thematic analysis and secondary data analysis.

3.4.1 Thematic analysis

Richmond (2006) stated that thematic analysis involves looking at the data collected at different periods of time with the purpose of identifying and interpreting change. Patton and Cochran (2002) stated that a thematic analysis looks across all the data and identifying the common issues that recur. It identifies the main themes that summarize the information that has been collected. Alhojailan (2012) stated that thematic analysis illustrates the data in great detail and is the most appropriate for any study that seeks to discover interpretation. Also, it allows the researcher to associate an analysis of the frequency of a theme with the whole content. The patterns and relationships that are found under the themes are therefore the basis of the research (Patton and Cochran, 2002).

Thomas (2010) stated that the searching of patterns is important in identifying the links in the data base where the researcher looks at the data first, then attempts to separate the data and reconstruct it again more meaningfully. For this research, the thematic analysis was used to analyse the mineral commodity export trade data between South Africa and China (2001 -2016). It was also used to analyse the state of the commodity trade relations of South Africa and China before and after China's economic downturn (1998 – 2016). Adopted from Miles and Huberman (1994), a thematic analysis model was used. A set of guidelines were also used during the thematic analysis for good practice (see Table 3.3).

Table 3.3: The general guidelines followed during the thematic analysis.

Criteria	Possible Methods
Transparency	The procedures for data analysis were clearly described and justified.
Validity	The conclusions were based on supporting data The analysis did fit within the conclusions; and there was enough content for the reader to judge interpretation.
Comparability	The findings were compared with data from other studies
The Role of the Researcher	The role of the researcher was taken into account in this research; The amount of time spent on the research project as a part-time student was taken into consideration; and The researcher ensured that she did not pull out only the findings that she found most interesting.

Source: Adapted from Patton and Cochran (2002).

The thematic analysis model according to Miles and Huberman (1994) includes the following: data reduction, data display and data conclusion.

Data reduction:

- This first stage prepared the data for a 'word–for–word' analysis to show significant patterns and themes.
- This first stage of data reduction occurred prior to preparing and organizing the content of the data.

- The second stage of data reduction involved highlighting the data that would be used to answer the research questions.
- The final stage of data reduction involved breaking the data into segments or themes.
- The themes were evaluated to ensure they represented the whole of the text for validity.

Data display:

- The purpose of data display is to view and enhance the data more clearly to answer the research question through the use of graphs and tables.
- This involved organizing thoughts and concepts by correlating the data collected with a research question. The data was displayed through tables, charts and graphs.
- Data display also helped avoid data overload.

Data conclusion

- The final stage of data analysis involved the arrangement of concepts and displays.
- The relevance of any statement whether similar or contrasting was taken into consideration.
- Interrelations among the factors and variables were identified.
- The data conclusion stage aimed to build conceptual coherence and consistency.
- In this stage, any contradictions and identical data were clarified.

3.4.2 Secondary data analysis

McCaston (2005) described secondary data analysis as 'second–hand 'analysis which is the analysis of data that has been collected by someone else (e.g. researchers, Non-Profit Organizations and institutions). In this study, the secondary data collected especially from

government officials were critically analysed as official statistics are usually regarded as unreliable, inaccurate and consisting of data gaps. It is important to mention that secondary data analyses is prone to bias. Due to the fact that the researcher has limited research training, a guideline that outlines how to judge the quality of the data was followed (see Table 3.4).

Table 3.4: Guidelines to judge the quality of the data collected from different secondary Sources.

Criteria	**Procedure**
To determine the original purpose of the data	The original purpose of the data was considered during secondary data analysis; and this assisted in evaluating the quality of the data and the identifying potential biases.
Attempt to ascertain the credentials of the source (s) or authors	This involved finding out what the authors educational background, and the past work experience was in this area. This helped in ensuring reliability of the sources used in this study.
Identifying the intended audience	This involved determining the original intended audience i.e. was the study/report specialized or generalized?

Source: Adapted from McCaston (2005).

3.5 Ethical Considerations

According to Creswell (2003), it is the responsibility of a researcher to respect the rights, needs and values of its participants when conducting a study. The consideration of ethical issues is based on the four principles outlined by Tom Beauchamp and Jim Childress (1983) which are as follows;

- Autonomy (Respect for the rights of individuals)

- Beneficence (doing right)
- Non – maleficence (not doing harm); and
- Justice (equity)

3.6 Conclusion

The methods (qualitative and secondary data collation and analysis method) chosen for this study were selected with the aim of assessing the factors that have shaped the commodity trade relations of South Africa and China over the years. The qualitative method used helped determine the settings of the focus of the study. The secondary data collation and analysis method used for further evaluation and analysis. The thematic analysis method was used to analyse the data with the purpose of identifying themes. The next chapter presents the results collated for this study that is used to address the research problem.

4 PRESENTATION OF RESULTS

4.1 Introduction

The analysis of the impacts from the slowdown in China's GDP growth has attracted considerable attention recently (CCS, 2016). In this chapter, an outline of the results that were obtained during the study using the methods mentioned in the previous chapter is provided. The first set of results consists of a timeline review of the factors that are believed to have influenced the commodity trade relationship between South Africa and the Peoples Republic of China from years 2001 to 2016. The second set of results consists of the export data of the mineral commodity trade between South Africa and China for the years 2013 – 2015 (which is regarded as the period of China's economic slowdown). The last set of results consists of data that attempts to show how different regions of the world have responded to the economic slowdown of China in the years 2013 – 2015.

4.2 The factors that have driven the commodity trade relations of SA and China.

Figures 4.1, 4.2 and 4.3 present a review of the factors that have influenced the trade relationship between South Africa and China over the period 2001 to 2016 (when South Africa established its diplomatic partnership with the Peoples Republic of China). The factors have been categorised using the main factors that were adopted from Eisenman (2012). According to Eisenman (2012), economic considerations determine trade patterns, and political ones particularly between developing countries like China and African States. It is important to note that many analysts have included political variables in their trade models yet none has developed a model that can predict the role they play. The main factors that are highlighted are as follows: China's demand for SA's natural resources, the impact of China's economic growth on mineral export growth of SA and China's emphasis on infrastructure building at home and in Africa

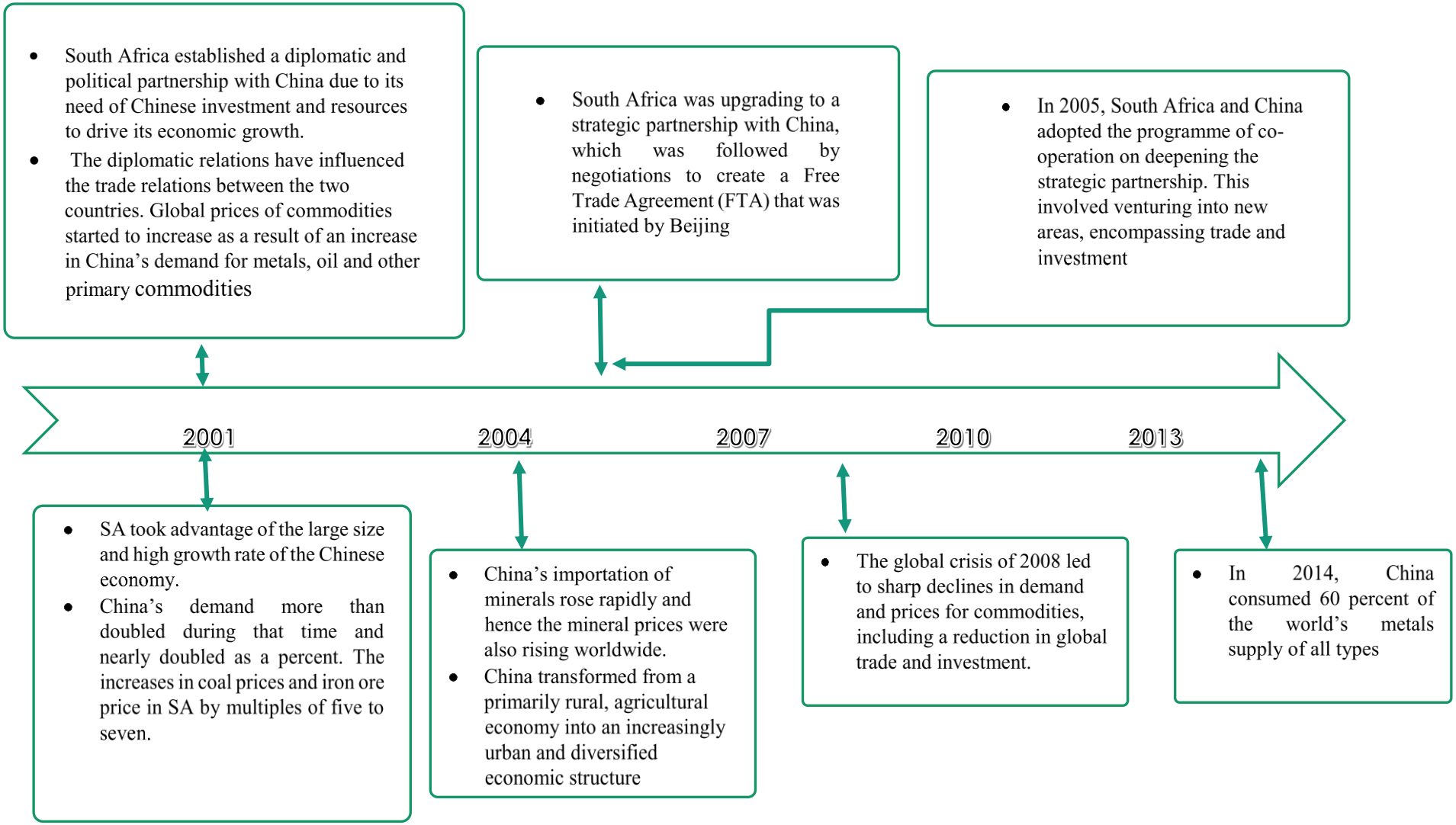

Figure 4.1. China's demand for SA's natural resources. Source: Adapted from Edwards and Lawrence (2012), Morrison (2015), Lakatos et al (2016). Humphries (2015), Lichtenstein (2013), Alden and Wu (2014), AERC (2010), Schellekens (2013) and Sithole (2015).

