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SINO-AFRICAN MINING ACTIVITIES: CHALLENGES AND OPPORTUNITIES

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A research report submitted to the Faculty of Engineering and the Built Environment, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements of the degree of Master of Science in Engineering

Johannesburg, 2011

Declaration:

I the undersigned, hereby declare that the work contained in this assignment is my own original work and that I have not previously, in its entirety or in part, submitted it at any university for a degree.

Signature:……

Date:……

FACULTY OF ENGINEERING AND BUILT ENVIRONMENT

SINO-AFRICAN MINING ACTIVITIES: CHALLENGES AND OPPORTUNITIES

CHARLTON T. MADZIWA

NOVEMBER 2011

Abstract

China`s resource demand is contributing to historic shifts in global mineral market behaviour and overall optimism in African resource rich countries. Considering the fact that most African countries are underdeveloped and China has become Africa`s largest source of FDI, Sino-African affiliations hold tremendous potential for both parties. While the majority of Sino-African studies investigate FDI as the definitive parameter in measuring Sino-African engagements, the responses by African governments and the 'indirect' impacts of China`s resource demand are often neglected. As Chinese demand sustains high resource prices, African resource rich governments are gaining leverage and renewed vigour in pursuing developmental goals. The study investigates how African governments are responding to this new found leverage, the implications to multilateral institutions such as the International Monetary Fund (IMF) and emerging challenges such as uncontrolled Chinese migration. On a global scale, the study explores how China is affecting market power balances, pricing and availability in key sectors such as iron ore and rare earth elements (REEs).

The research concludes that with regards to the iron ore and rare earth elements markets; China`s national strategy and regulation of domestic industries has largely been successful, particularly in the REE sector. China`s steel industry on the other hand as the largest consumer of iron ore has contributed to a decline in consumer bargaining power as the large iron ore producers have increased the benchmark iron ore prices and are dictating pricing terms. The report further concludes that recent developments in Zimbabwe and South Africa on the large part serve China` strategy, for example Zimbabwe's 51% Ownerships Law and South Africa`s Black Economic Empowerment (BEE). Going forward, Chinese migration is emerging as a threat to strengthening Sino-African affiliations. China is also contributing to a decline in the role and influence of the IMF in Africa, as high commodity prices mean that African governments can reject the IMF`s loan preconditions and engage with China.

Acknowledgements

I would like to acknowledge the following individuals for their timely and much needed input in completing this research project.

First and foremost, Professor Richard Minnitt for his insights and advice at crucial stages of the project, from critical observations and advice at the proposal stage of the study through to final completion. From the copious amounts of draft material submitted and the checks and bounds during critical stages of the project. The motivation to pursue the project is very much appreciated and the unending advice and assistance during personally challenging times.

To my classmate Tawanda Zvarivadza, thanks for your ‘energetic’ advice and support during the course. The plentiful late hours in the Chamber of Mines and Delheim preparing for exams or printing off assignments, fun times indeed.

Last but not least my family, for their unstinted support during the demanding year and half. To my partner, Bongani Togwe, your support and genuine interest in mining and mineral economics are commendable. For a Stress Engineer 5000 miles away to put up with endless proof reads and phone calls at unsociable hours is a feat that warrants mention.

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Chapter 1: *Introduction*

1.1 Problem Statement and Research Questions

China`s role in Africa has been the product of much debate, some of the prominent work on Sino-African activity was conducted in the period 2006-2009, by recognised authors such as Kaplinsky and Morris (2006, 2008, 2009) and Corkin et al (2006, 2007, 2008). The publications are unanimous in agreement that Sino-African resource agreements have potential to benefit African countries. Kaplinsky and Morris (2009) argue that the underlying challenge is not the ability of African governments to devise mining legislation that strives for mutual benefit in mineral trade but one of capacity in enforcement, negotiating ability, political will and legitimacy. In agreement with this observation resource producing nations on the whole are striving to maximise returns on mineral wealth through reforms and shifts in approach and strategy, but African jurisdictions still confront major hurdles. The effectiveness of in country beneficiation, indigenous participation and "aid for minerals agreements" are severely compromised by the fore mentioned challenges. Corkin (2007) is in agreement with Kaplinsky and Morris (2009) that African governments are challenged by the lack of capacity to monitor and encourage direct investment that benefits domestic industries regarding technology transfer and skills development among others. Overall Corkin proposes a re-examination of how foreign companies enter African resource markets and the supervisory skills of African governments in infrastructure projects. The author raises questions regarding the ownership of the "infrastructure for resources" development processes and if African governments are being dealt the short end of the stick. Kaplinsky et al (2008) recognise the complementary nature of Sino-African trade and advise that the majority of Sino-African studies to a large extent focus on the direct impact of the bi- lateral engagement but neglect the overall indirect impacts. This observation is a critical one because economies operate in global markets, therefore countries that do not have direct relationships

with China will be indirectly affected by China`s resource acquisition drive. Analysing Sino-Africa engagements through the standard instruments of FDI, trade and aid to a large extent is a passive approach if Sino-African research fails to investigate the overall impact China is having on global markets and how it is challenging the status quo. These indirect impacts potentially have far reaching consequences in comparison to current FDI, trade and aid levels. From this perspective, the report endeavours to analyse China`s impact on global resource producers in light of the interdependcy of global markets but at the same time address developments in key African countries. The developments can be termed 'by-products' or 'spill over effects' of China`s resource demand and Sino-African engagements.

In supporting the analysis of the indirect impacts of China`s resource demand and aggressive resource acquisition strategy, Ethiopia emerges as a paragon. While it is assumed that African resource nations will extract the highest value and returns from Sino-African affiliations, arguably the most notable gains have been witnessed in 'resource deficient' Ethiopia. For those who are fortunate enough to travel across the African continent, the benefits of the Sino-African link are best witnessed from the panoramic view of the aeroplane as one descends upon Addis Abba. This is arguably one of the most significant developments in infrastructure on the continent. In a 10 year period there has been remarkable „tangible" economic progress. The Human Development Index (HDI), an index employed by the UNDP to measure effectiveness of overall human development, indicates that Ethiopia had the third fastest average annual HDI growth rate in the world, between 2000 and 2010, (UNDP, 2010). From a sparse city and literally a non-existent skyline, Addis Abba now resembles one of Africa`s newest and fastest growing metropols. Ethiopia represents a largely positive outcome from a Sino-African engagements and China`s interest in Ethiopia is not natural resources but the strategic nature of the country. The country forms a highly strategic link

between Muslim North Africa and the Christian South and is Africa`s second most populous nation making it a lucrative market, manufacturing hub and base for Chinese companies. Ethiopia does not form part of the study but the country highlights China`s spill over effects on African governments. Going forward, such spill over effects and global developments in China`s resource acquisition drive are affecting national strategies, producer/buyer balances and at times have negatively affected Beijing`s ambitions. It is gainful to study Sino-African resource investments and affiliations through aggregate approaches that examine China`s overall global impact on resource markets apace with direct bi-lateral proceedings. The report will initially focus on Sino-African resource engagements and affiliation before addressing China`s remarkable impact on key global resource markets.

In order to address some of the issues raised, the report utilises various data sources, China Daily, China Mining.org, the World Bank, International Monetary Fund (IMF) and other less formal sources. Disparity among sources is expected, given the sensitivity, complexity and diversity of the African mining and oil industries. The study analyses events and developments in Angola, the DRC, South Africa, Guinea, Zambia and Zimbabwe and critical developments on China`s domestic front that are impacting global mineral trade. The study aims to answer the following questions among others:

In terms of legislation, research questions investigate the following aspects:

- What are the implications of empowerment and indigenous ownership laws on Sino-African mining investments on the continent, more importantly, do they serve Chinese strategy?

In terms of China`s domestic activities, research questions investigate the following aspects:

- What does China`s growing demand mean to global prices, global trade relations and supply going forward?
- How has China`s domestic mining industry responded to rising demand, what impact has China`s fragmented steel industry had on global iron ore trade?

In terms of the resource investments, research questions investigate the following aspects:

- What are some of the distinctive aspects that set apart Chinese approach to investments/business from traditional practice?
- Why African governments/regimes are choosing to engage with China

1.2 Research Theoretical Framework

The research is based on the discipline of mineral economics. Mineral economics draws from theories in various fields mainly the discipline of economics and the supply and demand theory in investigating market behaviour. Fundamentally, mineral economics investigates the overall effects of policy in the sustainability of the global mining industry. "It investigates and promotes understanding of economic and policy issues associated with the production and use of mineral commodities" Tilton and Gordon (2008 p. 4). This assessment of the effectiveness of policy and practise constitutes the focal area of the study.

Mineral economists regard mineral resource stock as a form of capital and regard Harold Hotelling`s 1931 publication, 'The economics of non-renewable resources' as the '*vade mecum'* of the discipline of mineral economics. Hotelling draws a direct link between resource stocks in the ground and money as similar forms of capital, therefore the value of a resource in the ground must rise at the market rate of interest. From Hotelling's rule it would follow that producers would mine optimally to realise maximum profits and this conservative

approach links in well to conservationist concerns. Economically this approach is questionable, if China`s demand is pushing resource prices to current historical highs, is there room for optimal extraction and is overexploitation justified on the part of resource rich nations and mining firms? Kronenburg (2008) concludes that a complete analysis of the 20th century indicates there has an overall downward trend in most resource prices, with increases and decreases in price at various periods but general downward trend. Resource investment decisions and activities are based on costs of capital, economies of scale, and risks imposed by supply and demand shifts Bradley (1979). Bradley asserts that the role of 'man-made' capital has been neglected as academics have investigated natural resource stocks as forms of capital. The assertion is more useful and accurate in assessing how China is affecting resource trade and resource investment psyche and why African countries are now able to gain value from resource stocks that could not be have been viewed as capital prior to China`s capital injection.

1.3 Research Methodology

The research was mainly 'desktop' and exploratory in nature, utilising secondary research such as published material/data, computerised data bases and case studies through the internet. The study is exploratory in that it seeks to provide an increased understanding of emergent challenges and effects of China`s resource demand from a Sino-African and global market perspective. Exploratory research is characterised by a lack of earlier models and supporting theories and aims to describe an 'exceptional' character that can perhaps not be defined by existing theories, Routio (2007). China`s resource demand, approach to resource investments, resource acquisition strategies and overall effects on global mineral markets in many ways are anomalies. Furthermore, there is not a single 'standalone' theory/model that

accurately summate China`s effects on the world at large. A deeper understanding is required that is not restricted by previous studies and theories but aims to increase subject knowledge.

1.4 Research Limiting Conditions

The non-disclosure nature of most deals in mining agreements means that in most cases it is difficult to obtain accurate information. The major publicised deals such as the recent $877 million deal between the state-owned Jinchuan Group and Wesizwe Platinum of South Africa, the initial $2 billion Sino-Angola oil backed loan and the failed $9 billion Sino-DRC copper cobalt swap are to some extent more transparent and information accessibility is easier due to their historic and political significance. The majority of deals of 'less significance' lack disclosure and detail, and this was one of the main limitations in the study. Consistent with this assertion, some deals that are announced in some cases fail to materialise and the closing of these deals and final outcomes are not available in the public domain.

The report will not utilise FDI data and inflows as the major parameter in assessing Sino-African resource agreements. The principle aim is to investigate the broad range of factors affecting Sino-African resource investments and some of the 'indirect' effects China is having on key markets and the status quo. The reasons for this include the inaccuracy, complexity and limitations of restricting Sino-African studies to FDI data. Kaplinsky and Morris (2010) highlight some challenges in analysing Sino – African FDI. Firstly estimates of Chinese FDI inflows are highly inaccurate due to weak recording practices; secondly, there are major differences between official figures from the Chinese Ministry of Commerce database (MOFCOM), the UNCTAD and independent researchers. The report does not employ FDI as the sole 'accurate' parameter in measuring strengthening Sino-African links/trade but other discreet and indirect developments emerging from China`s resource demand that may not be as quantifiable as FDI.

1.5 Literature Review

1.5.1 Historical context of Sino-African cooperation: the role of infrastructure

Moritz (1982) pointed out that Chinese interest in Africa`s natural resources began as early as 1970, with the $412 million interest free loan in the construction of the Tanzania-Zambia Railway (TAZARA), from 1970-1975. The 1,860 kilometres line connected the copper cobalt belt of Zambia to Tanzania, hauling up to 300 000 tonnes of copper with as much as 13500 Chinese workers sent to Africa for the construction activities. The link between resources and infrastructure has remained one of the key drivers to increased Sino-African cooperation as China requires infrastructure to enable bulk transportation of resources to meet its growing economy. The Sino-African link is driven by economic motivations and trade relations (Taylor, 2005); and Africa`s resource wealth is vital in China`s economic growth. According to the 2009 BP Statistical Energy Survey, Africa had proven oil reserves of 117.481 billion barrels at the end of 2008 or 9.49 % of the world's reserves. Hosting about 30% of the globe`s mineral reserves, 40% of gold, 60% cobalt and 90% of the world's PGM (Platinum Group Metals) reserves. Besides PGMs, it is within the bulk industries, mainly iron ore and copper-cobalt that Africa holds potential. West Africa, Zambia and the DRC as major producers are becoming major players in China`s resource requirements. China is expected to increasingly turn to Africa for its iron ore requirements. The iron ore market dynamics at large are important to China. The iron ore market is the second biggest commodity trading market in the world, valued at $150 billion; infrastructure and political hurdles have meant that Africa accounts for only about 2%, although holding 20% of the world's resources (Chinamining.org, 2011).

Synergistic relationship between bulk mining and infrastructure development led to significant economic advantages, allowing expansion of existing projects and development of additional projects (Fauconnier, 2004). For mining to be economical and for the

development of existing reserves there is a requirement for extensive rail and port infrastructure, most African countries have fallen short in this regard (Table 1). These projects require funding as the host governments cannot provide funding.

Table 1: Infrastructure requirements of major deposits in Africa

Resource	Measured Reserve	Required Infrastructure
Faleme Iron Ore Deposit, Senegal	260 million ton	Port near Dakar 741 km railway line 430 km upgrade of existing line
Nimba Iron Ore Deposits, Guinea	300 million ton	Port facilities 750 km railway line 450 km upgrade of existing line
Belinga Iron Ore Deposits, Gabon	560 million ton	230 km railway spur 340 km upgrade of Libreville Line
Moatize Coal Deposit, Mozambique	1.5 billion ton	Port Facilities 575 km of railway line

Source: (Fauconnier, 2004)

Similar situations are prevalent in Angola, DRC, Nigeria, Zimbabwe and other African countries holding lucrative deposits but lack infrastructure and investment. For African countries engaging with China has been and will be important in reducing such infrastructure deficit and constraints. Africa`s overall infrastructure deficit in monetary terms is estimated to stand at $1.5 trillion and the African Development Bank (AFB) provides that African governments cannot finance the required developments without foreign direct investments, (Campbell, 2010). On the large part African governments rely heavily on FDI for infrastructure and China is effectively capitalising on this dependency by linking resource trade to infrastructure and development. China has become the primary infrastructure

financier in Africa through China Exim Bank which offers loans through various cooperative deals that may include trade deals, arms deals and student exchanges, Bosshard (2007).

1.5.2 General views on Sino-African trade relations

China has maintained that it is sincere in assisting African countries, $1.42 billion of African debt was cancelled and $1.3 billion of relief was announced with particular focus on roads, ports, health care and technology transfer (China Daily, 16 May 2007). Since the late 90s China has focused on the 'going global' with strong economic motivation and 2006 witnessed the birth of the 'win-win' philosophy at the Beijing summit of China-African Cooperation Maswana (2008). This development has contributed to a renewed interest in Africa. Tull (2006 p. 5) adds an insightful view on current renewed interest in Africa, "The renewed interest in Africa is best described as a reflex that is triggered by China`s strong presence in the region." China`s interest in Africa and the increased global investment is benefiting the continent. Poverty on the African continent is on a downward trend, and incomes are generally on the rise, contrary to UN findings Payi (2011).

Views are divided if increasing trade relations are an opportunity or threat to African economies. Trade between Africa and China is largely unbalanced in favour of China, (Taylor and Williams, 2004). China`s involvement with African countries provides opportunities for countries such as South Africa that have strategic advantage in areas such as mining, Van der Wath (2004). Traditional mining patrons have in most cases failed to provide technology transfer to African countries. An early observation from agreements is that Chinese investments will benefit African economies, as they incorporate skills transfer and technology to African countries, Alden (2005). Political scientists attribute China`s ascent in Africa to 'hard power', the use of national economic and political power to coerce

and get its way through premeditated and orchestrated state policy, Khanna (2008). Soft power on the other hand represents ‘attraction’, with no coercion or ‘forceful’ approaches. Soft-power tools including diplomacy, economic assistance, and communications (Joseph, 2011). Chinese investment is unique and classifying it as investment or aid is difficult. It is impossible to unbundle what constitutes Chinese ‘aid’ and ‘FDI’, Ajakaiye et al (2008). It becomes increasingly debatable if China is employing hard power tactics in engaging with African countries, on the large part African countries are free to choose to engage with China and China provides platforms of communication through summits and forums, economic assistance and frequently engages with African heads of states. African countries on the other hand cannot simply ‘carbon copy’ China`s approach to economic growth. China has a top down approach; the central government can pass decisions unopposed and filter them through the economy, Africa requires grassroots growth, Bekker (2011). Brautigam (2010) is in agreement that African countries should not copy China`s policies but aim to adapt China`s program of experimentation and China is a partner that provides African countries with policy space without traditional conditionalities. There is also a sensitivity and long approach to Chinese interests in Africa. China provides for politically sensitive projects with firms seeking to build long-term presence while western firms are driven by short term profit objectives and shareholder concerns, Kaplinsky and Morris (2010).