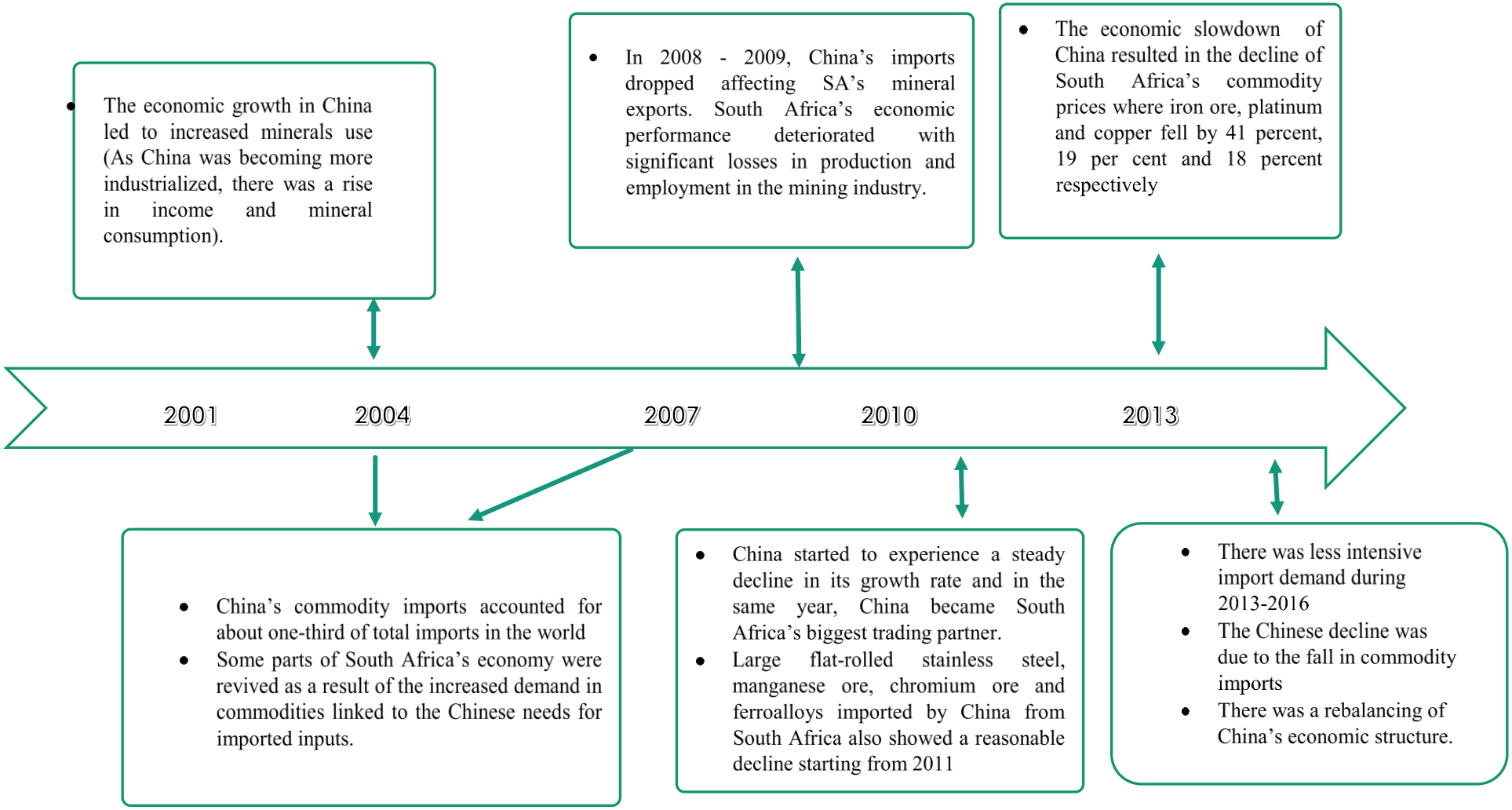

Figure 4.2: The impact of China's economic growth on SA's mineral export growth. Source: Adapted from Edwards and Lawrence (2012), Morrison (2015), National Treasury (2015), OEC (2017), Grimm et al (2013), CCS (2016) and Angomoko (2017).

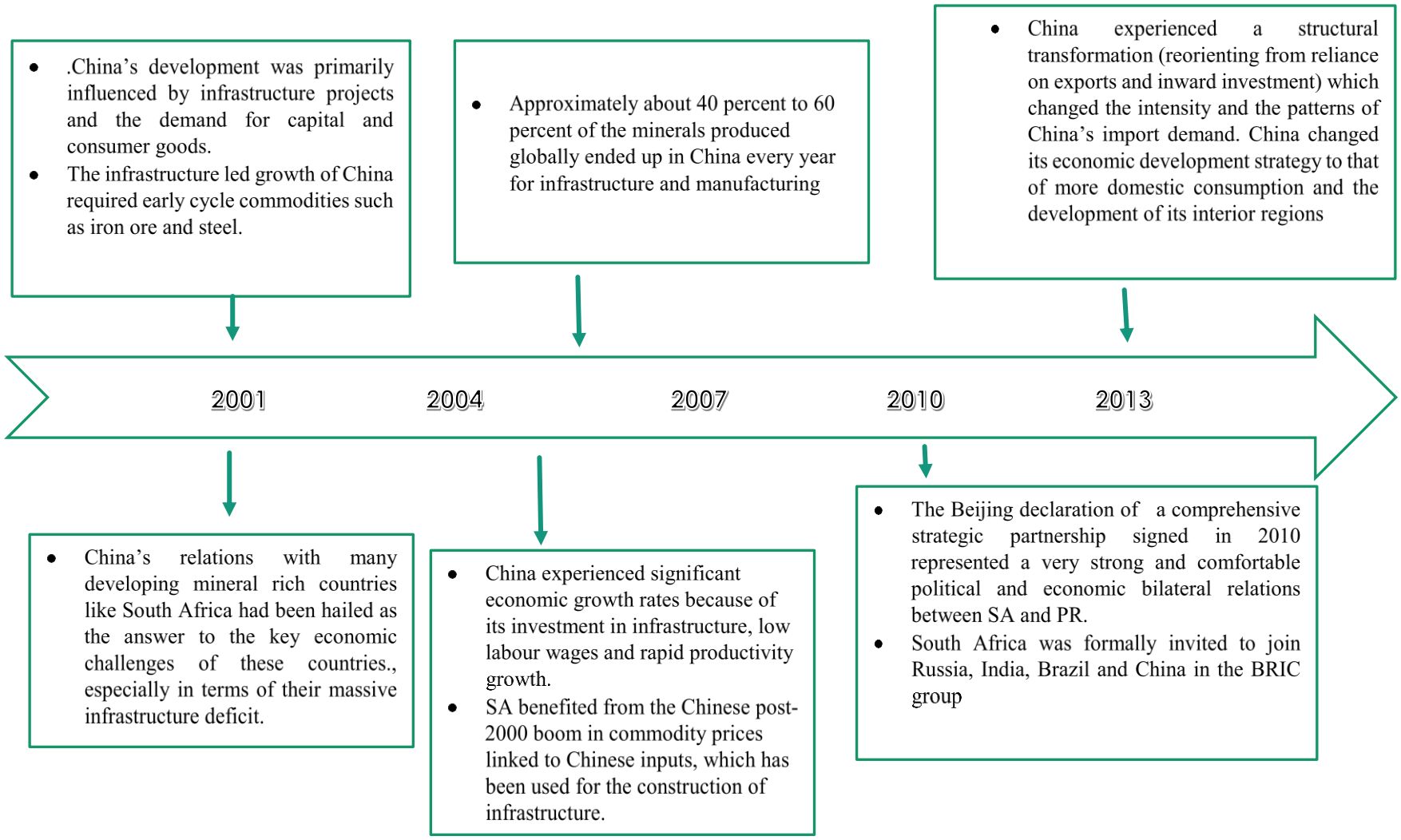

Figure 4.3 China's emphasis on infrastructure building at home and in Africa. Source: Adapted from Lichtenstein (2013, Sithole (2015), Igbinoba (2016), Schellekens (2013), Kumba Iron Ore Limited (2016), Yang (2014) and ISPI (2013).

4.3 South Africa - China Commodity Mineral Export Data

The following section outlines the export data for the short term review of China's recent economic impact on South Africa's mineral commodity trade for the years 2013 – 2015. It is further divided into the following three sections:

(1) South Africa's value of mineral exports to China in US billion dollars.