1.5.3 China`s resource demand providing policy space for resource rich governments

Following on from the observation by Brautigam (2010) that China is providing African countries with a platform for new developmental policies, this trend is on a global scale as governments are pushing to capitalise on high prices. State ownership in resource sectors is increasing and disincentives for ‘out-of-country’ beneficiation and expropriation of mining rights, (Lee and Erasmus, 2010). The authors provide examples of Brazil and proposed tax on shipments of iron ore, India and windfall tax on ‘super profits’, Ghana and increasing

royalties on mining and Russia imposing new export duties on nickel and copper. This effect is also taking place in the DRC, South African and Zimbabwe with the state becoming increasing involved in mining ownership, regulation and value addition drives. Since this study represents one of the few attempts to investigate the current and potential impacts of increasing state participation and the impact of indigenisation reforms in resource sectors on Sino-African relationships, this provides an important area of analysis.

Transformation in South Africa is becoming an increasingly important topic, with BEE (Black Economic Empowerment) initiatives. Jajbhay (2005 p.1) underlines the objectives of BEE, "Those who were previously economically marginalised must be included in all aspects of the economy in an equitable inclusive manner through effective policies and programs." The platinum industry is one of the most affected, deals in South Africa's platinum industry have resulted in the transfer of US$4.8 billion worth of assets to previously historically-disadvantaged South Africans and employee groups, Ross (2007). It is essential to investigate how China has responded to increasing empowerment and indigenisation reforms. Zhu (2010) reports that Chinese company, Sinosteel insisted on majority control of the ASA chromite mine and ferrochrome processing facility in Limpopo South Africa. The adherence to the stipulations of the BEE legislation would have required a local enterprise to control mineral rights at the chromite mine and reduced Sinosteel's stake to 44%. Sinosteel after some negotiations with the South African government 'trounced' the BEE regulations. This represents effective and clear circumvention by China and calls to questions the effectiveness of African developmental policy.

1.5.4 China`s ability to influence global resource availability and material security

Homer Dixon (1999) identified demand-induced scarcity as one of the main challenges facing global resource trade, resulting from increases in total population and changes in consumption patterns, as is happening in China and India. In 2009, China`s urbanisation rate

stood at less than 46% compared to the 90% of developed nations, it is estimated that a 1% increase in the country`s urbanisation rate will lead to 10 million rural resident moving to towns and leading to major increases in resource consumption, People`s Daily Online (14 December 2009). This will mean that the global supply of natural resources, mainly energy sources and industrial metals must be increased to meet domestic events in China. Furthermore, Chinese demand and high industrial consumption have contributed to global concerns on material security. "Material security concerns the access to raw materials to ensure military and economic sufficiency, its importance has increased due to limited short term availability of some raw materials, large increases in raw material prices, oligopolistic industry structures and dependence on a limited number of countries as sources of materials", Morley and Eatherley (2010 p.7).

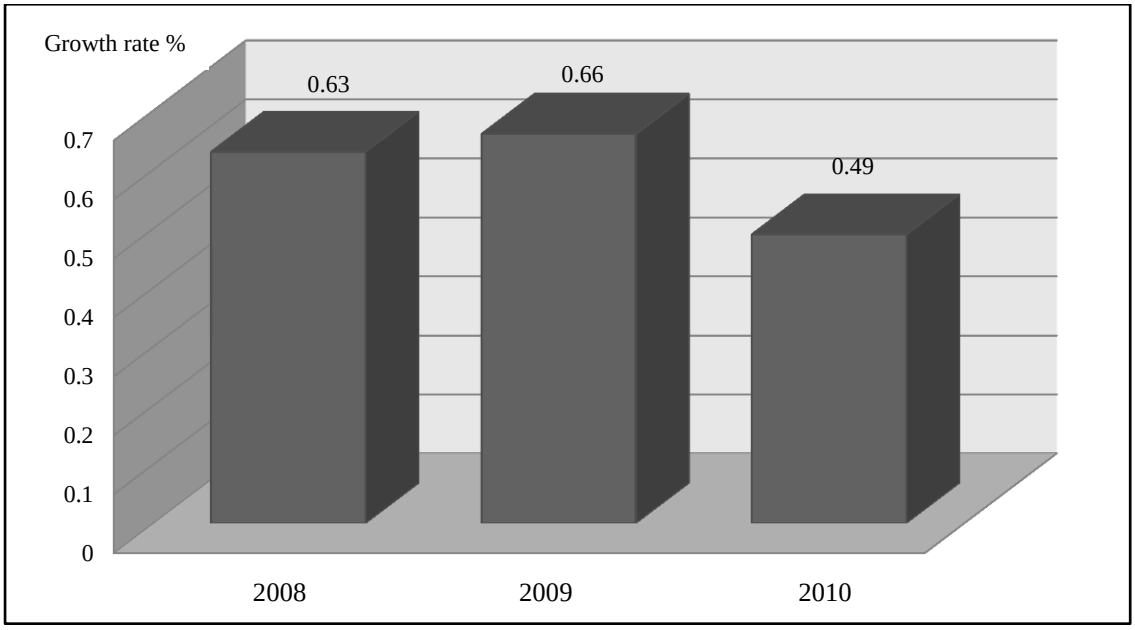
Material security concerns are prevalent in energy markets and various mineral classes but the rare earth element (REE) industry has been one of the most contentious. China has less than 57% REE deposits but accounts for almost 97% of production (Hurst, 2010). This means that China can largely dictate availability of REEs by imposing export quotas to the rest of the world who rely on 100% imports from China, namely the U.S., Japan and the EU. Overall concerns and precautions by industrialised nations of China`s increasing ownership of global reserves are amply demonstrated in literature. The failure of the $19.5 billion deal between Chinese SOE Chinalco and Anglo-Australian miner Rio Tinto epitomised rising western concerns about China`s growing influence, Chinaminingorg (June 15 2009). This was a precaution by Rio Tinto to prevent China dominating the iron ore market given Rio Tinto`s 25% global iron ore market share, Fontevecchia (2010). China`s foreign mine ownership is also threatening food security in Australia. Australia`s Foreign Investment Review Board estimates that 83% of Australia`s mining industry is foreign owned and that huge profits go

overseas; furthermore Chinese coal companies are buying prime agricultural land in New South Wales, MercoPress (1 July 2011)

1.5.5 Assessing sustainability of China`s resource consumption rates

There are concerns about China`s unsustainable levels and patterns of resource consumption, particularly in the industrial sectors. Despite low per capita consumption of the average population, China puts heavy pressure on resources due to the commodity-intensive manufacturing sectors, World Watch Institute (2006). China`s construction industry is now the largest world and combined with rising incomes and standards of living, this will put increasing pressure on resource consumption. This unsustainability in consumption has been highlighted by the rapid increases in consumption rates. In 2009 China`s fluorite consumption was 2.8 million tons, up 8.2% from 2008; and in the first half 2010 there was a 10% increase in consumption over the same period the previous year to 1.93 million tons, Wood (2010). Oil consumption is another area of concern; car ownerships are rising at a rate of 14.5% per annum and auto fuel consumption at 10.8% per annum, Sinopec (2005). Population growth is also a useful indicator of future consumption rates. CIA data for 2011 forecasts that while average global annual growth rates are currently estimated at about 1.4% per annum, China is predicted to have a negative growth rate. There was a negative growth rate of -25.76% in 2010, and slight increase of 4.76% in 2009 (Figure 1).

Figure 1: Graph of China population growth rates 2008, 2009, 2010



Source: (CIA, 2011)

China`s 1.3 billion population despite declining growth rates has huge impacts on sustainability and resource consumption. Population and aspirations are the main drivers of commodity consumption (Cameron, 2008). China`s rising resource demand cannot be sustained by China`s domestic mining industry, global producers must expand output on the back of high resource prices and this creates vast opportunities for resource rich governments.

1.6 Conclusions

Previous research appears to divided on the potential impacts and benefits of China`s resource investment in African. The majority and most recognised academic research into Sino African actvities was conducted in the period 2005-2008 and there is a requirement for new insights into some of the more recent developments. Key points that emerge from existing literature are that China is affecting global markets in profound ways and that resource rich governments are overhauling existing legislation to capitalise on rising demand. Concerns are rising on China increasing foreign mine ownership and developing and established mining jurisdictions are cautious about this development. From an African

perspective, the impacts of policy changes and the much debated indigenisation efforts on China`s interests are a new development that require further investigation. More importantly how is China responding to such policy changes? Is there a possibility of circumvention of such legislation? The dynamics at play in Sino-African engagements are very complex and impact the role of multinational institutions in Africa, investment psyche and challenge existing perceptions. There is a need to address emergent, less publicised and implicit features of Sino-African engagements, for example migration. Similarly global mineral markets are being reshaped by China`s demand and policy, particularly the REE and iron ore markets. These areas require this require further investigation.

1.7 Chapter Outline

To address the research questions proposed and to the fill the observed knowledge gap, the study is divided into six chapters outlined below:

Chapter 1 – Introduces the aims and objectives of the study. The chapter consults current literature to investigate China`s resource requirements. Mineral Economics provides the theoretical framework for the study.

Chapter 2 – Contextualises China`s unique approach to business/investments. It analyses growth of the Chinese economy as the key driver of China`s resource acquisition strategy and key developments in the Chinese State Owned Enterprise (SOE) as the vehicle of the central governments objectives.

Chapter 3 – The chapter analyses how China has approached investments in Zambia, West Africa and Niger regarding copper, iron ore and uranium and the role of capital in China`s ambitions. The chapter concludes by investigating the outcomes of China`s resource

acquisition strategies in Angola and the DRC and how China is challenging the role of the IMF in Africa.

Chapter 4 - This chapter investigates the 'spill-over' effects of China`s resource demand in in Angola, Ethiopia, South Africa and Zimbabwe and examines other emergent challenges such as uncontrolled Chinese migration and increasing investor diversity.

Chapter 5 – Investigates how China is affecting the global mineral industry. The chapter investigates the potential for trade wars over REE availability and charts the progress of China`s domestic mining industry that has led to China`s dominance in the REE sector. The chapter assesses China`s profound impact on the iron ore industry regarding producer market power, pricing strategy and the primary role of China`s fragmented steel industry.

Chapter 6 – Presents the conclusions and overall findings of the study.

Chapter 2: *Contextualisation of 'China': Business philosophy, Economic Growth and the SOE*

2.1 Introduction

The Chinese approach to business is a complex product of culture, attitudes and methods that differ greatly from current practice. To date these unique elements have proved highly successful in meeting the country`s growing resource demand. The chapter provides a background of Chinese business culture, the growth of China`s economy as the principal driver of rising resource requirements and notable developments in the Chinese SOE as one of the defining aspects of Chinese business enterprise. While it is assumed that China`s successful resource acquisition strategy is solely based on strong capital reserves; the role of Chinese culture, astute strategy, policy and evolution of state institutions is often overlooked.

2.2 Understanding China`s Business Psyche

China`s most historical city, Shanghai, is referred to as verb in the English dictionary. "To induce or compel (someone) to do something, especially by fraud or force", Farlex Online Dictionary (2011). This statement is not to be interpreted in the literal sense but as an underscore of the tact in Chinese engagements. Shanghai is China`s and East Asia`s fastest growing economy and has largely shaped the principles of China`s unique business culture. This heritage of astuteness in business negotiations and practice is one of the keys to the success of Chinese enterprises. The Chinese negotiation style is an open ended approach, largely verbal and repetitive and Western negotiators have been caught out and frustrated. Lam and Graham (2007 pp. 2-10) have referred to this style as 'relentless' and 'leaving room for misunderstanding and misinterpretation'. American executives in oil field equipment sales where issues range from technology transfer, quantity, price and delivery have been caught out by Chinese tactics. The authors provide case studies where after verbal agreements from the previous days, Chinese business delegations raise the same questions that were

addressed in previous meetings and appear unfamiliar with preceding verbal agreements. Table 2 illustrates some of the major differences between Western and Chinese business culture and negotiation styles.

Table 2: Contrasting Culture and Approach to Business, Western - Chinese

	Western	**Chinese**
Culture	Individualism	Collectivism
	Egalitarianism	Hierarchy
	Information - orientated	Relationship - orientated
	Focus, Foreground, Object	Big Picture, Background, Environment
	Reductionism	Holism
	Content	Context
	The truth	The way, Compromise
Negotiating style		
Non task related	Short, Informal	Long, Formal
Task related	Full authority, Directness	Limited authority, Indirectness
Approach	Proposal First	Explanations first
Persuasion	Aggressive, Persuasive	Questions, Competing
Tactics	Threats, Promises, Arguments	Open ended, Offers, delays
Overall Agreement	Sequential goal, Short term	Holistic goal, Long term

Source: (Adapted from Lam and Graham, 2007)

An immediate observation is the contrast in focus and approach. This perhaps explains why the Chinese approach to business has been hugely successful in Sino-African resource engagements but will African governments realise the expected benefits in dealing with

China? These are some of the concerns raised by the IMF on the 2008 Sino-DRC $9 billion deal. (Corkin, 2007) is critical of China`s tact, especially the fact that the large scale nature of most projects neglects issues such as quality and maintenance and opens room for circumvention by Chinese companies. On the positive side it appears that China understands something that traditional Western businesses practice has failed to grasp. China has adopted a holistic approach to business; there is a perceived underlying concern about the needs of host governments, as requested by the latter. China will carry out 'glamour' construction projects from national stadiums, parliamentary buildings to 'plain' projects such as construction of dams, roads and rail. African governments feel they have parity in negotiation and their concerns are addressed. Furthermore, the long term approach of Chinese investments means that host governments are more willing to engage with China in comparison to traditional investors. China`s approach to business is a complex process, with positive and negative attributes. It is governments who understand, can navigate and contravene the complexities and perils of China`s approach to business, who will extract maximum benefit.

2.3 Growth of the Chinese Economy as the principal driver of China`s resource demand

The growth of China`s economy is heavily dependent on natural resources, from energy supply to inputs into the material intensive manufacturing and construction industries. Therefore strong economic growth serves to intensify China`s resource acquisition activities and contributes to rising requirements. China`s GDP is rising and in 2010 China became the world's 2nd largest economy after the US, overtaking Japan (Table 3).

Table 3: Gross domestic product 2010 (millions of US dollars)

Ranking	**Economy**	**(millions of US dollars)**
1.	United States of America	14,582,400
2.	***China***	5,878,629
3.	Japan	5,497,813
4.	Germany	3,309,669
5.	France	2,560,002
6.	United Kingdom	2,246,079
7.	Brazil	2,087,890
8.	Italy	2,051,412
9.	India	1,729,010
10.	Canada	1,574,052

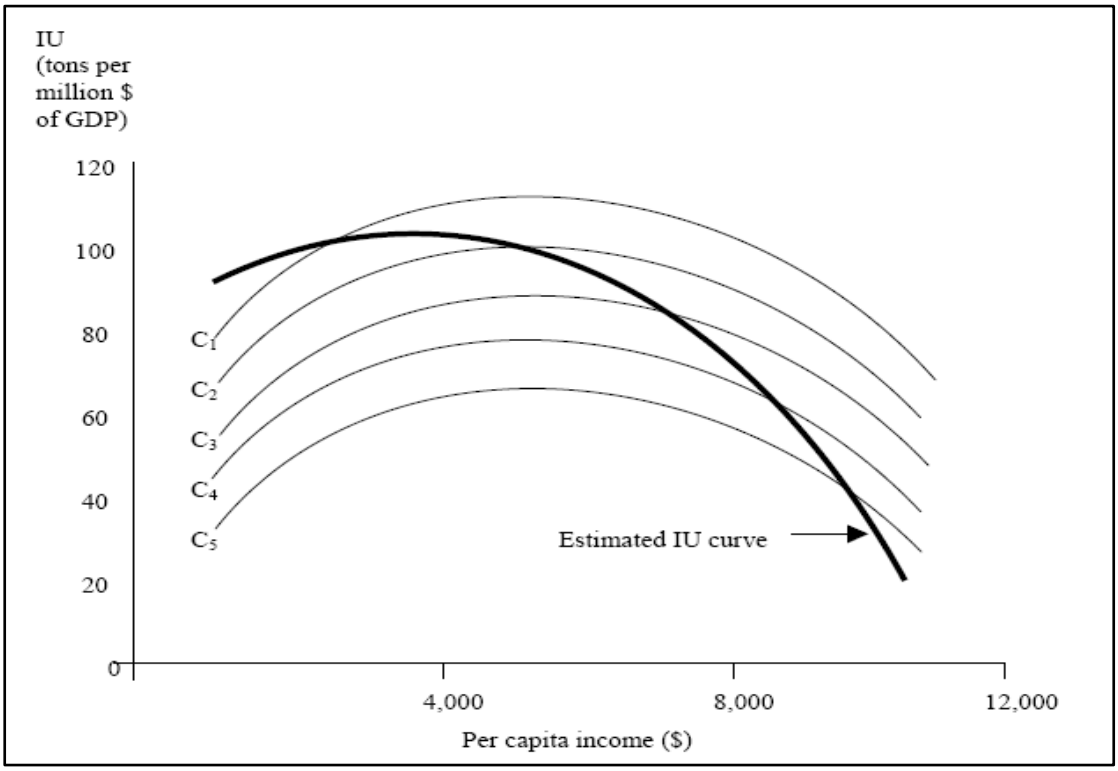
Source: (World Bank, World Development Indicators database, 2011)

Pre-1978 China had annual growth rates of 6 % per annum; post-1978 reformations have seen an average growth rate of 9 % per annum, IMF (2010). Between 1995-2004 China's real GDP growth averaged 8.9 percent per year, and 12.2 percent between 1999-2004, compared to 4.1 percent for the world and 2.6 percent for the United States during 1995-2004, IMF (2006).