(2) The total share of metals and minerals exported by South Africa to China.

(3) The export performance of iron ore from South Africa to China (using the Kumba Iron Ore case study).

4.3.1 South Africa's Value of Mineral Exports to China (2004, 2008, 2011 - 2016)

Table 4.1 provides the data of South Africa's value of exports to China in billion dollars for the years (2004, 2008, 2011- 2016). The years have been grouped into three time periods that represent the varying significant changes that have occurred between the two trading partners. In the years 2004 and 2008, the value of South Africa's exports to China showed a slight increase with lower values as compared to the years after 2008. By 2011 – 2012, the value of South Africa's exports to China had increased significantly with the values at their peak. The last period i.e. 2013 – 2016 showed an abrupt decline as the value of exports dropped significantly. The data in Table 4.1 is further explained below.

Table 4.1: Trends in the mineral exports of South Africa to China, as evidenced by South Africa's value of exports to China.

Year	2004	2007	2008	2011	2012	2013	2014	2015	2016
Value of SA's Mineral Exports to China (%) in US$ billion	0.76	2.46	3.36	9.44	8.01	8.07	5.97	4.5	5.60

Source: Adapted from WITS (2017) and National Treasury (2015).

4.3.2 The value of the metal and mineral exports from South Africa's to China.

The following section provides an outline of the value of the mineral and metal products exported annually by South Africa to its main trading partner China for the years 2004, 2008, 2013 – 2016. The value of the exported of the minerals and metals is represented by figures 4.4 – 4.9, which are in million/billion US dollars. The percentage value of the export share has been deduced from calculations provided by the World Integrated Trade Solution (WITS). It further includes an expansion of the data provided above in Table 4.1. The monetary value of the metals and minerals in comparison to other products exported by South Africa to China was also extracted from the trade statistics of the World Integrated Trade Solution. The export product share for mineral products in comparison to the total products to China or globally was 34.6 percent in 2004.

The export product share of the metal products exported from South Africa to China in 2004 was 37.16 percent (see Figure 4.4). Iron ore was the highest exported metal commodity by South Africa to China during the time at 19 percent even though it dropped from highs of 28 percent in 2001 (OEC, 2017). In 2008, the value of the mineral exports to China from South Africa increased from US$ 2.46 billion in 2007 to US$ 3.36 billion in 2008, as indicated in Table 4.1 and Figure 4.5) During this time, iron ore and manganese ore both managed to increase by 7 percent even though South Africa's economic performance was deteriorating.

Year: 2004

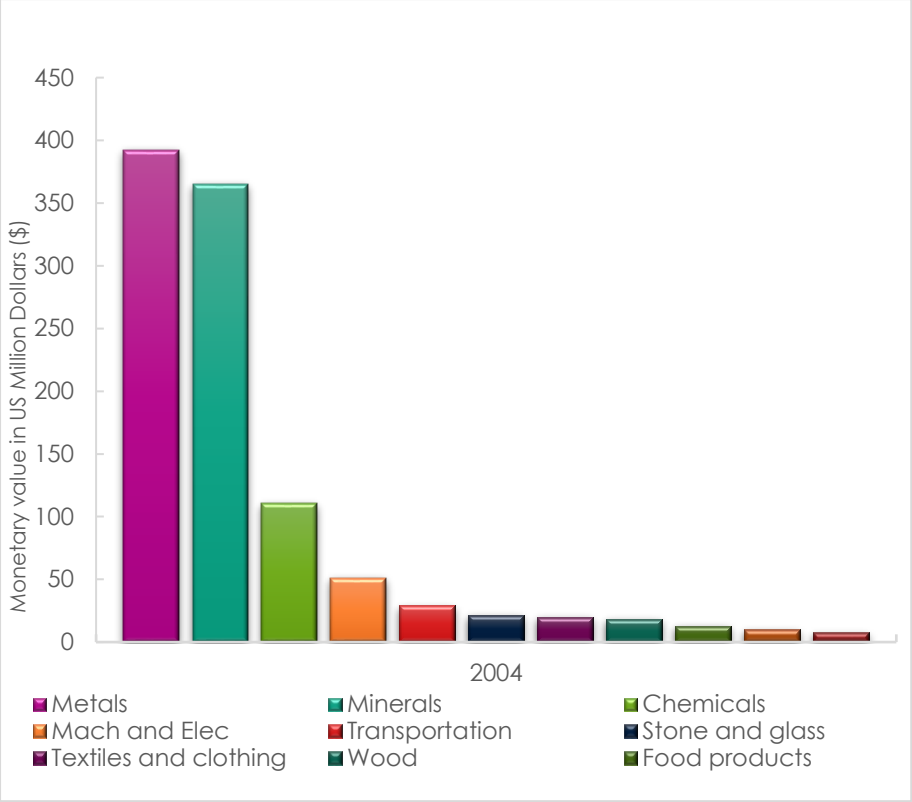

Figure 4.4: Value of metals and minerals exported from SA to China in 2004. Source: Adapted from WITS (2017).

Year: 2008

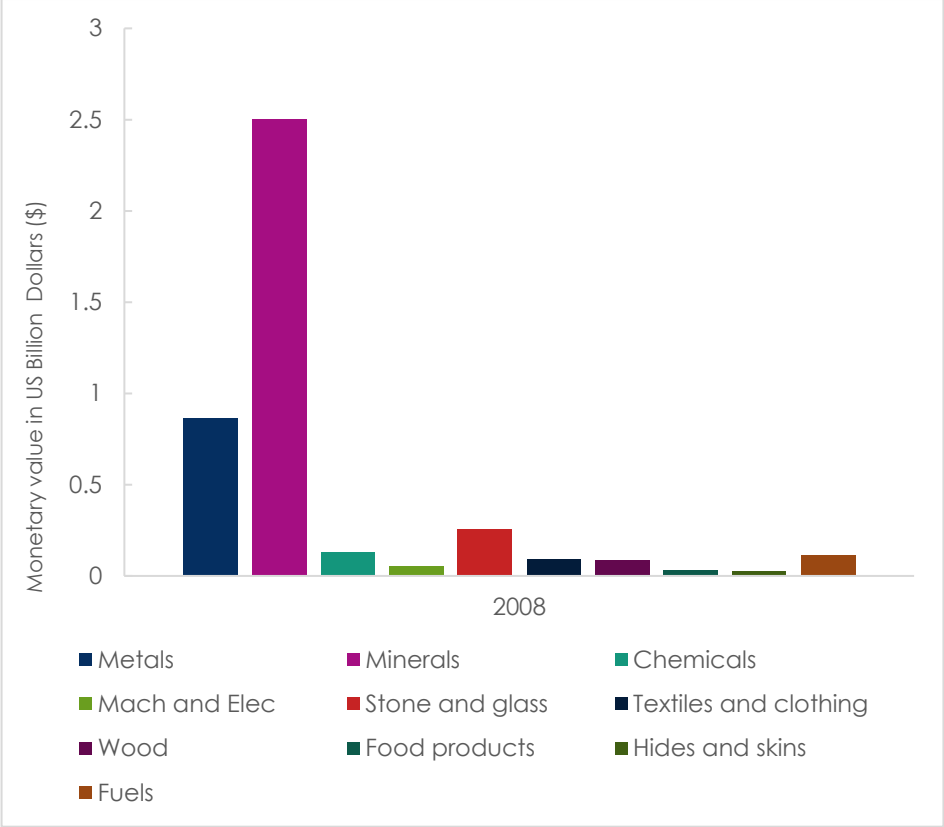

Figure 4.5: Value of metals and minerals exported from SA to China in 2008. Source: Adapted from WITS (2017).

The export share of iron ore (the highest imported metal by China from South Africa) started to reduce from 48 percent to 20 percent, from year 2011 to 2014 respectively. Large flat-rolled stainless steel, manganese ore, chromium ore and ferroalloys imported by China from South Africa also showed a reasonable decline starting from 2011 (OEC, 2017). As indicated in Table 4.1, the value of minerals exported by South Africa to China decreased from a peak of US$ 9.44 billion in 2011, to US$ 8.07 billion and US$ 5.97 billion in 2013 and 2014 respectively. The year 2013 saw the value of the mineral exports to China at a peak again following thedecline in South Africa's minin industry in 2012, where the value of the minerals and metals exported was US$ 8.01 billion. As shown in figure 4.6, the export product share was 67 percent and that of metals was 12.69 percent in 2013. In this year, the value of the minerals and metals

exported from South Africa to China was at a high in comparison to the other produces e.g. wood, textiles and clothing etc. In 2014, South Africa saw a 37 percent decline in mineral product export sharesince 2011.