China`s resource demand must be investigated in the context on the country`s high economic growth rate. China is now the world`s biggest importer of iron ore and copper and second biggest importer of crude oil and the largest market and exporter of automobiles ahead of Germany, Gribben (2010). In summary, China`s resource demand is being fuelled by urbanisation and manufacturing. Rising urbanisation is a necessity for continued economic growth for the simple reason that major cities are the hubs of economic development. Without high urbanisation levels, Chinese cities such as Guangzhou, Shanghai and Beijing

cannot sustain high levels of industrial output necessary for strong economic growth. Urbanisation translates into high capital and material flows and the construction industry as one of the highest material intensive industries, it`s size and growth is a useful indicator of economic growth. China has more than doubled the size of its construction market in a decade and is predicted to overtake the United States as the world's largest construction market by 2018, with an estimated value of $2.4 trillion, People's Daily Online (2009). China`s resource demand is predicted to continue to grow. In forecasting future resource consumption, the intensity of use hypothesis can be used. The intensity of use of a metal/mineral depends on economic development as reflected by per capita income Malenbaum (1973). This hypothesis proposes that modelling the ratio of metal consumption to national income overtime will result in an inverted 'U-Shape' curve (Figure 2)

Figure 2: Intensity of Use Curves



Source: (Tilton, 1990)

As developing countries progress from agrarian to developed countries, intensity of metal/mineral use rises as the needs for roads, houses and vehicles rises. Once demand is met, intensity of metal/mineral use drops as high tech industries and service industries gain prominence. Using this hypothesis, China is at the early medium stages of development. China`s current consumer focus is largely material intensive, with fast growing manufacturing and construction sectors. The continued growth of the manufacturing sector and the ambitions of China to lead the next industrial revolution in hybrid vehicle technology should further intensify metal/mineral intensity of use.

Government policy can play an important part in intensity of use and China current policy is aimed at improving the service sector. China is the world's second largest economy but it has a low level of economic development and an underdeveloped service sector. In 2010 China's service industry accounted for 43% of the nation's GDP, lower than the 75% percent in the United States and 60% in Europe; the service sector is now China`s key source of FDI, accounting for 46.8% of China`s FDI, China Business News (2 March 2011). China`s current national policies are aimed at attracting FDI and innovation in the highly technical service sectors simultaneous to growth in resource intensive industrial sectors. The intensity of use hypothesis assumes that growth in the national service sector corresponds to a maturing economy and a decline in material intense industries. China is aiming to increase output in material intensive industries and simultaneously mature the service sector and this is highly feasible. China has been able to target FDI inflows to specific domestic industries, with focus on heavy construction and manufacturing industries in the 1990s to the current regulations that favour investment into high-tech service industry. China`s economic growth and GDP per capita are an anomaly. On a GDP per capita, China is a poor country. China`s GDP per capita is $7,400 per person, ranking China at number 128 out of 230 countries, CIA (2010). Forecasting China`s consumption levels resource intensities through standard hypotheses is

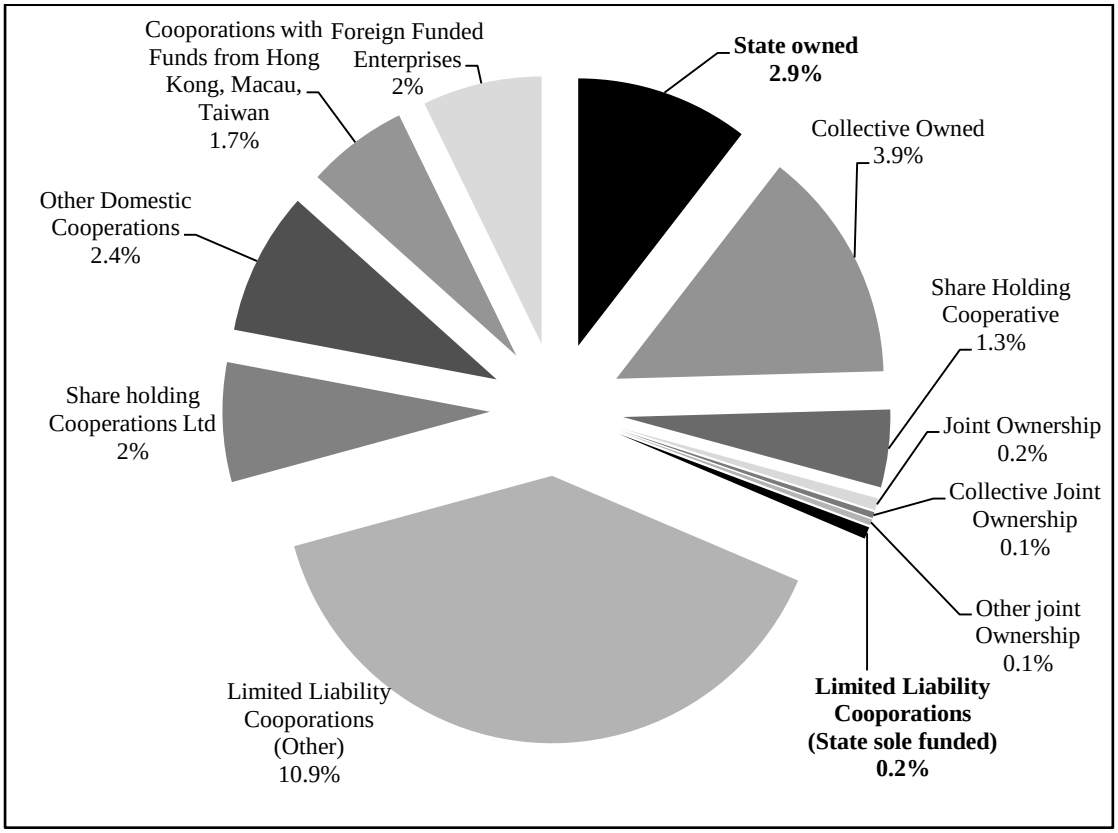
tricky but the large population size, appreciating income levels, rising industrial output and a stable political system are good indicators of point to intensified resource consumption.

2.4 The evolving role of the SOE China`s economy

Chinese state owned enterprises (SOEs) are the vehicles by which China`s central government executes state strategy at all levels. The SOE is therefore one of the distinctive components of Chinese economic growth and resource acquisition drive. The Chinese SOE embodies the core values of Chinese business philosophy and conduct and various reformations from the 1980s have produced a largely successful product. The Chinese SOE has been undergoing notable changes that will ensure sustenance and competitiveness; it is not a static organisation as commonly perceived. Recently, the Chinese Communist Party (CCP) has adopted a forward looking strategy that aims at recruiting youthful skill into the SOE ranks. Chinese state-owned companies typically hire fresh student graduates and seldom hire experienced professionals from other companies with some exceptions with senior management-level recruitment, Wang (2011). This approach is astute in several ways. Firstly the state is able to recruit high calibre employees who immediately align themselves to various strategies, directives and the 'Chinese' approach to business, the holistic and complex business methods that differ from Western establishments. Secondly the government has the financial resources to ensure that start-up salaries in the public sector are higher that the private sector, and for Chinese youth, joining an SOE is a logical and financially motivated decision. Thirdly there is attractiveness about the Chinese SOE; the success of China`s economy has largely been attributed to the successful policies implemented by the CCP through the SOE and to a large extent, the SOE represents a triumph of Chinese ideology. Lastly this approach secures longevity and a continuation of state objectives through the youth but at the same time ensures that the SOE can adjust to modern demands and continue reformation in line with China`s requirements. Since the 1980s the Chinese SOEs have

undergone various reformations. One of the major developments has been a shift in ownership structure and a reduction in number. Contrary to popular misconception that the state is the sole owner of most SOEs, the National Bureau of Statistics of China provides that in 2008 'sole' state funded corporations constituted a minor 0.2 % of all corporations in China. (Figure 3)

Figure 3: Chinese Corporations by Status and Recognition (2008)

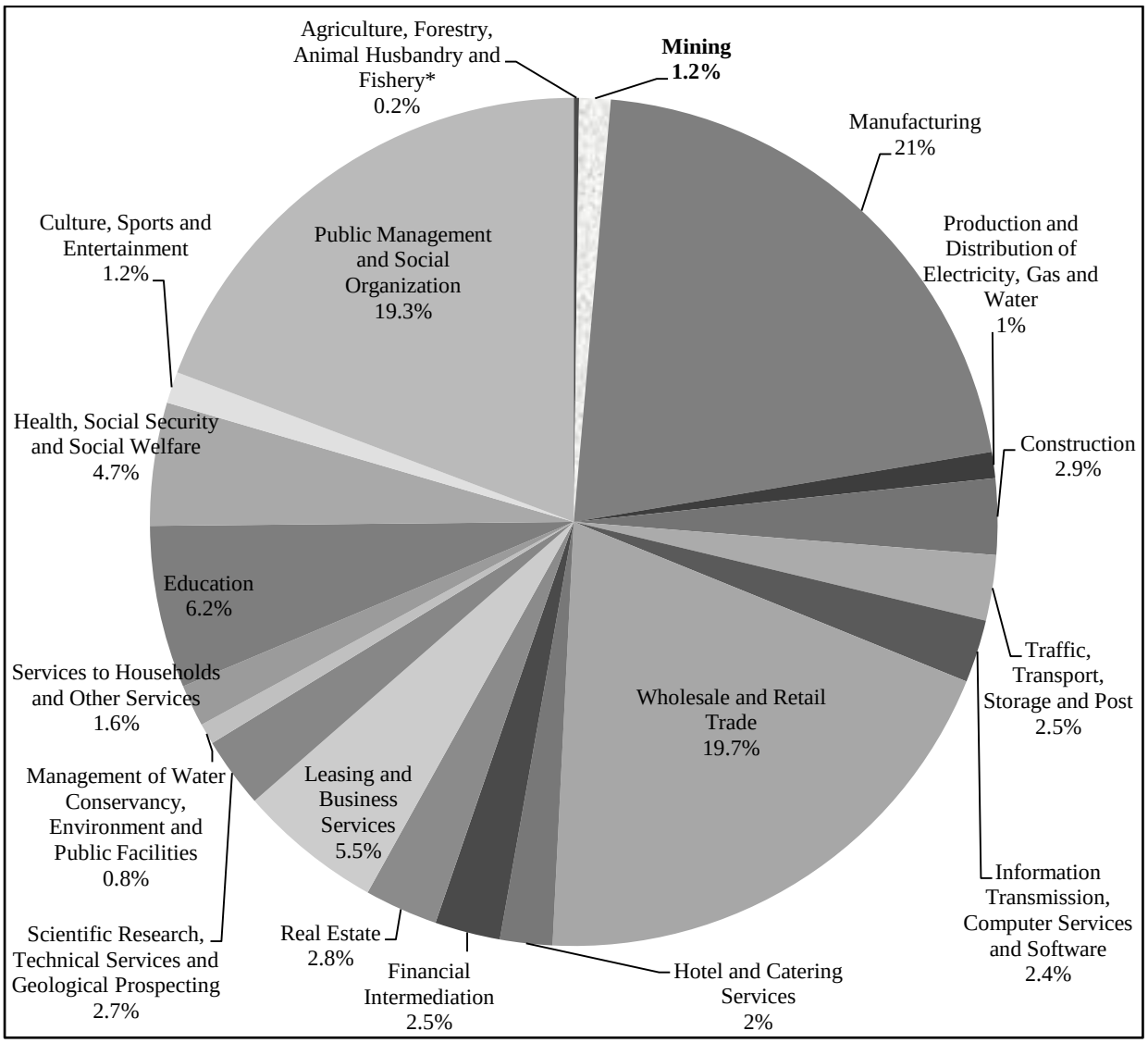


Source: (National Bureau of Statistics of China, 2009)

The reduction in number has been accompanied by an increase size is driven by efficiency and profitability concerns. With almost 5000 SOEs going bankrupt year on year between 2002 -2009, the central government has dissolved inefficient enterprises and merged efficient performers to create hybrid enterprises that operate on economies of scale, China Business News (14 September 2010). This has led to few but large organisations and mostly in capital intensive industries. Chinese SOEs are larger than conventional enterprises by a factor of 13

and control an estimated 30% of secondary and tertiary assets and over 50% of industrial assets, Xu (2010).

Figure 4: China, Number of Establishments by Sector 2008



Source: (National Bureau of Statistics of China, 2009)

China`s national oil companies (NOCs) now rank as some of the world`s largest organisations. Logically and strategically Chinese SOEs expand their domestic and core skills into African resource sectors. Jinchuan Group Limited (JNMC) as one of China`s most established non-ferrous and precious metal mining companies has pursued cobalt, copper, nickel and platinum investment in Africa. Sinopec, China National Offshore Coorporation

(CNOOC) and PetroChina have invested in oil projects and China Metallurgical Group Corp (MCC) as one of China`s most diversified SOEs has followed suite, investing in textiles, cement, water and mining projects across Africa.

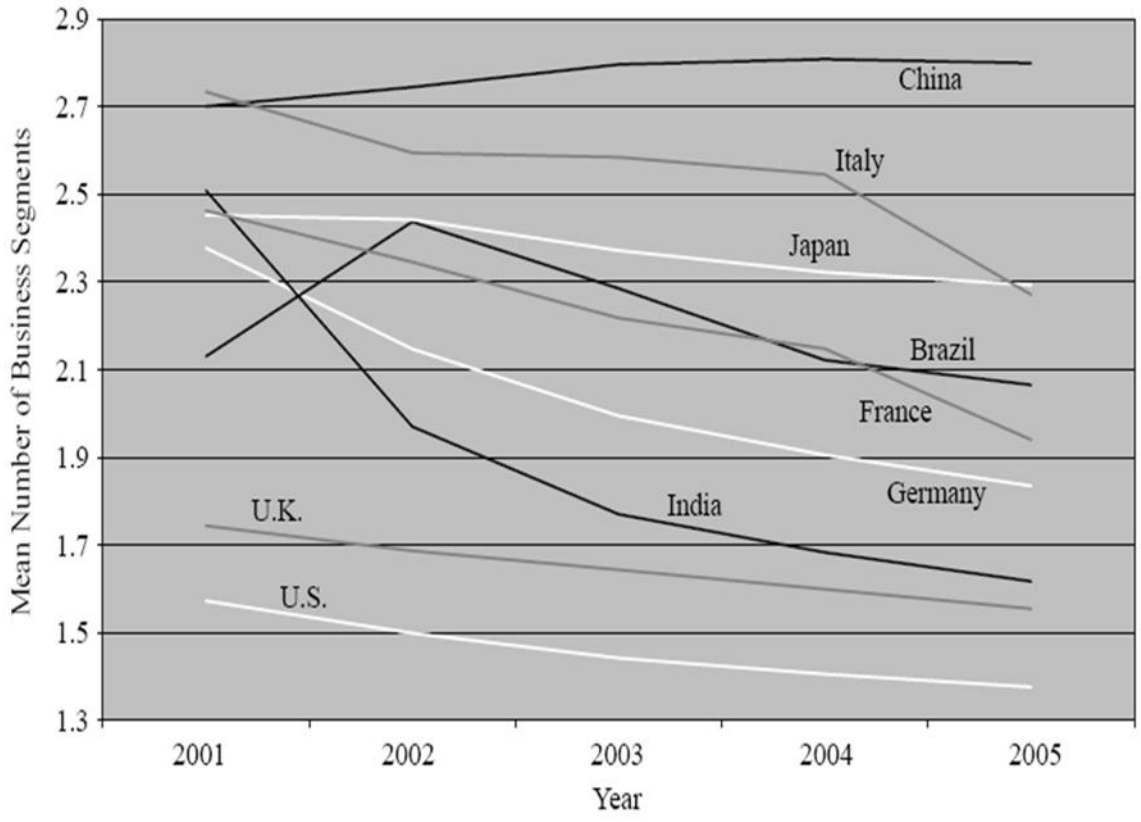
2.4.1 Chinese SOEs: Institutional vs. Economic considerations

Lam and Graham (2007 p.44) have referred to China as 'one of the greatest economic and political experiments in history' with the interaction of the dual economic system of socialism and capitalism and the one party state. All these aspects are integrated into State Owned Enterprises that are just as experimental and embody China`s unconventional approach to economic growth. There is a strong institutional aspect to Chinese business as a whole that is not necessarily driven by profitability in strategic industries. State and provincial governments encourage firms to enter and diversify into strategically important industries, classified as 'pillars of industry' and firms in capital intensive industries have seen gross profit margins drop and even as much as 60% of organisations operating at losses, Fan et al (2007). From a resource perspective, the county`s resource demand for sustained economic growth has translated into mining and oil enterprises that are highly competitive, as they can operate at losses and low profit margins and diversify as required by state and provincial governments.

For example, China Metallurgical Group Corporation (MCC) is one of China`s largest multi-disciplinary SOEs specialising in EPC (Engineering, procurement and construction). The company has diversified into industries that are classified as strategic, 'pillars of industry' by China`s central government. Core activities include mining and construction, paper manufacturing and real estate. This would generally be viewed as unrelated diversification in standard business circles and would not make much business sense. Western companies generally diverse into related fields and acquire specialist skills in those areas. Fan et al

(2005) observed that high levels of diversification are an underlying characteristic of Chinese businesses and while most countries have a discernible downward trend in diversification Chinese firms appear to be on an upward trend. In 2005 while enterprises in most countries averaged fewer than 2 business segments, Chinese firms were averaging almost 3 (Figure 5). The authors hastily pointed out that this can be attributed to the fact that emerging markets have higher rates of market failures so developing countries would logically have higher levels of diversification. India and Brazil however oppose this line of thought with diversification rates less than Japan and Italy and comparable with Germany and France.

Figure 5: High Diversification in Chinese Enterprises



Source: (Fan et al, 2005)

High levels of diversification mean that Chinese companies are better placed to capitalise on developments in key industries. Provided that SOEs are concentrated in capital intensive industries and capital intensity has been consistently strengthened by the Chinese

government, China`s resource acquisition drive is well supported. From a Sino-African perspective, Chinese SOEs bare corollary to these findings with respect to the size of the enterprises, scale of operations and size of investments. Chinese SOEs such as Jinchuan Group Limited (JNMC), China Metallurgical Group Corp (MCC) and China Petrochemical Corporation (Sinopec) have invested in some of Africa`s most historic resource deals. By targeting strategic industries, heavily investing in these industries, operating at low profit margins and using the state powers to negotiate deals, the Chinese SOE is clearly not a standard enterprise. It integrates Chinese philosophy and strategy and is proving highly successful in meeting China` resource requirements.

2.5 Chapter Summary

The chapter contextualised the relationship between various aspects of Chinese culture, strategy and business philosophy and the country`s resource demand and economic growth. China`s relationships with African governments, other resource rich nations and other key players in resource markets must be investigated against this background. The chapter introduced the fact that Chinese business negotiation style is essentially the opposite of Western approaches to business that are widely accepted as benchmarks. The Chinese approach is largely open ended and embodies values that are seemingly opposite to Western values. This approach has been hugely successful in Sino-African resource engagements but the challenge is that African governments may not realise the benefits anticipated due to the open-end nature of agreements. However China appears to understand something that traditional Western businesses have failed to understand. There is holistic and diplomatic approach to business and projects can be geared to meet the needs of host governments, as requested by the particular host government.

China`s strong and consistent economic growth is the principal driver of Chinese resource demand and there are no indications that this demand will let up in the foreseeable future. Using the intensity of use hypothesis, China as a developing country currently has a rising intensity of metal/mineral use with requirements for roads, housing and vehicles. It is assumed that once demand is met, intensity of metal/mineral will drop as high tech and service industries gain prominence. China`s government has been investing in the lagging high-tech service industry and attracting FDI into these sectors. Therefore forecasting China`s consumption levels resource intensities through standard hypotheses can be inaccurate. The role of state policy is an important determinant is not taken into account by the intensity of use hypothesis. For China, the service industry attracting investment can potentially grow simultaneously to the manufacturing, construction and other industrial sectors.

The chapter concludes that the Chinese SOE embodies the core values of Chinese business philosophy and strategy. There is a ‘self-sufficiency’ and ‘self-serving’ nature to Chinese SOEs that meets state objectives. The Chinese SOEs are recruiting younger employees that embrace existing philosophy but also introduce new ideas, the numbers of SOEs are reducing in number but size is increasing as the state injects more capital into strategic industries. The dissolution of inefficient organisations and merging of organisations to form larger more efficient organisations serves the state`s interest for large organisations that can meet domestic requirements. China`s interests are highly economic and strong capital reserves facilitate establishment of enterprises that have high diversification factors, have strong government backing not solely motivated by profit making. This clearly places Chinese SOEs at an unparalleled advantage in comparison to conventional enterprises.

Chapter 3: *China`s strategies to resource investments in Africa*

3.1 Introduction

China`s resource demand to sustain its growing economy, support the growing middle class and the expanding industrial sectors has meant that China is increasingly turning to Africa to meet its raw material requirements. The economic relationship between Africa and China can be divided into three sections: China's drive for resources such as oil, minerals, and food; new export markets for its products; and new investment opportunities for Chinese companies, Van de Loy (2006). China must therefore devise effective strategies and means to secure resources and markets in strategic African countries.

While there is a central element of access to capital and strong financial reserves, China has endeavoured to meet its domestic resource demands through well-orchestrated investment strategies. The chapter explores China`s complex network of aggressive, contrarian and passive approaches that are challenging existing approaches to resource investments and the role of multinational institutions such as the International Monetary Fund (IMF).

3.1 The role of 'man-made' capital in resource investment decisions and activities

Resource investment decisions and activities are based on costs of capital, economies of scale, and risks imposed by supply and demand shifts, Bradley (1979). The role of 'man-made' capital is one of the critical factors that enable exploitation of natural resource stocks. Bradley argues that the role 'man-made' capital has been neglected as academia has considered natural resource stocks as forms of capital. China has managed to access Africa`s resource wealth through its financial reserves and ease of access to capital for Chinese companies. These resources and reserves were effectively of no value prior to expansive Chinese resource investments as China`s interests in Africa have become economically motivated.

Historically access to capital through China`s banks has been the central government's main tool in aiding the country`s industrial development. In the 1960s and 1970s, bank lending complemented the Government's production plans, with banks acting as "cashiers" for the economic program, Yasheng et al (2005). From the 1980s, China`s banking system has been dominated by four state owned commercial banks (SOCBs) and the practice of 'policy lending'; which is lending directed by central or local governmental authorities rather than based on commercial principles, Linton (2006). The Bank of China Ltd, Industrial and Commercial Bank of China Ltd, China Construction Bank Corp and the Agricultural Bank of China Ltd are China`s biggest banks. More importantly the SOCBs financed SOEs that did not have the interest or ability or requirements to make repayments, Green (2004). The state incurred heavy losses through policy lending and diversified the financial system into joint stock commercial banks, city banks, rural and urban credit cooperatives but the four SOCBs still remain the dominant banks in China and still favour SOE customers, Linton (2006).

Policy lending has remained a major directive of the state government and SOEs invest in resource projects that are in line with government objectives. Chinese mining companies' investment decisions are not primarily based on commercial principals but strong government financial backing. Logically mining and real estate also represent China`s new areas of investment as the labour market in the country changes. Labour shortages, high labour costs and inflation have seen manufacturers decided to turn to other investments for greater and easier returns, with manufacturing having profit margins of 3%, real estate at 30% and mining and financial investments generating higher returns, MOFCOM (11 March, 2011).

3.2 China`s contrasting approaches to resource investments in Africa

Frick (2002 p.13) provided that mining companies/investors were bound by unique investments constraints, "Investors cannot choose which countries they want to mine, they

have to invest where the best deposits occur; Disinvestment from a country automatically results in the forfeit of the mine, because the latter cannot be transported." Investors in extractive sectors must navigate the challenges presented by different locations to secure economical operations and supply. This section explores China`s differing approaches to resource investments in Zambia, Guinea and Niger along with the corresponding challenges.

3.2.1 Sino-Zambian Copper Investments - Contrarian Investment Approach

Pursuing an investment strategy that goes against the current views (practises) of the market is termed contrarian investing and can be highly successful during bubbles and busts, Money terms.co.uk (2011). The 2008 global recession led to decline in consumer demand in the world`s major economies and this affected mineral prices. Table 4 indicates that most minerals had major price falls and copper had the highest, a 53% price fall between 2008 and 2009. Such price falls made most mining operations unprofitable and major mining companies halted production. Zambia is the world`s 8$^{th}$ largest copper producer and Africa`s largest producer with an output of 650 000 tonnes Copper Investing News (2010). Cooper mining was hit hard and Zambia experienced a decline in Western investment as copper prices fell in 2008.

Table 4: Annual Average Commodity Price Data (2007 – 2009)

Metal/Mineral	Unit	2007	2008	March 2009
Aluminium	$/mt	2638	2573	1372
Copper	$/mt	7118	6956	3268
Lead	US cent/kg	258	209	111.7
Nickel	$/mt	37230	21111	10858
Silver	US cent/troy oz	1341	1500	1242
Tin	US cent/kg	1454	1851	1121
Zinc	US cent/kg	324.2	187.5	115

Source: (World Bank, 2009)

On the other hand Chinese companies continued to invest in Zambia`s copper industry despite low copper prices. "Chinese companies are far less vulnerable to a global 'credit crunch' because their government can instruct the state-owned banks to continue lending, even when pure market logic might dictate otherwise" , Haglund (2010 p. 2). In 2008 foreign direct investment (FDI) to developing countries fell by 30% (to $385 billion) the first such drop since the East Asian crisis of 1997, World Bank, (2009). Despite this decline, China`s outward foreign direct investment (OFDI) continued to grow, On a global perspective investment into non-financial sectors reached $41 billion in 2008, a year-on-year increase of 64%, China Daily (29 May 2009). With this approach China outperformed the market in securing tenures during the recession. When the recession had subsided, China had increased foreign mining ownership, consolidated supply security and developed stronger links with African countries during the economic downturn. Chinese mines in Zambia produced an estimated 150 000 tonnes of copper in 2009 and provided smelting facilities for surrounding new mines in the northwest of the country, MOFCOM (2010), which is 43% of Zambia`s copper output. China Daily (14 April 2010) estimated that Chinese accumulated investments

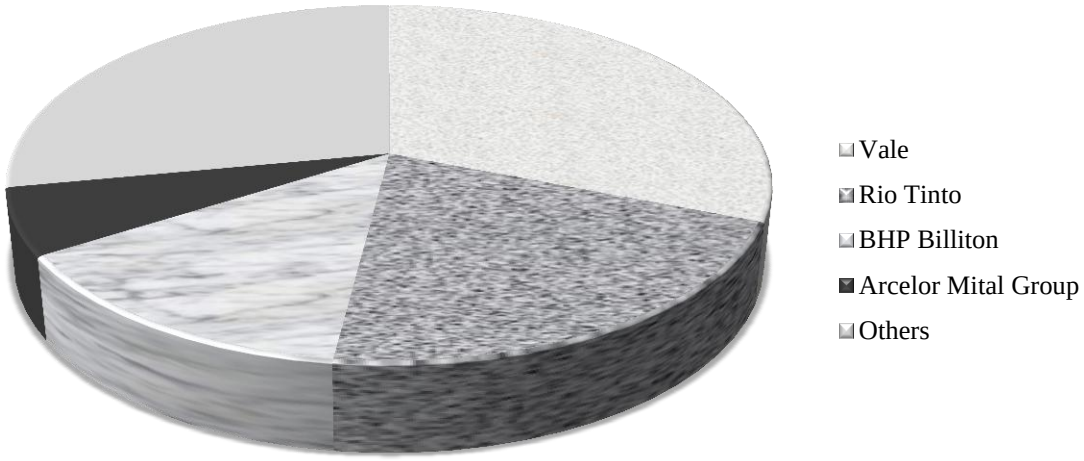
in Zambia are in excess of $1.5 billion; with the China Nonferrous Metal Mining Corporation (CNMC) forecasted to invest a further $600 million in 2011 for an accumulated investment of $1.1 billion and accounting for up to 6500 jobs in the country as leading diversified miner and foreign investor in the Zambia. China`s State Reserves Bureau (SRB) requires industrial metals above normal stocks. Besides domestic requirements, China has aspirations of leading the next industrial revolution, hybrid vehicles, which is heavily reliant on copper. This stock piling drive saw Zambia rank as the third largest holder of Chinese OFDI (Outward Foreign Direct Investment) stock in 2008 at $651 million, The Beijing Axis (2010). China was deemed as the benefactor of Zambia`s economy during the recession and besides increasing foreign copper mine ownership, China secured supply. It is forecasted that for the first time in four years copper demand may 'outstrip' supply, with an estimated 200 000 metric tonne deficit in 2011 due to declining ore grades and lack of new large scale mines coming into production in the foreseeable period, Hur and Suzuki (2010).

3.2.2 Sino-Guinean Iron Ore Investments - Cooperative Approach

West Africa, namely Guinea, Liberia, Sierra Leone and Cameroon hold Africa`s richest iron ore deposits and have been at the centre of iron ore investor interest. Politically they do not enjoy the level of stability Zambia holds and investors encounter a myriad of hurdles to secure and maintain tenure. The fragile political climate and erratic behaviour of government officials present the greatest challenges. It is essential to contextualise the reasons why China is aggressively pursuing overseas iron ore investments. The iron ore market is one of the most strategic markets due to its link to the steel and construction industries. China is the world`s largest iron consumer and its domestic iron reserves are highly uneconomical, there the country relies on exports to feed the steel industry. Figure 6 depicts that global iron

production is dominated by the 5 firms, with Vale and Rio Tinto controlling over 66% of global iron market share.

Figure 6: Global iron - ore Market Share 2010



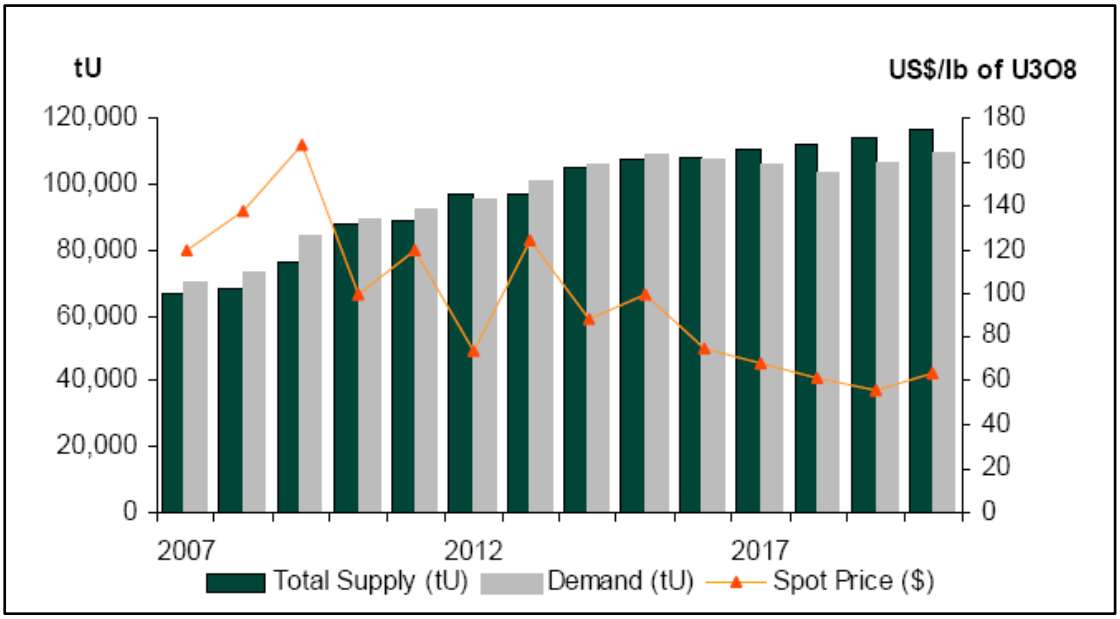
Source: (Thomaswhite.com, 2010)

If one considers the fact that by value, iron ore is the largest commodity market after crude oil, there is great benefit in China employing an indiscriminate approach in increasing overseas ownership as is the trend in crude oil investments. One would assume that Chinese SOEs such as Shandong Iron and Steel and Chinalco would pursue tenements aggressively against the more established competition. This view discounts the role of diplomatic relations in resource competition, and more importantly for China, if that competitor happens to be Australian. Rio Tinto invested an estimated $600 million into the world`s largest iron ore mine outside of Australia and Brazil, Simadou iron mine in Guinea; Guinea`s government then rescinded ownership and began negotiations Chinese investors, including Chinalco, BIC (2008). Chinalco for diplomatic reasons turned down the deal in favour of a strategic partnership with Rio Tinto, Garnaut (2009). The repercussions from Australia if Chinalco had pursued the Simadou project would have hurt China`s iron ore and coal imports, where Australia is the prime exporter.

3.2.3 Sino-Nigerien Uranium Investments – Opportunistic Approach

Comparisons are frequently drawn between the resource acquisition propositions of colonial powers and China. China has adopted a largely successful stance in arguing that it offers development to African countries, the now famed ‘win-win’ situation and the equitable ‘resource for infrastructure’ exchange. Niger presented an opportunity for China to capitalise on Niger`s disagreements with its former colonial master, France. Niger holds rich uranium deposits and as countries are expanding nuclear capacity, uranium demand and price are set to rise. In line with China`s forward looking policy, there was a drive to invest when market prices were low (Figure 7).

Figure 7: Uranium supply, demand and price forecasts



Source: (Olga and Morse, 2007)

France as Niger`s colonial power has been mining uranium since the 1950s and Areva since establishment in 2001 is no the world`s largest nuclear company. However exploitation and lack of local development have affected the French company`s reputation. Niger is the world’s 3rd largest uranium exporter, but the country is ranked as the 4th poorest in the word, neo-colonial agreements giving Areva below-market prices meant that the majority

mineral wealth was exported, MacPherson (2010). While the Chinalco-Rio Tinto scenario represents the diplomatic aspect of state Chinese SOEs; the uranium situation in Niger represents the opportunistic aspects of Chinese enterprise. In 2007 political tensions between Niger and French uranium company Areva escalated, ending a '40-year monopoly' by French company Areva; Sino U, the state uranium mining company capitalised and secured tenures, Hilal and Williams (2007). Although Areva has since rectified the matter and has returned to mining uranium in Niger, China managed to enter Niger`s uranium sector on the back of historical colonial tensions. More impressively is how China has managed to deal with juntas and changes in leadership in both Guinea and Niger and honoured the legitimacy of the dominant factions.