Year: 2013

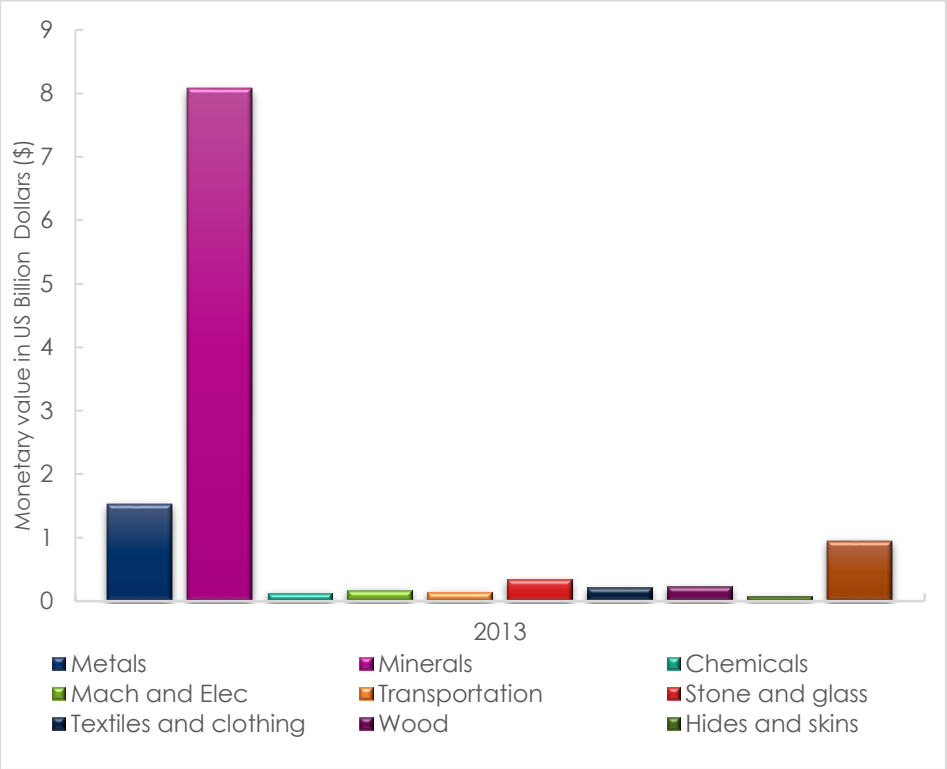

Figure 4.6: Value of metals and minerals exported from SA to China in 2013. Source: Adapted from WITS (2017).

Year: 2014

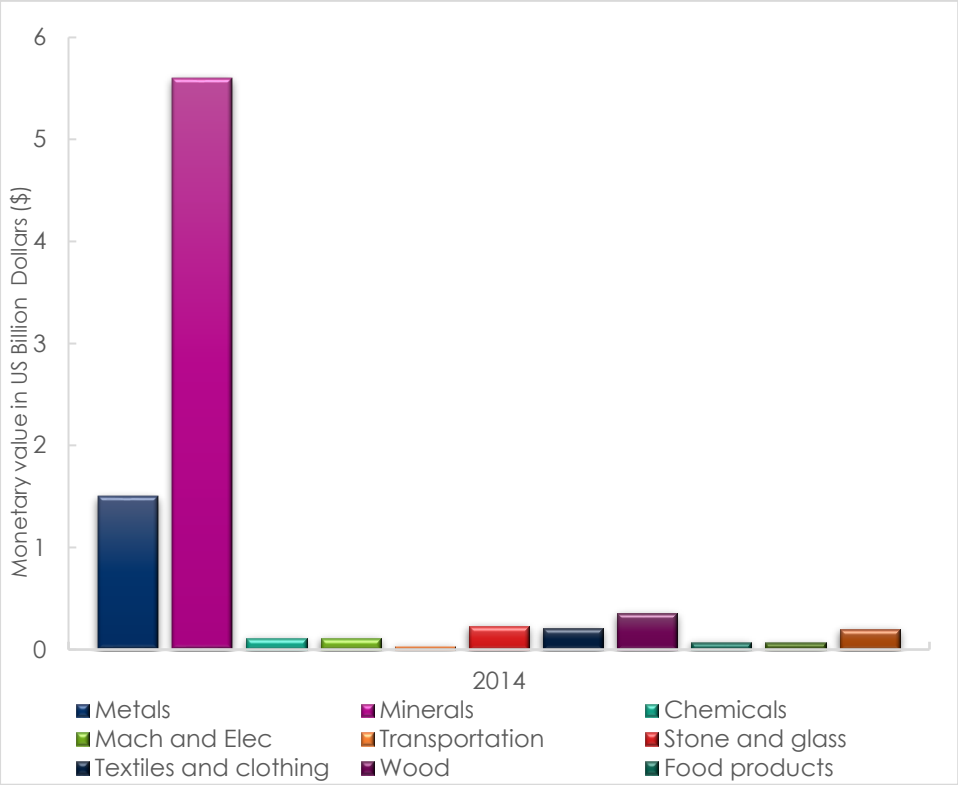

Figure 4.7: Value of metals and minerals exported from SA to China in 2014. Source: Adapted from WITS (2017).

The value of exported mineral products to China from South Africa slowed considerably with China's rapid economic slowdown. As shown in Figure 4.7, the value of the mineral products exported from South Africa to China had an export product share of 64.55 percent and that of metals was 17.31 percent in 2014. The value of the minerals and metals exported from South Africa to China was still at a high in comparison to the other products e.g. wood, textiles and clothing. The export value of minerals and metals continued to decline from US$ 5.97 billion in 2014 to US$ 4.5 billion in 2015. As indicated in Figure 4.8, the value of the mineral products exported from South Africa to China had an export share of 59.55 percent and that of metal products was 18.05 percent in 2015. The value of the minerals exported from South Africa to China picked up again from US$ 4.5 billion to US$ 5.02 billion as indicated in Table 4.1. In

2016, the export share of the minerals and the metals was 59.01 percent and 23.24 percent respectively (see figure 4.9).

Year: 2015

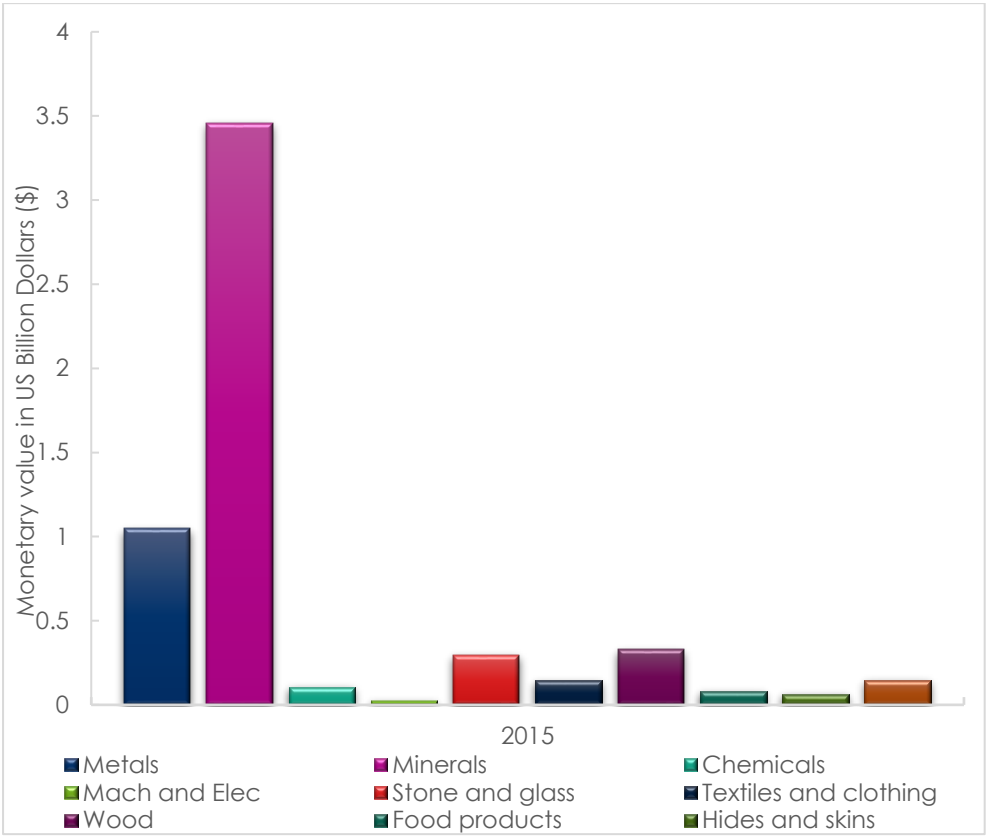

Figure 4.8: Value of metals and minerals exported from SA to China in 2015. Source: Adapted from WITS (2017).