3.3 China`s approach to resource investments in Angola and the DRC: Redundancy of the IMF

China is emerging as a powerful challenger to the role of the IMF as the prime lender to African governments. Regarding official development aid (ODA), China through the Ministry of Commerce, MOFCOM and China Export-Import Bank of China (Exim Bank offers concessional loans, zero percent interest loans and grants, much like the IMF and Paris Club. China`s Exim Bank is the main vehicle for allocating concessional loans and devising the methods of payment, such as the now famed 'Angola mode' or 'Angola model'. It is important to note that Angola turned to China after initially approaching the IMF. In 2002, in an attempt to fund post-war infrastructure reconstruction, Angola`s government approached the IMF for loans but they were not forthcoming; China then offered a $2 billion dollar credit line to finance infrastructure that is now referred to as the 'Angola model' or the 'Angola mode, Zongwe (2010). After a 2 year waiting period as the IMF set preconditions to root out corruption and improve transparency, China offered Angola a counter deal against the IMF in 2004. China`s Exim Bank opened its first oil backed line credit line to Angola`s government

in 2004, $2 billion and the loan was increased by $1 billion in 2006 and $500 million in 2007, Corkin (2007). It is estimated that China`s Exim Bank, the Industrial and Commercial Bank of China and China Development Bank have extended a combined total of $14.5 billion in credit to Angola to aid construction of housing, hospitals, schools, roads and rail networks, Channel New Asia (6 March 2011).

The Angola mode is a simple resource for infrastructure agreement, but funds are not lent directly to the recipient government. A Chinese construction company is mandated to undertake construction work and in exchange for the infrastructure provision and the borrowing government will grant a chosen Chinese company (oil or mineral) extraction rights in a national oil company or through acquiring licenses for production, Reisin (2008 p. 2). This scenario is proving to be effective in narrowing the infrastructure gap for Angola, particularly the strategic rail and port facilities. Given the World Bank scenario that Angola`s oil reserves will be depleted by 2030 and the price of oil is generally on a downward trend, this is a diligent move by Angola`s government.

The DRC-China relationship is characterised by the historic 2008 $9 billion deal to swap 10 million tonnes of copper ore and 600 000 tonnes of cobalt reserves for infrastructure, Wolters (2008). The deal was divided into two stages, with Sinohyrdo Corporation and China Railway Engineering Corporation (CREC) forming the Chinese consortium. The two SOEs would invest $3bn in infrastructure, and $3bn into the mining deposits; which are held as to 32% Gécamines, the DRC`s state owned mining company and 68% by the Chinese consortium and a further $3bn for future investment in infrastructure, Sergeant (2008).

Sinohyrdo Corporation is China's largest dam builder, having built 70% of China's hydropower capacity and Chinese dam building companies have built 19 of the world`s 24 largest hydropower projects, Bosshard (2009). The DRC has a sufficient hydroelectric

capacity to support its mining activities and export electricity to neighbouring countries such as Zambia but Sinohyrdo was tasked with increasing existing capacity to meet mining requirements. The deal would have involved China Railway Engineering Corporation (CREC) focusing on the mining and rail aspects of the deal. The company has a multidisciplinary approach covering surveying and design, construction and installation, manufacturing, R&D, technical consulting, capital management, as well as international economic and trade activities, Chinacsrmap (2005). These two SOEs formed a strong complementary consortium.

The Chinese deal was, in essence, barter with the state-owned China Exim bank providing the funding of a copper mine in the DRC's Katanga province for $3 billion and underwriting $6 billion of infrastructure projects, Lee (2010). The loan would be paid back using profits of Sicomines, a joint company between the Gecamines and a Chinese consortium. The deal received global condemnation mainly from the IMF and eventually fell through for two reasons. Firstly the Chinese State-owned companies were estimated to make a profit of US$ 80 billion in exchange for a US$ 9 billion investment and the IMF argued that the deal would increase the country`s debt in the long term (China Monitor, 2008).

The Sino-DRC deal lacked critical information, which would have ultimately benefited China and disadvantaged the DRC. Critical issues such as pricing of resources, calculation and taxation of profits, the specifics of the type of infrastructure were and costs were not stipulated. Global Witness (2011) argues that the level of internal rate of return (IRR) was set as 19%, an extremely high rate. This removed the commercial risk from Chinese investors and the fixed rate of return would possibly have led to the DRC`s government putting forward extra mineral reserves or lowering taxes. It is worth noting that fixing the IRR goes against market behaviour. A mine`s IRR is partly driven by metal price assumptions and it varies with different commodity prices, Shute (2010).

While it is immediately evident that the deal was not subject to a number of key conditions from regulatory approvals to documentation stipulating targeted completion dates of deliverables, there were even more grey areas. This can be attributed that lack of capacity in African jurisdictions, from negotiating skills to effective legislation. For example securities laws that encompass forward looking statements. Bloomberg News Wire (15 November 2010) defines the importance of securities laws from a Canadian perspective. “Forward-looking statements, within the Canadian securities law requirements involve known and unknown risks, uncertainties and other factors that may cause actual results, performance or achievements to differ materially from anticipated results, performance or achievements”. The deal did not contain any clauses to be revised or updated in its `fixed` nature.

The deal had flaws but the IMF was also protecting its own interests. Following Angola`s government shunning the IMF, it was imperative for the IMF to maintain control and influence of the DRC’s economic activity. The IMF was able to counter China`s advances by promising to cut off the DRCs debt, which had been incurred by previous governments and more or less equated to the value of China`s deal. This meant that with China`s ‘barter’ deal, the DRC would sink further into debt. If the DRC accepted the IMFs proposal to not accept that swap, the IMF would certify the Paris Club creditors to write off their $6 billion share of the DRC's total $11 billion foreign debt incurred by Mobuto Sesi Seko, Lee (2010)

Angola had an advantage over the DRC in that the country had no pre-existing debt as there was no recognised government in the country during the civil war. From this position, Angola`s government was able to capitalise of high oil price and disregard IMF recommendations to turn down the China`s offer due to oil revenues. Angola`s oil production increased from 742 000 b/d in 2001 to 1.4 million b/d in 2006 and during that period the price of oil increased from $26/barrel - $66/barrel increasing the countries revenues from $7 billion to $34, the DRC did not have similar revenues from cobalt, Downs (2007). Lee (2010 p. 2)

provides a differing and critical comparison of Angola and the DRC that high lights the negotiation capabilities of the two governments, “I trust a corrupt, but efficient government like Angola to squeeze value out of Chinese and Western companies not the DRC."

3.4 Conclusions

In investigating China`s approach to resource investments in Africa, the chapter showed that capital has had a large part to play in securing resources. China`s resource acquisition drive is supported by a ‘policy driven’ banking system that is dominated by four SOCBs; the Bank of China Ltd, Industrial and Commercial Bank of China Ltd, China Construction Bank Corp and the Agricultural Bank of China Ltd. The SOCBs finance SOEs based on state policy lending directives and remain China`s most dominant banks despite efforts to diversify the banking system.

China`s engagement with Zambia in 2008 was on the back of major price falls with copper experiencing some of the heaviest price falls during the global recession. Chinese investment went against market logic and invested while traditional investors retracted investments. China adopted a forward looking approach that was in line with government policy. China`s SRB is focused on securing copper supply to meet the countries domestic requirements and investment decisions are not driven by market sentiments.

The chapter showed that while China is eager to secure iron ore supply through Guinea, Chinalco did not accept Guinean’s governments offer to take over the Simadou Iron Ore Mine from Rio Tinto. There are strong diplomatic obligations between China and Australia that are vital to China`s resource requirements and capitalising on Rio-Tinto`s loss in Guinea would have jeopardised future relations. On the other hand, in Niger China was able to capitalise on Areva`s fall out with the government and secure uranium tenures.

China is emerging as a powerful challenger to the role of the IMF as the prime lender to African governments, as evident from proceedings in Angola and the DRC. Angola initially approached the IMF in 2002 for a credit line but the IMF set preconditions and the loan was not forthcoming. In 2004 China offered Angola a counter deal against the IMF through the country`s Exim Bank. The oil backed line credit line now known as 'Angola Mode' was essentially a resources for infrastructure deal, with no less preconditions and processed in less than that IMF`s option.

The DRC deal on the other hand fell though. The 2008 $9 billion deal to swap 10 million tonnes of copper ore and 600 000 tonnes of cobalt reserves for infrastructure received global condemnation from observers and the IMF. It was advised that Chinese companies would profit at the expense of the DRC and the deal did not materialise as the IMF stated it would advise the Paris Club to write off $6 billion worth of the DRC`s credit. The DRC was unable to follow Angola`s precedents to accept China`s proposal to leverage its resources in exchange for infrastructure and reject the IMFs suggestions due to low copper –cobalt prices. If commodity prices had been higher, the outcome could have been different and such proceedings indicate that the role of multinational institutions such as the IMF in Africa is under threat. China`s engagement with African countries clearly highlights the role of capital in resource investments, without access to capital and China investment African jurisdictions would be not be able to exploit the abundant natural resource stocks. Viewing natural resource stocks as forms of capital prior to exploitation does not serve as a logical proposition.

Chapter 4: '*Spill-over Effects' of China`s resource demand: Opportunities and Challenges for African Governments*

4.1 Introduction

China is a partner that provides African countries with policy space without traditional conditionalities (Brautigam, 2010). In line with this statement, is there a strategic rethink by key African countries in the role of mineral wealth in economic development? China`s demand translates to sustained high commodity prices which potentially provide policy space. African countries are increasingly focusing on resource sectors; from discentives for out of country beneficiation to changes in participation and ownership structures of mining industries. Economic development in Asia is spilling over into Africa and this is introducing various opportunities and challenges. These include strong economic growth forecasts for African countries investor diversity and uncontrolled migration of Chinese economic migrants among others. Ironically even 'resource deficient' countries, are becoming major players in Sino-African affairs and capitalising on China`s resource acquisition drive. As certain African countries employ aggressive resource extraction strategies to 'good' effect, one may question if Chinese demand challenges optimal extraction theory?

From China`s perspective, the challenge becomes one of protecting Chinese investments and interests as African countries adopt ambitious policies. China is adopting a calculated approach in aligning itself to African countries developmental plans and protecting Chinese mining investments. This chapter explores very different developments in Angola, Ethiopia, South Africa and Zimbabwe and examines how migration is emerging as the biggest threat to the sustainability of China`s non-interference policy.

4.2 China`s Protection of African countries during the global recession

Given the abundance of Africa`s natural resource, China`s resource requirements and Africa`s infrastructure deficit, there is a strong interdependcy between the two regions. The previous section alluded that China is attracting FDI into the service industries to harness technology and skills transfer, on the other hand Africa`s drive for FDI is largely targeted at reducing the infrastructure deficit. Africa`s overall infrastructure deficit in monetary terms is estimated to stand at $1.5 trillion and the African Development Bank (AFB) provides that African governments cannot finance the required developments without foreign direct investments, Campbell (2010). The West has traditionally been the prime source of FDI for African countries but there is an underlying shift in preference for Chinese FDI. Firstly Chinese FDI into African resource sectors offers an alternative to Western Investment. Historically, Western FDI targeting African resource industries has not reduced the infrastructure deficit or contributed to overall development, technology or skills transfer. On the other hand Chinese FDI is strongly linked to aid and trade and promises to deliver in the areas where Western investment and aid have failed. Paradoxically the attributes of China`s FDI are based on preceding Euro-African precedents. European countries in the colonial era, linked aid, FDI and trade but after decolonisation growing public opposition and financial institutions insisted on delinkage of the three aspects, Kaplinsky and Morris (2009). The very reasons that led to dissolution of the linkage of all three aspects are the exact reasons that give China the advantage that colonial powers held. China is able to further entrench its influence on African governments by effectively locking out competing countries as the latter have complete reliance on China for economic progression. The previous chapter showed that multilateral institutions on the large part are becoming redundant as China competes as a multilateral institution that provides aid and is the dominant trade partner and the primary investor in key industries. While aid from multilateral institutions such as World Bank and

the IMF is characterised by lengthy assessments, stringent criteria and on-going conformance to prescribed rules and regulations; China offers the opposite. Negotiations and agreements can be completed and finalised in weeks, the IMF and the World Bank have lengthy negotiations that can stretch for years. China also offers flexibly in terms and conditions with highly flexible pay back periods and rates. The process of linking aid, trade and FDI also means that while Western trade and FDI is dependent on political legitimacy and alignment to democratic processes, China can engage with regimes that are not recognised by Western states.

China`s investment in African resource sectors has given leverage to African jurisdictions and contributed to the increased interest in the potential of African resource sectors. A fact that is often neglected is that China`s investment and the resource acquisition strategy protected African economies from the full effects of the global recession and financial meltdown. Events in Europe, as one of Africa`s most important trading partner induced the most impact on African economies from a trade perspective. From a natural resource perspective, the Euro-African link faltered during the recession while the Sino-African link strengthened as countries that relied on exports to European exports were greatly affected by the recession. Zambia and Botswana present the best cases to understand this development. Botswana which relies on diamond exports primarily to the European market for about 50% of government revenues and third of GDP, closed down mines as diamond prices fell by 30% in 2008-2009, Livingstone and Cherian (2010). Zambia experienced the opposite effect as Zambia`s government revenues and GDP are heavily reliant on copper exports to China. In the face of dipping copper prices, Chinese companies invested heavily in Zambia while Western Investors were forced to shut down operations. The end result was that Zambia`s economy was not hit as hard as Botswana economy due to China`s protectionalism. The fact

that China can offset negative global developments and sustain resource rich economies is arguably one of the key factors that will contribute to stronger Sino-African affiliations going forward.

Chinese protectionalism and increasing investments into resource sectors has also translated into strong economic growth for African countries. Going forward this holds well for African economies. An analysis by the Economist finds that over the ten years to 2010, 6 of the world's 10 fastest-growing economies were in sub-Saharan Africa. Based on forecasts Africa will occupy 7 of the top 10 over the next 5 years of the world`s fastest growing economies (Table 5). On average it is predicted African economies will grow faster that Asian economies.

Table 5: World`s Fastest Growing Economies, 2001-2010, Forecast 2010-2015

2001 - 2010	Annual Average GDP Growth %	2010 -2015	Annual Average GDP Growth %
Angola	11.1	China	9.5
China	10.5	India	8.2
Myanmar	10.3	**Ethiopia**	8.1
Nigeria	8.9	**Mozambique**	7.7
Ethiopia	8.4	**Tanzania**	7.2
Kazakhstan	8.2	Vietnam	7.2
Chad	7.9	**Congo**	7.0
Mozambique	7.9	**Ghana**	7.0
Cambodia	7.7	**Zambia**	6.9
Rwanda	7.6	**Nigeria**	6.8

Source: (The Economist, 2011)

4.3 Angola: Fast Paced Exploitation Strategy, Optimal Extraction Theory?

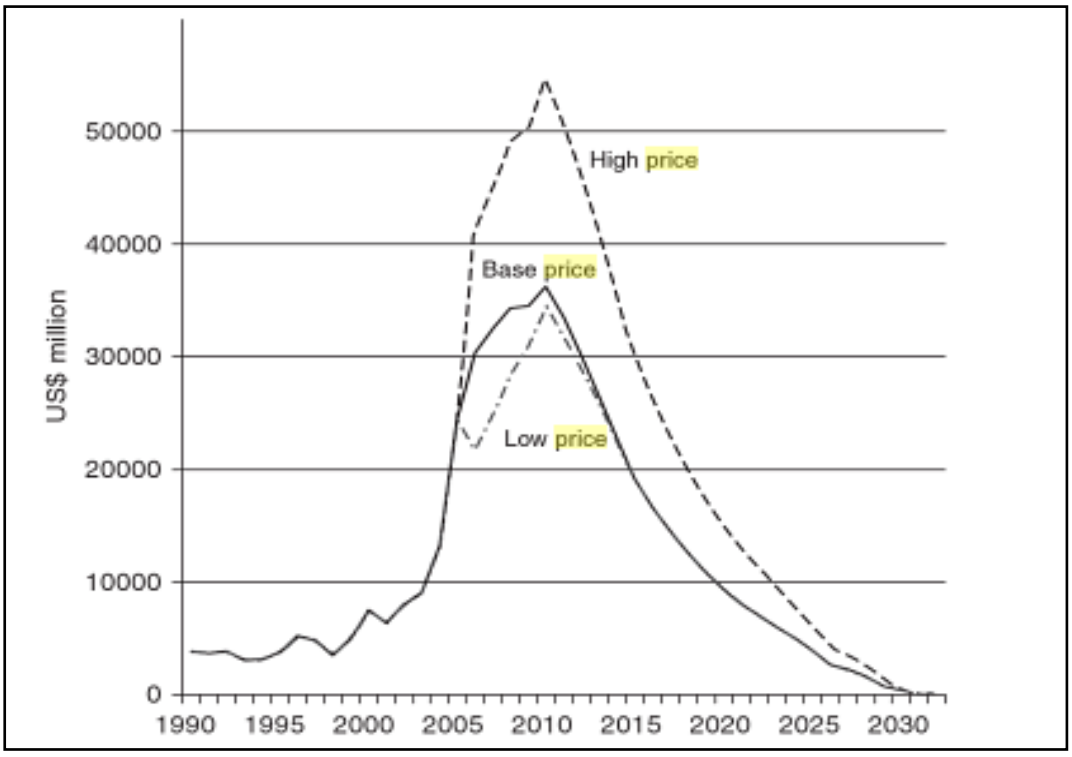
Hotelling`s rule is regarded as the theoretical core of mineral economics and a justification of optimal extraction. The rule theorises that the price net of marginal cost must rise at the rate of interest in non-renewable resource markets. Simply put, if a non-renewable resource is not

mined and left in the ground, it will appreciate in value just as a bond or savings in the bank. Therefore it follows that producers would best be advised to mine optimally to realise maximum profits. This theory holds well for conservation but practically it has little application to resource producing nations in devising mineral policy. Firstly a resource left in the ground has no value; it does not contribute to development or contribute revenue. While developed economies can be selective in mining, for example the concerns of the impacts of mining uranium in the U.S., Europe and Australia; developing countries may not enjoy such selectivity. African economies in particular must maximise resource wealth to facilitate development.