Year: 2016

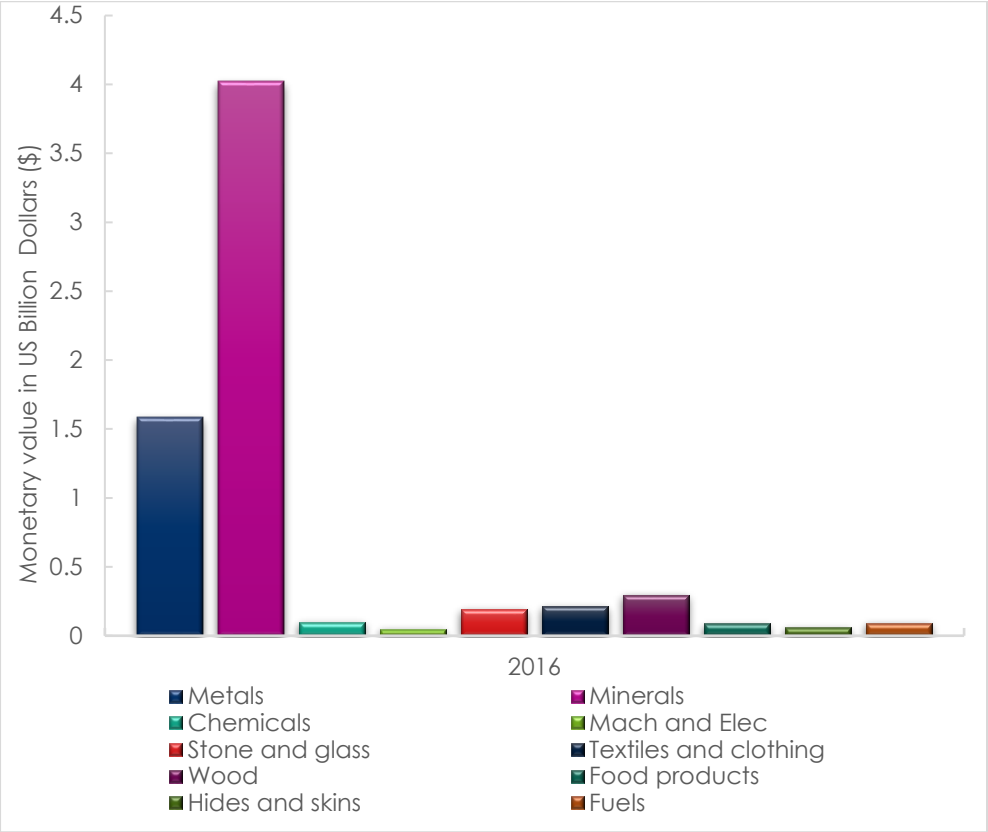

Figure 4.9: Value of metals and minerals exported from SA to China in 2016. Source: Adapted from WITS (2017).

4.3.3 The Export Performance of Iron Ore of SA (2013 – 2016)

The data in Figure 4.10 was taken from 2010 – 2015 and shows the significant contribution of the total share of some of the metals and minerals exported by South Africa to China. As indicated in Figure 4.10, iron ore is the highest exported metal by South Africa to China during the years 2010 - 2015. As mentioned previously, year 2011 saw the percentage of iron ore exported from South Africa to China at its peak. From 2012, the percentage of the iron ore exported by South Africa to China declined significantly. For these reasons, this study used the findings of the iron ore export performance of Kumba Iron Ore - the biggest iron ore producing company in South Africa, to show the impact of China's economic slowdown on South Africa's mining industry particularly from an iron ore sector perspective. The data collated from Kumba

Iron Ore for this study showed the performance of Kumba's iron ore for the period 2013 – 2016. The data indicates the performance of Kumba's iron ore in terms of the total revenue and the total export sales.

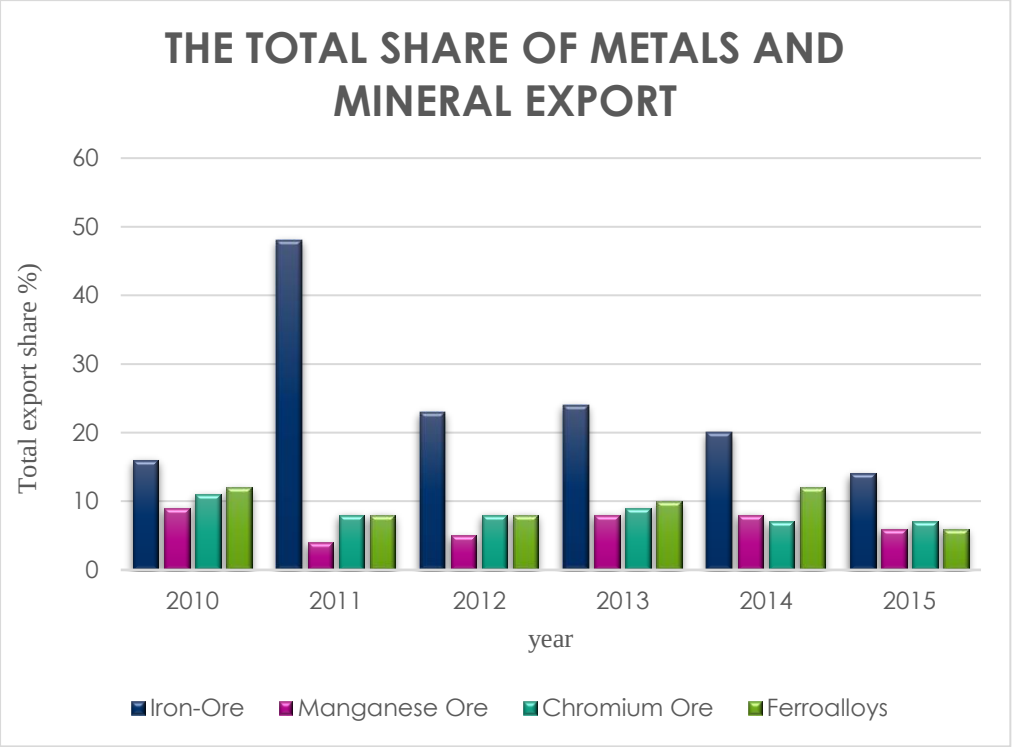

Figure 4.10: The total share of the four main metals exported by South Africa to China. Source: Adapted from OECD (2017).

Kumba Iron Ore – A Case Study

Kumba Iron Ore Limited was established in November 2006 when the iron ore assets of Kumba Resources Limited were unbundled and listed separately on the Johannesburg Securities Exchange. Figure 4.11 shows the sub-divisions belonging to Kumba Iron Ore which are Centurion Corporate Office (1), Sishen mine (2a), Kolomela mine (2b), Saldanha Bay port operations (3), a State – owned enterprise through which all Kumba export volumes are exported and Thabazimbi mine – now closed (4). Kumba is known as a supplier of high–quality iron ore to the global steel industry (Kumba Iron Ore, 2016).

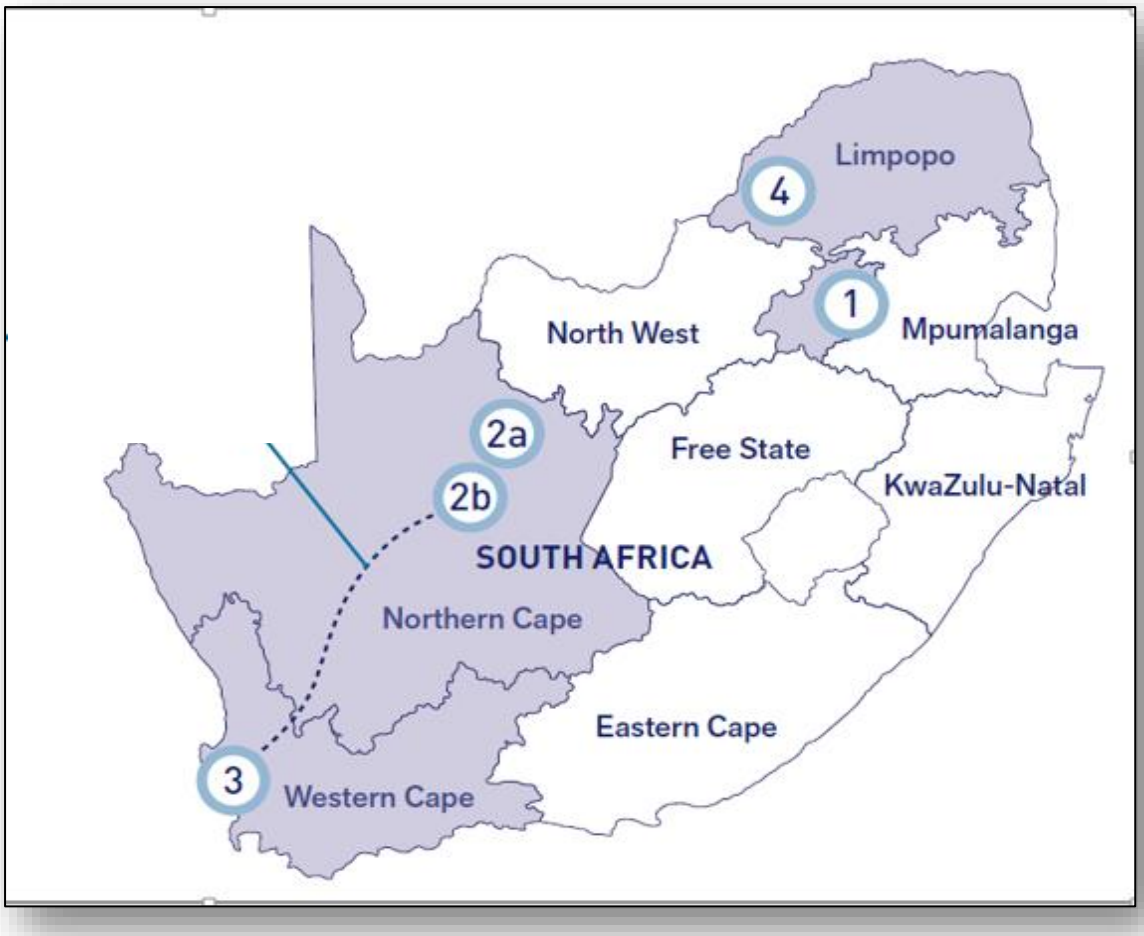

Figure 4.11: Kumba Iron Ore Limited mining and port operations. Source: Anglo American: Kumba (2016)

Table 4.2 below provides data for the total revenue generated by Kumba Iron Ore for years 2013 – 2016 (period of China's economic slowdown) and the total export sales volumes geographical split of the same period. The focus is specifically on this period as it marks the occurrence of China's economic decline. Table 4.2 highlights the significant contributions of China to South Africa's iron ore exports. Additional countries such as Japan and South Korea, India and other Asian countries, Europe/MENA/America are used for reasons of comparisons. The total exports sales volumes geographical split mentioned below were taken from Kumba Iron Ore statistical data.