Angola presents a good case to test the viability of optimal extraction theory. The challenge for a resource producer is to extract resources at a rate that maximises returns. Saudi Arabia at the end of 2009 had proven oil reserves of 264.6 billion barrels and Angola had 10 billion barrels, Laherrere (2010). Clearly Angola`s oil reserves are limited and the challenge for the government is to devise policy that best exploits the limited oil reserves. Angola has enjoyed some of the world`s highest GDP growth rates. Angola is Sub-Saharan Africa`s second largest oil producer, with estimated reserves of 13.5 billion barrels, OECD (2008). Since joining OPEC in 2007, Angola has been subject to quotas but the country has not abided to OPEC quotas and has been pushing for OPEC to raise quotas. In 2009 declining oil prices impacted the economy and the country had a negative GDP growth. In 2010 the economy had positive growth in line with rising oil demand due to the reliance on oil revenues. OPEC production agreements also do not abide to optimal extraction theory but aim to prevent surpluses in the oil market and reduce output or major prices during periods of low demand. Angola cannot not afford to abide to optimal extraction rates or quotas for the simple reason that the country`s position as China`s leading oil supplier would be jeopardised. Angola is at the centre of Chinese interest on the African continent and if Nigeria addresses domestic

challenges and oil discoveries in other African countries continue at current rates, Angola will lose leverage. The Sino-Angolan resource for infrastructure agreement works well because Angola is Africa`s only oil producing nation that enjoys relative political stability to be able to meet China`s requirements. A study by the World Bank forecasts that Angola`s oil production and government revenues should peak between 2005-2015 in the absence of new discoveries and escalating production. It is predicted that by 2030 Angola should have exhausted current oil reserves. (Figure 8)

Figure 8: Angola Oil Revenues Declining to 2030



Source: (World Bank, 2007)

Collapsing oil prices are a concern of the government but more importantly, high oil extraction rates contribute to infrastructure development. Since 2000 most of the world`s oil discoveries have been in Africa and the offshore nature of the majority of Africa`s discoveries means they are free of civil and militant interruptions. West African oil has long

been regarded as one of the few major alternatives to the Middle East and China and the U.S. have been investing and engaging with West Africa governments, Landers (2004). It is only a matter of time before Angola surrenders its position as Africa`s leading oil producer. Largely due to new oil discoveries coming online African countries with larger reserves, such as Nigeria stem out corruption and overcome technical challenges. China`s high resource demand means that in volatile markets there is perhaps a 'first-mover' advantage when demand and prices are high and by increasing output, governments can benefit from a developmental and financial perspective. Angola`s engagement with China has meant that oil production and supporting activities have contributed to one of the world`s fastest economic growth rates. During the past decade, the Angolan economy has averaged a double digit annual GDP growth rate, one of the highest in the world at 11.1%, Rosenblum (2011).

4.4 Ethiopia: Most Strategic African Country in Sino-African Affairs?

At face value Ethiopia would appear to be a country of limited value in China`s resource acquisition strategy as China generally targets resource rich African countries. Ethiopia is isolated from predominantly resource rich African countries, not only from a resource perspective but a cultural perspective. It is in essence a 'lone' country, Ethiopia lacks cultural commonality with neighbouring countries. Its predominant language is Amharic, written in the Ethiopic script, its predominant religion is Coptic Orthodoxy and it has an Imperial history that differentiates it from its Muslim neighbours, Huntington (1996). Ironically this is Ethiopia's advantage despite its unique status; about 43% of Ethiopians are Orthodox Christian and 33% are Muslims, Selamta (2011). As one of Africa`s oldest independent countries that represents independent ideologies and resistance to colonialism, Ethiopia commands 'soft power' to effectively link Muslim North Africa and Christian Southern Africa. Therefore despite being deficient in natural resources; it serves as a strategic diplomatic function. Ethiopia, in collaboration with China, hosted the second ministerial

conference of the Forum on Sino-African Cooperation (FOCAC) in December 2003; this was the first time the Ministerial Conference was held on the African continent, Gamora (2008). This was in essence a prelude to the 2006 Beijing Summit that heralded a new era in Sino-African collaboration. Chinese President Hu Jintao and President Meles Zenawi of Ethiopia co-chaired the Summit and the Beijing Action Plan (2007-2009) was introduced highlighting the new strategic partnership between China and Africa (Ministry of Foreign Affairs of the People's Republic of China, 2006). Ethiopia is the headquarters of the United Economic Commission for Africa, the African Union and Merkato in Addis Ababa is the largest market in Africa that sells branded goods, Rengecas (2007). Ethiopia therefore also represents a model for African markets in introducing and protecting companies' products, therefore Chinese companies seeking to enter and penetrate African markets will logically do so through Ethiopia. In summary Ethiopia plays an important role in African politics, the country`s 81.5 million population offers a more lucrative market compared to an oversupplied heavily taxed Chinese market. It is a commercial testing ground where Chinese companies can test strategy and strength and there is strong potential of Ethiopia holding undiscovered natural resources, namely petroleum, given its size (Gamora, 2008).

Ethiopia is therefore gaining from both China`s resource demand and search for markets. Ethiopia has had strong economic growth between 2000 - 2010. In 2010 Ethiopia had a 12.7% economic growth, the economy is estimated to grow by 9.4 percent and 9.2 percent on average during 2011 and 2012 respectively, while Africa registered a 4.7 percent economic growth in 2010 and is forecasted to grow by 5 percent and 5.1 percent during 2011 and 2012 respectively, ERTA (2010). Furthermore, the Human Development Index (HDI), an index employed by the UNDP to measure effectiveness of overall human development, indicates that Ethiopia had the third fastest average annual HDI growth rate in the world, between 2000

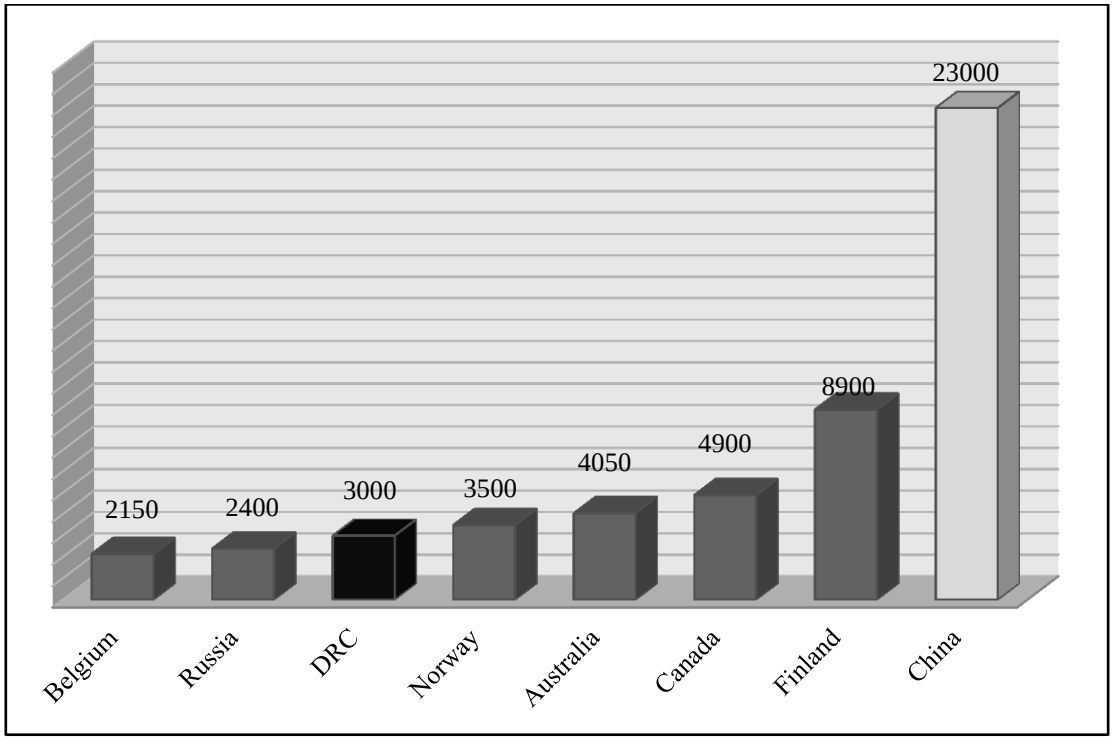
and 2010, UNDP (2010). Ethiopia is indirectly gaining from Chinese resource demand as a diplomatic player and illustrates that some of the greatest economic impacts and gains of Sino-African cooperation are in a resource deficient country. This development paradoxically illustrates that some of the greatest economic impacts and gains from Sino-African cooperation have been in in a resource deficient African country.

4.5 The DRC and Zimbabwe: Copper-Cobalt Concentrate Export Ban, STERP and Chrome Export Ban

An analysis of Zimbabwe indicates that the mining sector is being targeted as the 'saviour' of the economy. The fact that the mining industry contributes more than half of government revenues and has been one of the few lines of FDI inflows, means that the government can target it as the core developmental base. The 51% indigenous ownership law and the Short-Term Emergency Recovery Program (STERP) aimed at value addition in key mining industries are some of the government intitiaves aimed at reviving the economy. China`s non-interference policy means that China is impartial and non-vocal regarding host government actions. However China supports the sovereignty of African states and has been publicly supporting Zimbabwe indigenisation and nationalisation drives. China`s rhetoric is accompanied by a strong awareness that such reforms could threaten on existing investments. The $700 million loan arrangement with Zimbabwe represented the China`s biggest loan package to date with the aim of urging the government to protect Chinese investments from nationalisation plans. Zimbabwe chrome export ban drive is aimed at value addition through beneficiation and China is actively involved. The Zimasco website provides that 86.3% is held by Sinosteel Corporation and 13.7% is held by China-Africa Development Fund, Zimasco (2011)

The DRC has been proposing permanent bans on cobalt and copper concentrate exports. Studies in the politics of trade demonstrate that government intervention is not only driven by public policy goals, but also the interests of domestic constituents, Hughes and Kreyling (2010). In line with this observation rising copper-cobalt prices and increasing investment inflows have meant that provincial governments in the DRC, mainly Katanga and Kivu are seeing opportunities for increasing revenues. The power of the provincial governments means that drives translate into state level regulations. China`s cobalt demand for 2010 was estimated to be 21 000 tonnes with increases of 3 – 4% have been predicated for 2011, Metal Bulletin (10 November 2010). China had sufficient refining capacity to handle the 2010 demand of 21 000 tonnes. The country had a refining capacity of 23 000 (Figure 9) and the country ranks well above other major cobalt refiners.

Figure 9: Global Cobalt Refined Quantities by country (tonnes)



Source: (CDI, 2009)

Finland, Belgium and Norway have no cobalt mining operations but yet are some of the highest cobalt refiners in the world. Despite hosting an estimated 50% of global cobalt reserves and being the world's leading cobalt producing region, the DRC only accounts for a small percentage of refined product. The DRC government has since imposed a $60-per-tonne export tax on exports of upstream copper - cobalt products that are not metal or alliange blanc, Metal Bulletin (19 August 2010).

4.6 South Africa

Political uncertainty is the one of the biggest influences on mining investments decisions and affects investor perceptions and investment inflows. Political uncertainty has various spinoffs, and regulatory uncertainty emerges the most prominent, simply because any policy changes to ownership levels or taxation rate can render highly profitable projects uneconomical. Private mining investments are the most sensitive and in most cases investors will delay investment until clarity is restored. Overall there are minor and major investor concerns arising in South Africa. The minor concerns are market related and technical, the volatility of the local currency and the operational costs and geotechnical challenges in deep level mining activities. The major concerns are the political in nature; pending nationalisation, the unresolved Minerals and Petroleum Resources Development Act (MPRDA) and difficulties in compliance to Black Economic Empowerment (BEE) stipulations. The Mineral Resources Minister has publicly opposed nationalisation of South Africa's mines but the African National Congress Youth League (ANCYL) has been pushing for it and the African National Congress (ANC), having initially resisted, is now researching into the matter, Mail Guardian Online (9 February 2011). Nationalisation as a sweeping enactment will threaten Chinese interests in the country as the advocates of nationalisation do not display the pro-Sinic position typical of African leadership. The leader of the ANCYL

who is advocating for nationalisation is weary of China regarding exploitation of African countries, employment creation and the overall development, The Namibian (11 April 2011).

The focal legislation in the in South African mining activities is the Minerals and Petroleum Resources Development Act (MPRDA). The act was passed in 2005 and gives the state control over mineral resources and advocates for participation in mining actvities by historically disadvantaged South Africans (HDSAs). The provisions of the MPRDA require mining companies to have HDSAs ownerships of 15 % by 2009 and 26% by 2014. The MPRDA is in line with the Black Economic Empowerment Act (BEE), which aims to integrate the black majorities into the economic system. Transparency has been a major shortfall in implementing the MPRDA legislation. The procedure to obtain prospecting licenses for new entrants ran into transparency and maladministration and a moratorium on new applications for prospecting licences had also been imposed for up to six months, McKay (2010). The net effect of the law is that the government has greater control of granting mining licences and minorities have a greater role in resource ownership and participation. By 2010 only 8.9 % of those total assets been transferred in comparison to the required 26%, African Business Journal (2011). This means that 17.1 % of mining assets must be transferred to HDSAs in the next 4 years. The majority of global investors are waiting for any developments and the outcomes of this process.

The first obvious result of this process is that black owned companies are becoming increasingly influential mining establishments. Royal Bafokeng Holdings (Pty) Ltd, Wesizwe, NewCo, African Rainbow Minerals (ARM), Mvelaphanda, and Tiso Consortium emerge as some of the most notable establishments. The second and more obscure result, is that as South Africa`s government gains increased control of the mining industry the ‘high

level' state-state approach employed by Beijing provides direct access to key resource sectors. Thirdly, negative investor perceptions means that there is a growing investment gap as well a technological gap, particularly in the lucrative and high technological platinum and deep level gold mining sectors. China emerges as the leading candidate to exploit this gap. In line with this assertion, Jinchuan Group Limited (JNMC), a Chinese SOE, has successfully negotiated China`s entry into South Africa`s platinum sector.

4.6.1 Jinchuan-Wesizwe Platinum Limited $877 million platinum deal

While investors fear increasing government participation and complying with BEE requirements, China has capitalised on investor uncertainty and is actively engaging with BEE companies. China has met all BEE requirements in its partnership with Wesizwe Platinum; a black owned community based mining company in its second largest resource deal in Africa. The state-owned miner Jinchuan Group and the China-Africa Development Fund will take a 45% stake in the junior miner Wesizwe Platinum for $200m, as well as funding a $27m stake for black investors in line with South African black empowerment rules, IOL Business Report (14 March 2011). China will further fund the developments of $650 million development of the development of the Wesizwe's Frischgewaagd-Ledig mine. Jinchuan meets the BEE equity ratio by holding a 47% stake and the new holding will have a BEE equity component that exceeds the 26% MPRDA requirement. To add a twist, going forward MPRDA could benefit China. The 2008 declaration that South African Chinese are classified as HDAs could play in China`s favour. From an estimated population of 300,000 Chinese in South Africa, the new legislation applies to Chinese who were citizens of South Africa before 1994 and their descendants, however only 10,000-12,000 can benefit from this legislation, Eco partners (2010)

BEE has not always serve Beijing`s interest or strategy. China Wire (17 December 2010) reported that Chinese company, Sinosteel insisted on majority control of the ASA chromite mine and ferrochrome processing facility in Limpopo South Africa. The adherence to the stipulations of the BEE legislation would have required a local enterprise to control mineral rights at the chromite mine and reduced Sinosteel's stake to 44%. Sinosteel after some negotiations 'trounced' the BEE regulations to secure majority control. Precedents indicate that China can successfully circumvent legislation and is in premium position to capitalise on developments in South African mining legislation.

4.7 Challenges to Sino-African Affiliations: Uncontrolled economic migration and Investor Diversity

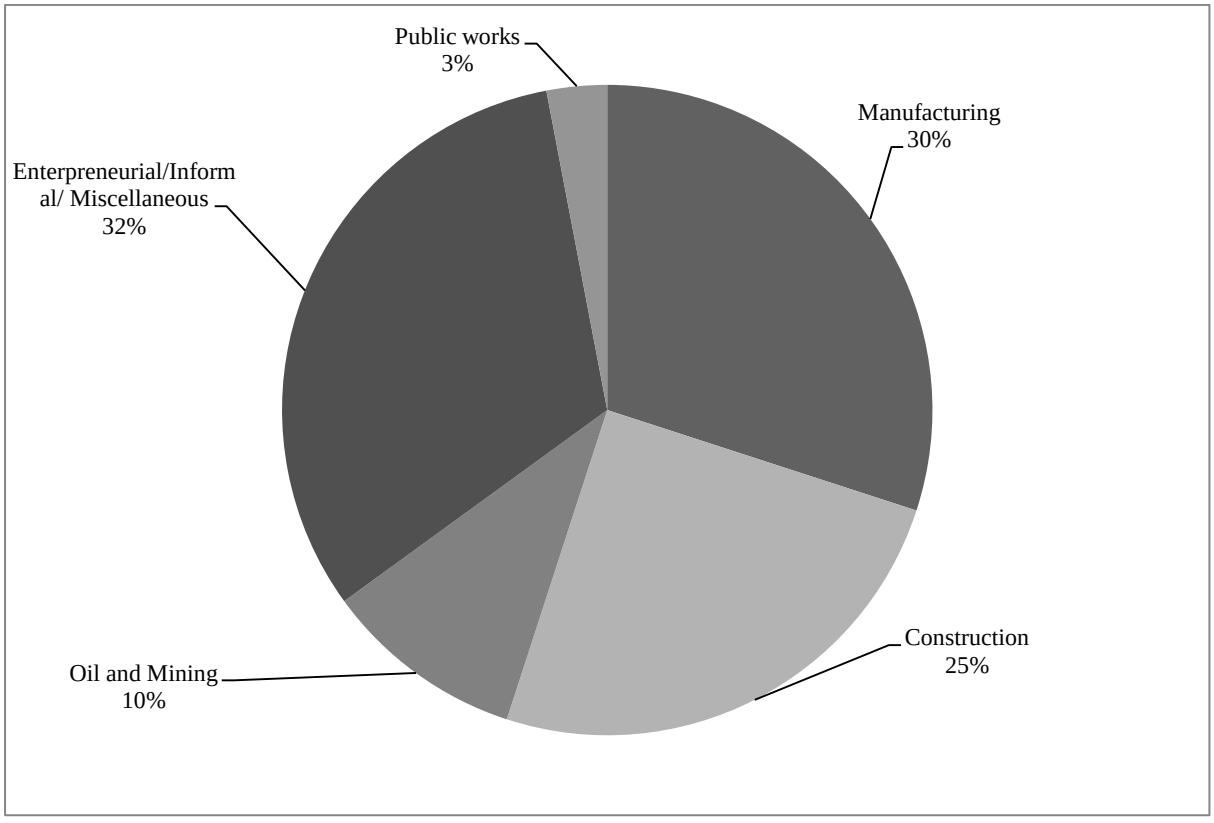
4.7.1 Chinese Economic Migration

Reality and precedents in the case of Western superpowers demonstrates that China`s non – interference policy is not sustainable. Western superpowers such the United States and the United Kingdom have intervened in varying capacities in global events that affect national interests, particularly resource security such as Iraq and Nigeria. In line with Beijing`s non – interference stance, migration presents an immediate concern as Chinese economic migrants become more involved in African domestic affairs. The increased wave of migration by Chinese citizens motivated by entrepreneurial interests is not a directive of the central government; the personal aspirations of these migrants and interactions with local communities may not always represent China`s objectives, Alden (2011). Effectively the current trend is a combination of organised and disorganised migration and on the larger part, a part of Chinese foreign policy that the government does not have direct control.

Modern Chinese immigrants to Africa can be divided into roughly four different categories: temporary labor migrants linked to Chinese development work in Africa, small-time

entrepreneurs, in-transit migrants, and agricultural workers, Migration Information Source (2008). The Migration Information Service provides that the largest of these four categories is temporary labour migration where migrants work in infrastructure, public works, oil, and mining operations and stay for the duration of the contract and return to China. The contract workers stay in their host countries after the contracts end and move into the entrepreneurial, commercial, formal and informal sectors (Schmidt, 2007). Figure 10 illustrates the estimated sectoral distributions of Chinese labour in Africa.

Figure 10: Estimated Sectoral Distribution of Chinese Labour in Africa



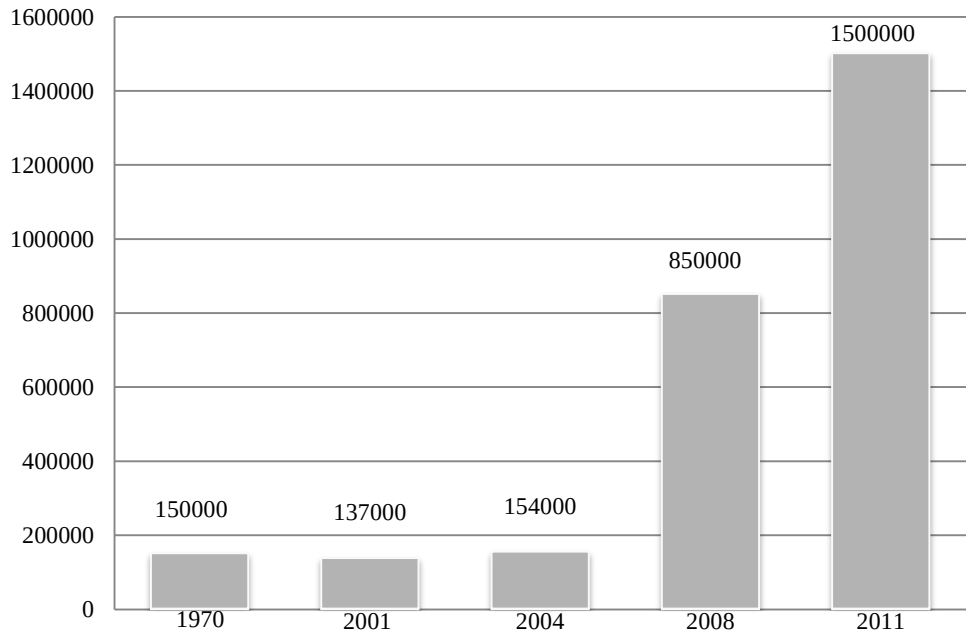
Sources: (Migration Information, 2008; Schmitt, 2007)

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This growing preference for temporary labour migrants to pursue entrepreneurial interests presents boundless challenges going forward. Firstly from a fact that Chinese migrants who remain compete with local industries even in the most remote locations, Alden (2011). The

fact that Sub – Saharan Africa has the largest informal business sector means that the socio – economic implications of this trend will have far reaching consequences. Between 1950 – 1970, the migration trend was temporary, Chinese temporary migrants returned to China on completion of state engagements, Migration Information (2008). Chinese migrants now prefer a more permanent status in African countries where they seek economic opportunities and numbers are rising (Figure 11). South Africa now has the largest Chinese community in Africa with an estimate of 300,000 Chinese migrants, with newly-developed Chinatowns in the eastern Johannesburg suburbs, Tsuchiyama (2010).

Figure 11: Estimated Populations of Chinese migrants in Africa



Sources: (Asche, 2007; Schmitt, 2007; the Guardian, 2011)

Guangzhou which manufactures cheap and goods in Pearl River Delta has one the biggest populations of Africans in China, an estimate of 20 000 from various countries, namely Burkina Faso, Somalia, Ivory Coast and Ghana, Tanzania and Angola, Branigan (2010). The crackdowns on African immigrants in China have been a talking point and the non – renewal

of temporary visas, figures of the total population of Africans in China range between 20 000 and 100 000 with most of them in the informal sector (Gosh, 2010).

Kupu Chikaviro, a Zimbabwean student in Biejing provides that African migrants in China do not enjoy the same treatment their Chinese counterparts in Africa. She points out that Guangzhou has the largest number of Africans in China but it's a very challenging city, 'They are hard on foreigners and it is kind of like living in fear constantly but other cities are better. In Beijing and Shanghai you can work and study as long as your papers are in order. Africans mainly teach English, that's all you can do, because they don't really employ Africans in other fields. I can stay here but my options are limited because once you complete your studies they want you to go back to your country, from there you can come back with different papers.'

China has strict domestic migration policies and controls; migration in China is highly regulated. People seeking to change residence permanently or formally are required to obtain approval for *'hukou'* change from the local authorities, Chan and Zhang (1999). The Chinese government prefers to down play migration issues stating that there were 78 000 Chinese in Africa in 2007, while some estimates stood at 1 million, Schmitt (2007). The migration trends are clearly not reciprocal with a greater socio – economic impacts on the African side. Gosh (2010) estimated the population of Africans in China to be no more than 100 000 while the Chinese in Africa are approaching 2 million (Figure 11).

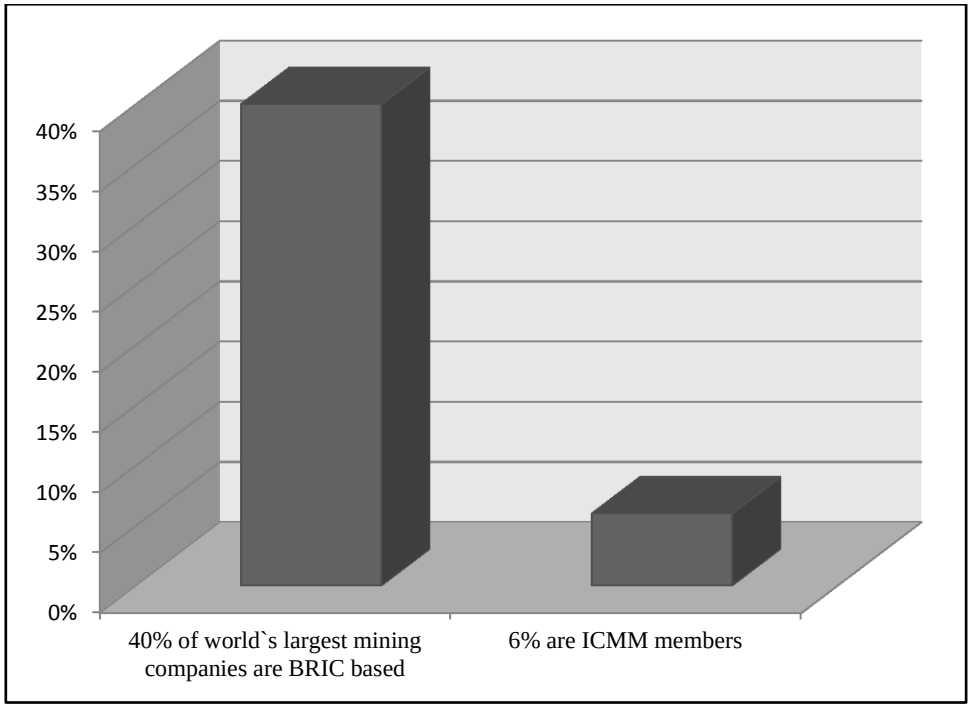
4.7.2 Investor Diversity

The increasing presence of Chinese companies in the African mining industry has presented opportunities for African governments but it has also come with challenges. The question is if

investor diversity challenges, undermines or impedes mining reform. Haglund (2010) highlights that the manner in which Chinese firms raise capital is not governed by regulatory pressures and a scenario where investors follow different standards and practices, regulators cannot rely on consensus. Firstly, Chinese companies, particularly SOEs do not raise money through international banks which require compliance to various issues such as independent audits and other practise that are standardised across industry. Secondly for regulations to be effective investor interests must be taken into account and prior to implementation, investors must be involved and agree to comply with the reforms.

The fact that non-Western firms in most cases do not adhere to western practice means that there are differing levels of compliance to regulations and any reforms will not have varying impacts. The infusion of Chinese, Russian, Indian and Brazilian mining firms besides bringing investment, introduce new dynamics. Considering the fact that almost 50% of the world`s largest mining companies are BRIC-based, while only 6% have ICMM registration is indicative of different approaches to issues such as governance, environmental management and best practice among other aspects (Figure 12).

Figure 12: BRIC Mining Companies and ICMM Membership



Source: (Caetanno, 2009)

Corporate Social Responsibility also emerges as an area of concern. CSR issues include governance, labour decrees, community engagements and environmental management among others. For Chinese companies these issues have different interpretations. Institutions such as the International Council of Mining and Metals (ICMM) endeavour to standardise such processes and the interpretation of governance through accountability, openness and coherence in African regimes varies. At corporate levels Chinese mining and oil companies introduce various governance structures and protocols which present their own challenges. Transparency, best practice, and safety are often not associated with Chinese companies in Africa. Haglund (2010) states that Chinese companies and Chinese investors often enter Zambia through 'closed-shop' negotiations between the presidency and Chinese officials and the government is rewarded by large loans from China. This means at times China is able to circumvent mining legislation. While Zimbabwe is pushing for mining reforms, China is directly circumventing reforms by offering the Zimbabwe government an estimated $700

million in package with Zimbabwe in its biggest loan package to date, urging the government to protect Chinese firms from nationalisation plans, Mining review (22 March 2011). Zhu (2010) adds that Chinese company, Sinosteel circumvented BEE legislation using South African government officials to gain majority control of ASA chromite mine and ferrochrome processing facility.

Going forward the dynamics of the investor diversity will become more complex given the economic competition between China, India and Russia. It is critical that Western investors adopt effective responses. Potentially, there will be a reinvention of approach as Western companies seek to become more competitive. Transparency becomes a major issue for international organisations such as Transparency International (TI) in the fact that perceptions across the board vary, with regards to corruption and transparency. Issues such as bribery, political intervention and environmental stewardship become increasingly unqualified practices with Chinese business.

4.8 Chapter Summary

The affinity for Chinese FDI by African countries is grounded in the abundance of Africa`s natural resource, China`s resource requirements and Africa`s infrastructure deficit, creating a strong interdependcy between the two regions. China has targeted reducing Africa`s infrastructure deficit and Chinese FDI is strongly linked to aid and trade and promises to deliver in the areas where Western investment has failed. Negotiations and agreements with China are finalised in short periods in comparison to multilateral institutions and China offers high flexibly in terms and conditions. China does not seek political legitimacy in engaging with African regimes, protected African countries during the 2008 global recession and Chinese investment is contributing to African countries becoming the world`s fastest growing

economies going forward. These factors among others have led to African governments preferring to engage with China.

The chapter showed that Angola`s government has been diligent in the manner it has approached oil exploitation. Angola is at the centre of Chinese interest and it is advised for Angola to utilise its position as Africa`s top oil producer to reduce its infrastructure deficit. Record high oil prices have seen Angola boosting high economic growth rates by increasing oil output, it appears optimal extraction may not serve Angola`s cause given the countries severe underdevelopment. Going forward collapsing, oil prices and supply increases may threaten Angola`s position in China`s oil requirements and the Angola`s government is capitalising on its current position.

The effects of China`s resource demand are spilling over into resource deficient countries. Ethiopia is one of the most strategic countries in Sino-African affairs and has been one of Africa`s fastest growing economies and the world`s fastest developing regions. Ethiopia commands ‘soft power’ to effectively link Muslim North Africa and Christian Southern Africa and despite being deficient in natural resources, serves a diplomatic function. Ethiopia hosted the second ministerial conference of the Forum on Sino-African Cooperation (FOCAC) in 2003 and chaired the historic 2006 Beijing Summit alongside China. Ethiopia plays an distinct role in African politics, offers a more lucrative market and has strong potential of holding undiscovered natural resources, namely petroleum.

China is offering policy space to African countries as Zimbabwe, South Africa and the DRC have engaged various reforms. China is employing a proactive approach to empowerment focused amendments in Zimbabwe and South Africa and actively engaging with the host governments. Partnerships, offering loans and backing government institutions and

indigenous enterprises is adding essential political leverage to China`s activities in Africa countries. In South Africa, China has previously blatantly circumvented BEE legislation successfully in previous investments but the Wesizwe Limited-Jinchuan Group $800 million partnership presents a situation where China has abided by BEE requirements. The chapter displays that as China`s interests in Africa continue to grow socio-economic issues such as migration will require China to accept accountability and direct involvement will be imperative for Sino-African relationships going forward. African countries will need to tighten immigration controls and monitor the numbers of Chinese migrants to protect local informal businesses. The current laxity on immigration is clearly not a sustainable approach.

The chapter argues that investor diversity undermines reform as BRIC companies become increasingly influential in African mining sectors. Chinese companies generally not governed by standard regulatory requirements from raising capital to issues such as CSR, environmental stewardship, bribery and transparency among others. The ‘closed shop’ negotiating styles of Chinese companies mean that they engage with the host government and this practise at times undermines reform.

Chapter 5: *Effects of China`s resource demand on key global markets*

5.1 Introduction

Nichols (2011) in analysing developments in commodity markets, states that, the price of a commodity is a function of past and prospective world economic, demographic and political developments. In analysing these current trends and developments it is possible to draw valuable insights. More importantly, global markets are governed by various factors that determine how producers and buyers interact. In this regard, the iron ore industry has been profoundly affected by Chinese demand. More significantly the fragmentation and production standards in China`s domestic steel industry have led to shifts in traditional trade practice. Iron ore commands the highest import product value in China`s ore imports, an estimated 72% of a total value of $70 billion in 2009, Business of mining (2010). The interdependcy of global industry is arguably at its ultimate in physical iron trade, where market power constitutes economic advantage measured in billions of dollars. From this perspective, the chapter investigates how China has increased producer power in the iron ore market, the challenges this development has introduced and the counter measures China is employing.