Table 4.2: Total Revenue generated and Export sales volume for Kumba Iron Ore (2013 - 2016).

Year	Export destination	Rands in millions (Rm)	Export sales volumes (%)
2013	South Africa	3.672	-
	China	**35.154**	***67***
	Rest of Asia	10.587	22
	Europe	4.926	11
	MENA	122	-
	Total	54.461	
2014	South Africa	3.763	-
	China	**24.906**	***57***
	Rest of Asia	14.958	33
	Europe	3.687	10
	MENA	-	-
	Total	47.596	
2015	South Africa	2.277	-
	China	**19.972**	**63**
	Rest of Asia	9.879	27
	Europe	3.130	10
	MENA	-	-
	Total	35.260	
2016	South Africa	2,250	-
	China	**25.054**	**64**
	Rest of Asia	7.730	22
	Europe	4.846	14
	MENA	275	-
	Total	40.155	

Source: Kumba Iron Ore (2013, 2014, 2015 and 2016).

The revenue of Kumba Iron Ore for the period of 2013 had decreased from R 54.46 billion to R 47.59 billion in 2014, a 13 percent decline overall (see Table 4.2). The export sales to China,

which is the biggest export destination for most of South Africa's iron ore had decreased by 10 percent between 2013 and 2014. The export sales volumes of Japan and Korea were the second biggest contributors to South Africa's iron ore exports at 22 percent both in 2013 and in 2014. India and Asia only showed a significant contribution to the iron ore export sales of 11 percent in 2014. The revenue generated by Kumba Iron Ore further dropped to R 35.26 billion in 2015. The revenue generated from exports to China dropped to R19. 972 billion in 2015 from 24.9 billion in 2014, even though the export sales volume had increased from 57 percent in 2014 to 63 percent in 2015. In 2016, China managed to maintain the largest sales volumes percentage for an export destination at 64 percent. During the time, the iron ore export sales to China started to pick up at R 25 billion. Overall, China was the highest contributor to Kumba's iron ore export revenue and export sales volumes for the years 2013- 2016. In those years, the total revenue generated from the iron ore exports dropped significantly including those of China individually.

4.4 South Africa's Economic Indicators v/s China's Economic Decline

In this study, a number of economic indicators are presented to show how South Africa's economy has responded to the patterns of mineral commodity trade that have occurred between South Africa and China. The economic indicators include Gross Domestic Product (GDP) growth rate, Gross Domestic Product (US$ billion) and unemployment rate. The different sub-sections presented below elaborate on the indicators individually.

4.4.1 Gross Domestic Product (GDP) growth rate

The Gross Domestic Product is one of the most useful economic indicators for measuring the economic growth of a county. The GDP growth rate of South Africa and China is provided below to show how their economies have grown over the years in comparison to one another. Fig 4.12 shows South Africa and China's GDP growth rate for the years 2001 – 2016.

Figure 4.12: South Africa and China's GDP growth rate for years 2001 - 2016. Source: Adapted from World Bank (2017).

As indicated in Figure 4.12, South Africa's GDP growth rate showed an increase over the years, which correlate with the increase of China's GDP growth rate. In the years 2004 – 2007, the GDP growth rate of China showed a rapid increase. China's GDP growth rate rapidly increased from 10.1 percent in 2004 to 14.2 percent in 2007. South Africa's GDP growth rate also increased slightly from 4.6 percent in 2004 to 5.4 percent in 2007. Between the years 2008 – 2009, the GDP growth rate of China had dropped from 9.6 percent to 9.2 percent respectively. South Africa's GDP growth rate had the same response with a decline of 3.2 percent and -1.54 percent in the years 2008 and 2009. From 2010 to 2011, China's economic growth rate started to pick up and so did that of South Africa. In 2010 and 2011, South Africa's GDP growth rate was at 3 percent and 3.2 percent respectively. China's GDP growth rate was at 10.6 percent in 2010 and 9.5 percent in 2011. From 2013 – 2015, China's growth rate showed a steady decline

from 7.7 percent to 6.9 percent. On the other hand, South Africa's growth rate dropped from 2.3 percent to 1.3 percent also.

4.4.2 SA's GDP in monetary terms and Unemployment

The real GDP of South Africa has shown a decline over the last few years (2011 – 2016). The GDP of South Africa decreased from US$ 416 billion dollars in 2011 to US$ 360 billion dollars in 2016. South Africa's unemployment rate on the other hand managed to maintain an average rate of approximately 24.8 percent from 2011 to 2016.

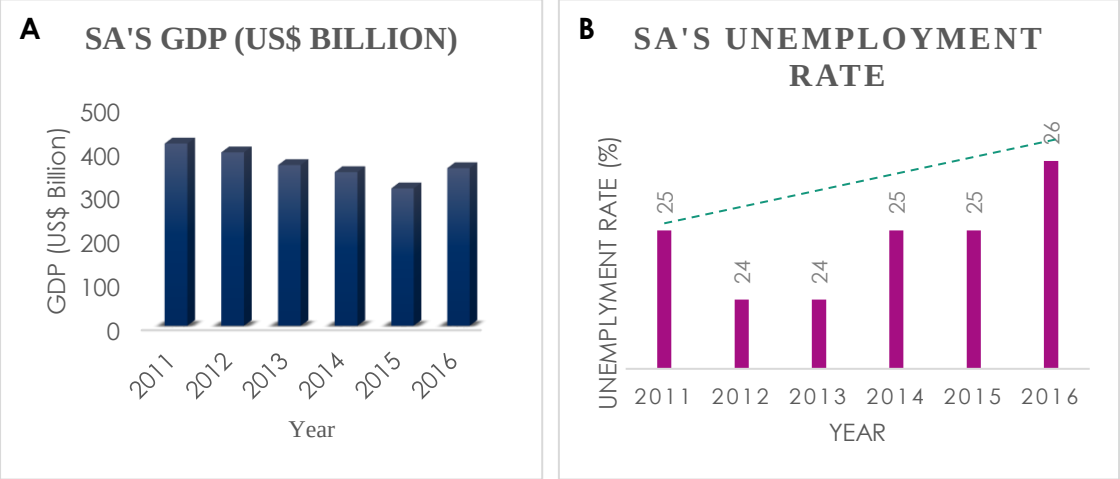

Figure 4.13: South Africa's GDP (A) and unemployment rate (B): Source: Adapted from http://data.worldbank.org/country/south-africa.

4.5 Conclusion

There are varying factors that have influenced the mineral commodity trade relations between South Africa and China. The factors that have driven the commodity trade relation of SA and China mentioned in this section have been the major driving force behind the strengthening of the relationship of these two countries. The value of metals and minerals exported from South Africa to China prior and during China's economic decline provided an in-depth overview of the performance of the mining industry of South Africa during the time. The export data also

shows the impact of China's economic decline on performance of the mining industry of South Africa. An outline of the iron ore exported by mining giant Kumba Iron Ore showed the effects of China's economic slowdown on the revenue generated by Kumba prior and during China's economic slowdown. The decline of the GDP growth rate correlated with the increase of the unemployment rate in South Africa. The results presented in this section were used to highlight South Africa's response to China's economic slowdown from a mineral trading perspective. The trends and patterns mentioned in Chapter 4 are further analysed in Chapter 5 and the implications to trade policy is also provided.

5 INTERPRETATION OF RESULTS

5.1 Introduction

China has undoubtedly emerged as a global force in the world economy in the past years, hence, any slowdown or changes in the composition of its economic growth can bring about significant spillovers to its trading partners - developing countries in particular. This chapter provides an interpretation of the results obtained for this study i.e. the impacts of the decline of China's economy on the mining industry of South Africa and the implications for South Africa's trade policy. As previously mentioned in Chapter 3, the research questions are addressed in this chapter to achieve the objectives of this research project. This chapter is divided into the following:

- An interpretation of the detailed timeline of the factors that have driven the commodity (minerals, metals) trade relations of South Africa and China from 2001 – 2016;
- An interpretation of the China-South Africa commodity export data for the short term review of the recent economic impacts (2013 - 2016) associated with the slowdown of China's GDP growth; and
- Policy implications of the impact of China's economic decline on South Africa's mineral commodity trade.

5.2 Factors that have driven the mineral commodity trade relations of SA and China.

There are various factors that have influenced the mineral commodity relationship between South Africa and China as previously mentioned in chapter 4. Only four main factors, which have been adopted from Eisenman (2012) have been selected for this study.

1. The Comprehensive Strategic Partnership of SA and China;
2. China's demand for South Africa's natural resources;

3. The impact of China's economic growth on SA's mineral export growth; and
4. China's emphasis on infrastructure building at home and in Africa.

As illustrated in Figures 4.1 – 4.3 in chapter 4, the timelines of the factors that have influenced South Africa and China's mineral commodity trade relations over the past 15 years, show how much of a significant trading partner China has been to South Africa. It also shows how critical the trade relationship has been for both countries from a development perspective even though the trade ties appear to be significantly unbalanced and unsustainable. Before giving an outline of the factors shaping the mineral trade relationship between China and South Africa, it is important to highlight the significance of political influences of China as a trading partner to South Africa.

5.2.1 The Comprehensive Strategic Partnership of SA and China

According to Grimm et al (2013), it is observed that as the diplomatic relationship between South Africa and China was further explored and strengthened, the trade relationship between them would strengthen as well. This supports the notion suggested by Alden and Wu (2014) that there is a strong interdependence between South Africa and China's trade relations and the political ties that exist between them. It is important to emphasize that trade patterns between trading partners is highly influenced by political relationships that exist between them. Bliss and Russel (1998) found that democracy is significantly and positively related to trade volume and that States attempt to control trading patterns on behalf of perceived State and national interests. However, researchers remain divided among those who believe existing economic theories of international trade can significantly explain the patterns of China's trade with African countries and those who believe political considerations are just as important (Eisenman, 2012).

5.2.2 China's demand for SA's natural resources.

Firstly, as mentioned by Grimm et al (2013), it is evident that South Africa's position as a major economic power in Africa with natural resources and industrial capacity has been a major pull factor for China, as illustrated in the timeline (see Figure 4.1). Secondly, as shown in Figure 4.1, China's demand for commodities became more robust especially during 2004 – 2007, resulting in threefold increases in metal prices for South Africa. This came after China had moved up in the World Trade Organization in 2001, which made a positive difference in trade between South Africa and China (Lakatos et al, 2016).

During this time (2004 – 2007), China was undergoing rapid industrialization and countries like South Africa in the African continent were a reliable source for raw materials and a destination for foreign direct investment that makes use of lower local wages. The years 2008 – 2009 saw a decline in demand for mineral commodities as a result of the global economic slowdown. The demand for commodities bounced back from 2011 before declining again by 2013 – 2014, which was the period of China's economic slowdown in response to China's structural changes to move towards a consumer-based economic model.

According to TIPS (2015), comparative advantages exist between South Africa and China, and thus form the basis of the trade relationship between the two countries. South Africa possesses a comparative advantage in various primary sector commodities (metal ores, gold and coal), while on the other hand, China has a comparative advantage in various secondary sector commodities. Therefore, the mineral commodity trade relationship between South Africa and China can be explained by South Africa's comparative advantage in mineral resources and China's need to search for as many raw materials as possible (Eisenman, 2012). It is important to add that policy makers in countries which possess comparative advantage in mineral resources should not ignore this fact when formulating policies.

5.2.3 The Impact of China's economic growth on SA's mineral export growth

The factor illustrated in Figure 4.2, which is the impact of China's economic growth on SA's mineral export growth shows how South Africa's mining industry has responded to changes in China's economic growth rate over the years. Figure 4.2 shows that China's rapid growth rate has been a major contributor to the South Africa's mineral export growth. The growth of South Africa's commodity exports corresponds with the rise of China's economic growth. Where China experienced an economic decline e.g. during (2008 – 2009 and 2013 – 2015), South Africa's commodity exports faced a decline as well. It can be deduced that as a major trading partner of China, South Africa has been affected by the major changes to China's economic growth. South Africa has been impacted negatively by the slowdown of China's economy as shown on Table 4.2.

As China became more industrialized, there was a rise in income and mineral consumption. According to Angomoko (2017), China's growth affects countries differently depending on the type of commodities they are specialising in for export. Hanson and Robertson (2008) mentioned that countries where manufacturing goods account for less than 25 percent of merchandise exports are expected to benefit from China's growth, with the commodity boom lifting their terms of trade. On the other hand, countries that are well diversified in terms of export production (agriculture, manufacturing and mining) or where manufacturing accounts for between 30 percent and 55 percent of merchandise exports tend to get mixed results in terms of commodity price fluctuations. China's growth tends to have an adverse effect. South Africa is a generally mineral resource- dependent country because of its natural resource endowment. South Africa benefited greatly from the increased trade and investment with China (Crul, 2013).

5.2.4 China's emphasis on infrastructure building at home and in Africa.

As indicated in Figure 4.3, the mineral trade relations between South Africa and China can be further attributed to not only the post-2000 boom in commodity prices, but also China's infrastructure building at home and in Africa. China has played a vital role in the promotion and investment of infrastructure and industrial projects in countries such as South Africa over the years. According to Du Plessis (2016), China is the largest single source of financing for infrastructure in Africa at roughly $13.9 billion a year. China has prioritized infrastructure-building in its African agenda and its increasing involvement in Africa's infrastructure is attributed to two major factors. These are China's domestic construction industry and the need for the development of African infrastructure. China's investment in infrastructural development in Africa is regarded as unsustainable and it is suggested that the success of projects is dependent on the African State's responsibility to execute and maintain them. Recently, the resilience of China's investments in African infrastructure has been called into question in the light of its own economic slowdown. As a resource-rich country, South Africa should be aware of China's economic realities and should consider developing its own infrastructure.

5.3 China-South Africa Commodity Export data for the short term review.

It is important to highlight the key findings of this study. The results obtained in this study suggest the following:

- South Africa and its mining industry have benefited greatly from its trade relationship with China although there is a need for policy reconstruction to help South Africa perform well in global trading environment.
- The mining industry of South Africa has been affected by the spillovers of the changes in China's economic growth model transmitted through the channel of trade.

- China's economic growth changes have coincided with the variations in South Africa's metal and mineral product export share.
- The variation in mineral and metal products exports disrupts the performance of key indicators in South Africa such as GDP growth rate and the national unemployment rate. It also affects the mining industry's expenditure of goods and services from other sectors of the economy.
- Although commodity price cyclicity may certainly not be solved by trade policy alone, however the reconstruction of the trade policy can assist in handling both positive and negative disruptive dynamic economic changes such as China's economic decline.

The trend in the mineral commodity trade relationship between South Africa and China, as evidenced by South Africa's value of exports to China as shown in Table 4.1 suggest that the trade relationship has been beneficial to South Africa's mining industry. The value of South Africa's mineral and metal exports to China has varied considerably over the years, growing from US$ 0.76 billion in 2004 to a peak of US$ 9.44 billion in 2011. In 2016, the value of the mineral and metals exported from South Africa to China dropped to US$ 5.6 billion. This trend coincides with the mineral and metal commodity price fluctuations that have occurred over the years as a result of the increase and in some instances, decline in external demand for South Africa's metal and mineral exports by China.

5.3.1 Mineral commodity export data - The early 2000s.

South Africa's sector benefited from the early 2000s commodity boom, which in turn reflected in the value of its mineral exports to China. It is evident that the value of South Africa's mineral exports to China performed well during the commodity boom era of the early 2000s till recent years. In 2004, the value of South Africa's mineral and metal exports to China had increased from US$ 0.29 billion in 2001 to US$ 0.76 billion in 2004. This period corresponded with an

era of increase in China's demand for mineral and metals (WITS, 2017). The export product share for the mineral products exported from South Africa to China in comparison to the total product were still growing in the early 2000s as shown in Figure 4.4. This period saw the prices of iron ore rising nearly ten-fold and prices of metallurgical coal four-fold as China got incorporated into the World Trade Organization (ASPI, 2012). Additionally, the increase in the value of South Africa's exports to China coincided with the time that Pretoria was upgrading to a strategic partnership with China, which was followed by negotiations to create a Free Trade Agreement (FTA) that was initiated by Beijing in 2005 (Alden and Wu, 2014). Foreign investment in South Africa was increasing rapidly at the time as well, corresponding with the period of high metal prices. In turn, the capacity in the sector increased substantially (IMF, 2005).

5.3.2 Mineral commodity export data -The year of the Financial Crisis (2008 - 2009).

In 2008, the value of the mineral exports to China from South Africa increased to US$ 3.3 billion from US$ 2.46 billion in 2007 as shown in Table 4.1. During this time, iron ore and manganese had both managed to increase by 7 percent even though South Africa's economic performance was deteriorating. South Africa's economic deterioration was accompanied by significant losses in production and employment in the mining industry as a result of the global financial crisis of 2008 (Edwards and Lawrence, 2008). According to Nielsen (2015), after 2008, it became clear that China's economy had become exhausted and that the fundamental rebalance had become imperative. During this time, China's capital-intensive economy went into a higher gear and a lot of imbalances of the system began to manifest.

5.3.3 Mineral commodity export data (2011 - 2012).

In 2011, China started to experience a steady decline in its growth rate. However, even though the year represented a period of decreased exports globally following the financial crisis of

2008 – 2009, it was in this year that China became South Africa's biggest trading partner (National Treasury, 2015). The decline of China's growth rate started in 2011 and correlated with the gradual decline of the foreign investment in South Africa in that same year (IMF, 2015). The export share of iron ore (the highest imported metal by China from South Africa) started to reduce from 48 percent to 20 percent from year 2011 to 2014 respectively. Large flat–rolled stainless steel, manganese ore, chromium ore and ferroalloys imported by China from South Africa also showed a substantial decline, which started in 2011 (OEC, 2017). According to CCS (2016), the year 2011 represented a time in which China's policy makers were mindful that double-digit growth was unsustainable in the long run. Hence, the policymakers of China started to implement measures that would alter China's growth structure towards a more sustainable model. In 2012, the value of mineral and metal exports to China from South Africa was at a peak at US$ 8.01 billion considering the 2012 mining industry decline.

5.3.4 Mineral commodity export data – The economic slowdown (2013 - 2015).

As indicated in Table 4.1, the value of metals and minerals exported by South Africa to China decreased from a peak of US$9.44 billion in 2011, to US$ 8.07 billion and US$5.97 billion in 2013 and 2014 respectively. The year 2013 saw the value of minerals and metal exports to China at a peak again following the mining industry's decline in 2012, where the value of the minerals and metals exported was US$ 8.01 billion. In 2014, South Africa saw a 37 percent decline in mineral product exports since 2011. The value of exported mineral products to China from South Africa slowed considerably with China's rapid economic slowdown. It was observed that these variations in export product shares of mineral and metal products corresponded with the performance of South Africa's growth rate and GDP annual revenue as shown in Figure 4.13. In 2015, the export value of minerals and metals continued to decline from US$ 5.97 billion in 2014 to US$ 4.5 billion in 2015. China's demand was still falling, as

its economy shifted from infrastructure-led growth to a consumer-led growth (Anglo American, 2016).

5.3.5 The Export Performance of Iron Ore (Kumba Iron Ore Case Study).

South Africa's position as the number three supplier of iron ore to China emphasizes the strategic importance of iron ore deposits in the country and its importance as a key contributor worldwide (Mining Weekly, 2013). Kumba Iron Ore, South Africa's supplier of high–quality iron ore to the global steel industry reported low iron ore prices from 2013 – 2015 due to global supply and demand dynamics. According to Kumba Iron Ore (2016), the iron ore prices declined significantly during this period from an annual average price of US$135/tonne CFR in 2013, down to US$56/tonne CFR in 2015. The report stated that the price deterioration has been driven mainly by two factors which are an oversupply of low-cost ore from Brazil and Australia, coupled with falling prices of China's demand of iron ore.

It is assumed that this is due to the restructuring of China's economy, where early-cycle commodities such as iron ore and steel are less required in comparison to late-cycle commodities such as copper and platinum. Overall, China's slowing economic growth has affected both the steel output and consumption. According to Mining Weekly (2013), iron ore is a bellwether of economic growth in South Africa and China has emerged as the biggest market for iron as shown in Table 4.2. South Africa depends on the development of China's urban areas most importantly. If the urbanisation level in China continues to increase, driven by a requirement for employment and higher wages, steel demand and the associated iron ore will also increase.

5.4 South Africa's GDP and Unemployment growth rate

On economic growth, there was a significant fall shown in Fig 4.12 that indicated a decline in China's economic growth rate over the years especially during the 2008 - 2009 financial crisis

and the 2013 - 2015 economic slowdown. Figure 4.12 also shows a decline of South Africa's GDP in the same period. This indicates that as the rate of GDP growth of China decreased, so did the economic growth rate of South Africa. China's economic growth rate went from 9.5 percent in 2011 to 6.9 percent in 2015. On the other hand, South Africa's economic growth rate went from 3.3 percent in 2011 to 1.3 percent in 2015. This suggests that China's rebalancing of its economy affects the economies of commodity exporters like South Africa especially those that are reliant on mineral resources. Unfortunately for a country like South Africa, China's economic slowdown and restructuring has translated into the lower overall economic growth. It was observed that these variations in value of mineral and metal products corresponds with the performance of South Africa's GDP and unemployment rate as indicated in Figure 4.13. This is a clear indication that as the rate of GDP growth decreased from 2011 to 2015, it coincided with the increase of unemployment. There is a negative correlation between China's mineral commodity exports and the employment growth of South Africa. Therefore, in as much as South Africa's imports of Chinese goods has had a negative impact on South Africa's labour market over the years, mineral commodity trade performance has affected South Africa's economy negatively as well. Although the tertiary sector provides the bulk of employment in South Africa where the largest year-on-year gain in employment is observed in financial and business services - the substantial decrease in the value of the mineral and metal exports of China from between 2013 and 2015 indicates that South Africa's economy is also dependent on the metals and minerals industry.

This further supports the statement made by Cashin et al (2016) that any slowdown in the composition of China's real GDP growth can have serious implications on South Africa's economy as an emerging market and commodity exporter. Schellekens (2013) further stated that as China's economy changes, so will the rest of the world, and particularly the developing world. Any structural transformations that occur in China's economic growth are likely to

significantly change the intensity and patterns of China's demand as well as the nature of competition between China and its trading partners. This can already be seen in the patterns of the mineral commodity trade relationship between South Africa and China as observed in this study.

5. 5 Policy Implications of the impact of China's economic decline on SA.

Trade policy is one of the factors that affects South Africa's international trade and there has been a debate over the years concerning what direction South Africa's trade policy should take (Gonzalez-Nunez, 2008). Based on the results obtained in this study, factors such as commodity price fluctuations may certainly not be solved by trade policy alone, but could be one of the instruments needed to help the mining industry to withstand the global economic changes that occur unexpectedly. These include the negative disruptive spillovers of China's economic decline. The trade policy should be able to address the issues of the impact on markets for energy and minerals. This will not only boost the mining industry but also strengthen the social stability of the country. In addition, another instrument is the exchange rate which is believed to also be a significant determinant of export competitiveness.

According to Edwards and Schoer (2001), the measures of export competiveness include the unit labour costs and export diversification. The authors suggested that competitiveness hinged not only on trade policy and changes international prices but also on government supply-side measures and labour market institutions. Hence, South Africa should not concentrate its export basket in products that have a declining global market prices and/or demand. In terms of export competiveness in the context of SA's trade policy arguments, it's the Department of Trade and Industry (DTI) (2010) suggested that South Africa would be better positioned if it concentrates on expanding its labour-intensive resources within which it already has a comparative advantage instead of those resources with declining demand. Therefore, South Africa's trade

policy should be developed as part of a broader set of policies that aim to establish a new growth path for the economy.

5.6 Conclusion

The findings of this study indicate that the diplomatic relationship between South Africa and China is a key driver of the developments of their bilateral trade relations. There are various factors that influence the commodity trade relations between South Africa and China. The factors support the role of comparative advantage in the global trading environment and the influence of China in the world commodity market. The economy of China plays a significant role in terms of influencing commodity prices, given that China is a key player in the global economy. The recent economic slowdown of (2013 – 2015) shows that the spillovers associated with the decline could also be addressed by strengthening the trade policy of SA. Therefore, overall, from the interpretation of these results presented in chapter 5, it is concluded that China's economic decline causes a revenue volatility for South Africa as a result of the volatility of the mineral prices. Also, the structural changes that occur in China play a major role in influencing how China's economic growth ultimately affects its trading partners. The next chapter covers the conclusions and recommendations of this study.

6 CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

The significant and positive disruptive impact that China's economic advancement in the past initially had on South Africa cannot be overstated. However, there are other views that the outworkings of economic relations between China and South Africa have not been entirely beneficial to South Africa. Furthermore, the growth of emerging markets in the trade and investment environment will lead to continued pressure on commodity prices. r It is evident that South Africa's current trade strategy needs to be reconstructed to enable the country to handle the converse instance of negative disruptive dynamics of their economic engagement with China. Furthermore, because South Africa is significantly dependent on its mineral exports to China, China's economic decline appears to be having deteriorating effects on South Africa's mining sector and overall economy. This study used the results from an investigation into the performance of SA's mineral export to China from a Trade policy perspective to provide support to the ideology that China's economic decline is negatively disrupting the economic performance of South Africa. The following section outlines the conclusions of the research report. It includes a summary the findings of the study. It also consists of lessons for South Africa and recommendations for further work.

6.2 Lessons for South Africa

It is without doubt that the mineral commodity trade relations between South Africa and China are still growing, and it is expected that the growth will continue in the future. However, the trade relations can be used more advantageously as a platform for the exchange of information and strategies to increase the opportunities between countries. For example, China's strategy on Research and Development expenditure has been commended; it is assumed that it accounts for 15 percent of the world's total spending on Research and Development (WEF, 2016).

Although poverty and high levels of inequality are some of the challenges that China still faces, it is still a world leader in poverty reduction and healthcare, especially considering its immense geography and large population size (WEF, 2016). Additionally, as the trade relations between China and South Africa strengthens, South Africa should use these relations with China to expand its knowledge on how they too can develop its other sectors of the economy such as Agriculture, Industry, Science and Technology. This is important, as it has already shown that for South Africa, there is now a negative correlation between the decline of the export share of metal, mineral exports in GDP and economic growth.

6.3 Recommendations

Unfortunately, South Africa will be affected by the effects of the changes in commodity prices that are associated with China's economic growth. Rangasamy and Swanepoel (2011) have stated that China's economic growth consists of two opposing effects on price changes. China can either lead to a sharp rise in demand for commodities which in turn has kept commodity prices high or will have a negative effect on global prices. Considering that Chinese growth has had a notable effect on world mineral prices and it has become a key driver of price dynamics of metals, South Africa should determine whether its trade policies are robust enough to avoid any external constraints. Therefore, this study recommends that it is important for South Africa's policy-makers (which is mineral-rich) to begin channelling their policies (trade, industrial, mineral policies etc.) to diversify their economy from being excessively dependent on minerals and other products with declining global prices and demand. Also, the policies should be restructured in ways that provide buffers for policy makers to handle unexpected and certain global economic changes as well as the aggressive nature of China's approach to its trading partners in preparation for another cycle of China's economic growth.

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