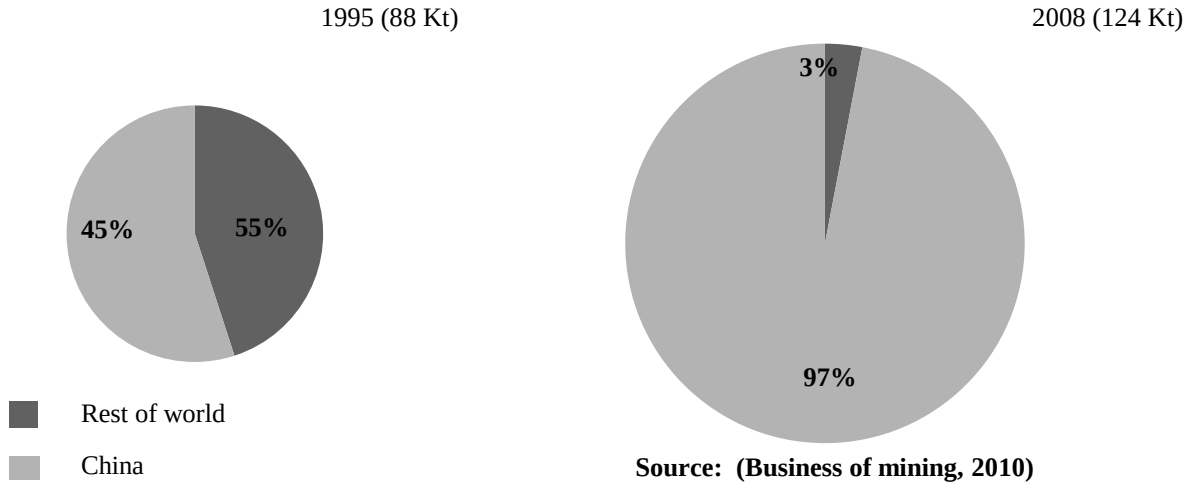
In the case of rare earth elements (REEs) China as the dominant producer is dictating trade volumes through stringent export quotas. Demand is outpacing production and new projects have extensive inputs that further delay production. Global demand is estimated to stand at 134,000 tons per year while production is 124,000 tons annually and world demand is projected to rise to 180,000 tons annually by 2012, while new projects will take up to 10 years to come online, Humphries (2010). China`s mining industry has been increasing production and productivity from the 90`s and the country`s REE sector represents these cumulative developments on a grander scale. Concerns have been raised about China`s market manipulation and political agendas in the REE industry. The chapter addresses these

concerns and the potential for trade wars between China and the industrialised countries in the face of growing hostilities.

5.2 Productivity and Production gains in China` mining industry

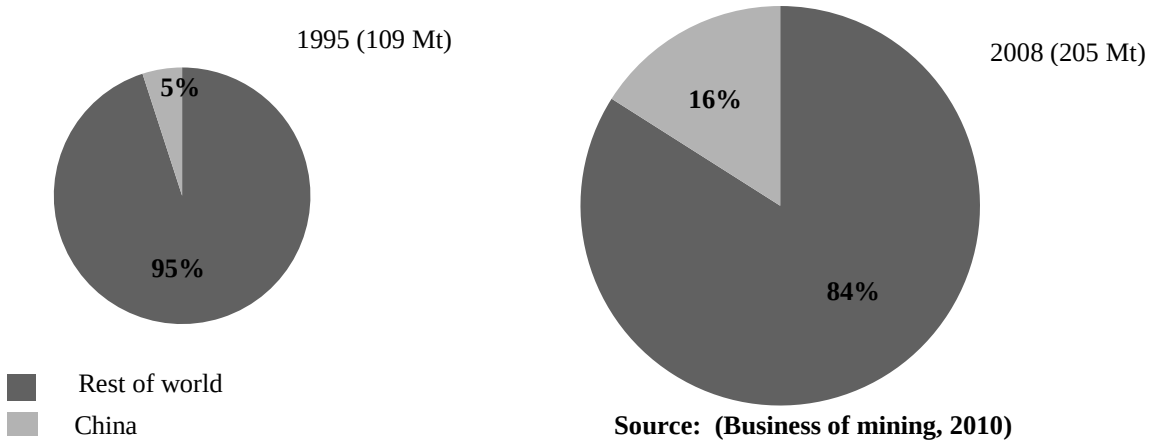
Since the 1990s China`s mining industry has undergone rapid development. The current market dominance in the REE sector is characterised by remarkable productivity and production gains (Figure 13). Although to a lesser extent, this trend has occurred across all major minerals bauxite (Figure 14) and iron ore (Figure 15). Iron ore and REEs represent the most remarkable production and productivity gains and reflect the state's ability to strategically improve production in key mining sectors. China has managed to increase share of global output by 52% and 13% in both sectors.

Figure 13: China`s share of global REE mining output



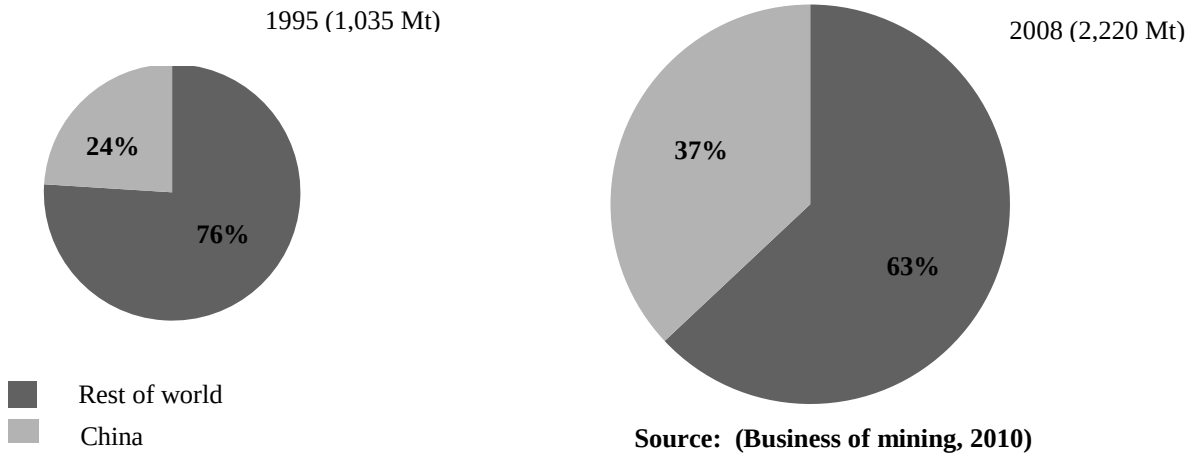
Source: (Business of mining, 2010)

Figure 14: China`s share of global bauxite output



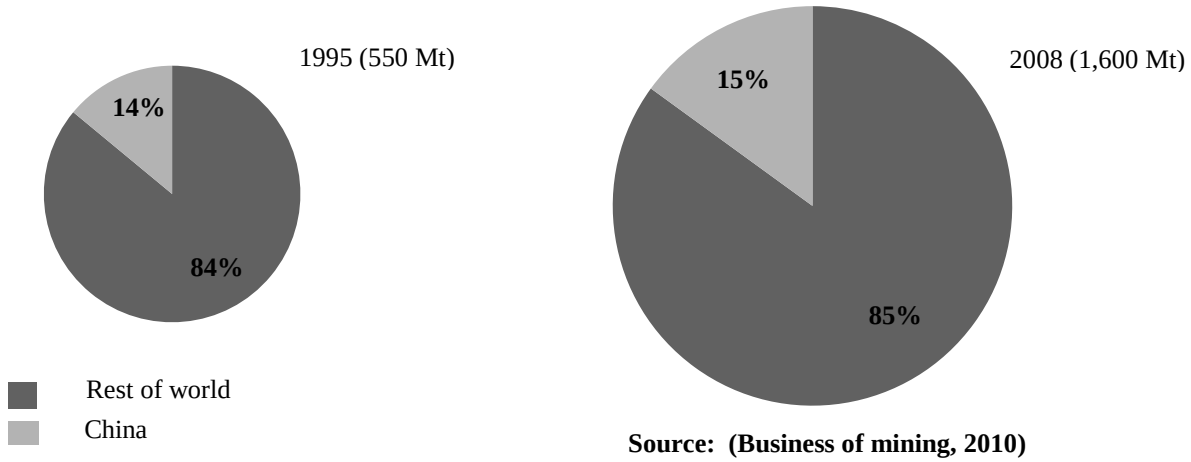
Source: (Business of mining, 2010)

Figure 15: China`s share of global iron ore output



Source: (Business of mining, 2010)

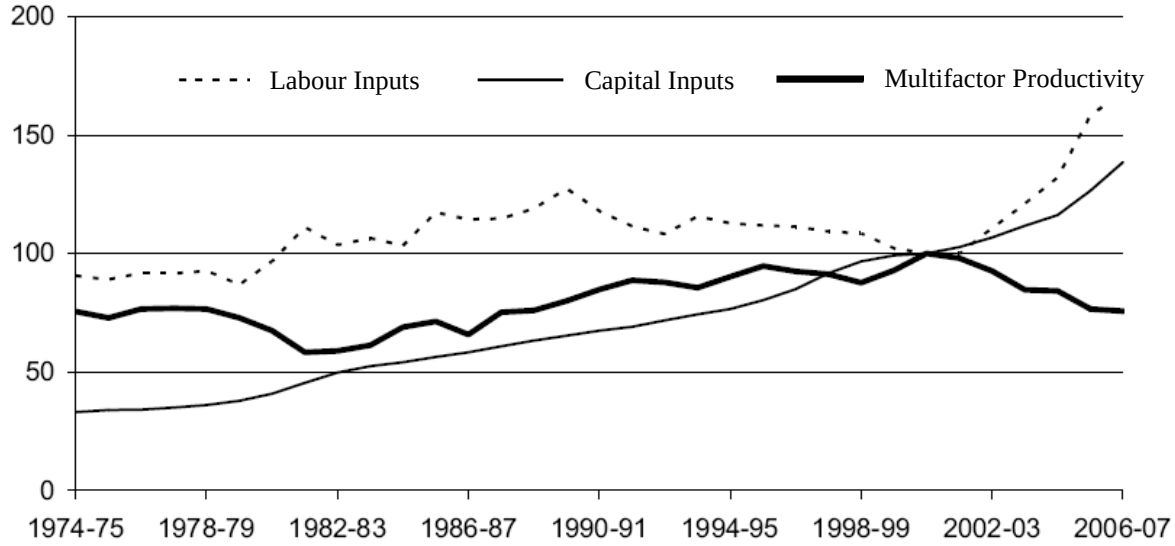
Figure 16: China`s increase in iron ore content



Source: (Business of mining, 2010)

China`s iron ore content improved from 14% to 15%, this is notable considering the fact that Chinese iron ore has extremely low metal content (Figure 16). The above data highlights that while production, the physical output of minerals has increased, productivity has also increased. The Australian Productivity Commission (2008 p. 4) provided that productivity is a multifaceted entity, "it can broadly be interpreted as an indicator of the efficiency with which capital and labour inputs are used to generate output of goods and services. The efficiency of production is determined by factors such as technology, management, skills and work practice." For the more advanced economies, mining productivity has generally fallen. In the case of Australia, productivity has been on a downward trend since the 1970s (Figure 17), due to the rising costs of inputs such as labour and capital.

Figure 17: Australian mining industry productivity



Source: (Australia Productivity Commission, 2008)

The productivity gains in China are a combination of two factors, investment in technology and restricted wages. China has had the advantage of add more workers without increasing wages, Garnaut and Song (2007). The success of the REE sector has been attributed to investment in research and development. State-run ("State-Key") labs in China have been involved in research and development of REEs for over fifty years. There are two State-Key

labs: Rare Earth Materials Chemistry and Applications, focusing on REE separation techniques and is affiliated with Peking University, and Rare Earth Resource Utilisation, which is affiliated with the Changchun Institute of Applied Chemistry, CRS (2010 p 12).

5.3 REE Industry: China supply chain concerns

5.3.1 China manipulating REE global supply

The REE industry is arguably one of the most strategic sectors following the energy sectors of oil, gas and uranium. The 17 rare minerals are utilised in almost all modern applications, from high precision military systems, household and industrial electronic devices to renewable energy devices. China now controls 97% of REE global supply (Figure 13). Intellasia.net (2010) suggested that China is manipulating the REE market. China has the resources and capacity to produce enough lanthanum, terbium, neodymium and dysprosium to satisfy global demand requirements, however the REE earth export allocation for 2010 was about 38,000 tonnes, which is less than the quantity required by Japan alone.

Western governments and observers have argued that China is manipulate the REE market, on the hand such views ignore China`s domestic requirements. Global resource markets are already straining and in most cases failing to supply China`s resource intensive economy. For most mineral classes, domestic mining output is immediately utilised in domestic requirements. Kolodny (2010) defended China`s position. China is planning to build 330 Giga-watts worth of wind generators, requiring an estimated 59,000 tons of neodymium to manufacture high-strength magnets, which is in fact more than China`s annual output of neodymium. The refocusing of world energy markets to renewable energy and the strong growth of high – tech sectors are the main drivers of REE demand. The strategic nature of

REEs means that China will have to compromise energy capacity and industrial technology requirements for diplomatic relations.

5.3.2 Potential for trade wars from China`s REE supply restrictions

China imposing quotas on REE supply acts as a foundation for conflict and could potentially result in trade wars. The fact that has been facing growing opposition from the World Trade Organisation (WTO) to comply with regulations compounds the situation. WTO member countries are not permitted to set quotas and China is in direct violation of this stipulation. The issue of market practice also comes into question. Chinese policy skews markets in favour of Chinese downstream producers through export restraints such as export licensing, minimum export price requirements and export quotas, USTR (2009). The United States Trade Representative highlights that China`s conduct in the REE scenario is mirrored in other key sectors. In 2008, with 60% of global production (336 million mt), China was the world's leading coke producer. China placed export quotas on coke that limited annual export to 12 million and export duties. The downstream effect was that China`s steel producers had a significant advantage, China's domestic price for coke was $472/mt, while the world price for coke was $740/pmt.

Some observers predict an eminent trade war between the developing nations and China, in particular the U.S. and China. This is a possibility considering the fact that trade balances will only be restored in 2014, implying that the U.S. military is vulnerable, Stepek (2010). Trade wars result in retaliatory measures that damage both parties and the fact that REEs are so vital means the U.S., Japan and the EU will be cautious to ensure supply, however minimal. For China, Western nations are the prime destination of Chinese exports. To some extent China has the upper hand and is exercising its power as the dominant supplier. Beijing proceeded to

halt all REE imports to Japan after a Chinese trawler was detained by Japanese trawlers, Stepek (2010). The WTO ruled in favour of the U.S. imposing duties on Chinese steel pipes and following the ruling, China retaliated by delaying and blocking REE shipments to the U.S., Japan, and EU, Wall Street Newscast (2010). Isolationist policies would harm all economies involved. With trade liberalisation and an integrated global economy '*autarky*' is not a reality; the idea that a country can separate itself from global trade and exist in an isolated, complete or partial state, as a 'utopian' notion, Russett et al (2009 p. 368). The argument is based on the simple fact that it is not possible for any country to produce the complete range of products and services required to meet its domestic requirements. For both China and the U.S. it is not possible to isolate vital key links in the supply chain and markets.

5.3.3 Effects of China`s stockpiling and policy on scarcity, availability and price

Stockpiling has long been used as tool to secure strategic commodities by national governments. China`s State Reserves Bureau (SRB) has been stockpiling key commodities for industrial requirements such as oil, coal, bauxite and copper among others. Stockpiling protects a high consuming nation from market disruptions. "The primary purpose of stockpiling is the amelioration of supply disruptions which can take the form of international political conflict, natural disasters or technical malfunctions" Nieh (2006 p. 13).

Industrialised nations, the U.S., the EU member states, Japan and South Korea have employed stockpiling policies but the global effects of these policies have not been to the same magnitude as China. The differentiating factor is China`s high resource intensity but more importantly while the global recession affected global consumption China aggressively purchased raw materials. Chinese raw materials buyers were able to secured easily accessible bank loans to capitalise on low commodity prices and low shipping fees during the recession,

The China Analyst (2011). This lead to commodity prices increasing due to speculation and overproduction in anticipation of a global recovery but the government is employing measures to reduce rising commodity prices. China`s National Development and Reform Commission has been implementing measures to limit heavy industry overproduction and reduce further building of excess capacity, Sydney Morning Herald (30 June 2009). It is not the direct demand of raw materials by China that has pushed up commodity prices but a combination of speculative factors, ranging from overproduction, excess capacity and access to capital.

In view of resource consumption, competition and conflict the 'static scarcity paradigm' has been proposed. The assumption is that there exists only a finite amount of resources and, therefore, development, consumption and competition will deplete resources to a point where we will be left with a world in conflict over limited resources, The Hague Centre for Strategic Studies (2010). This view may seem rather extreme; it has been argued by mineral economists that the consequences of mineral scarcity depend on interrelations between substitutes and technological innovation and policies among others. In the case of REEs Australia, Greenland, Canada, Russia, Malawi and South Africa have sufficient resources to restore market balances but it is case of policy that is affecting availability, not scarcity. Firstly, failed policy on the part of the developed nations to develop REE reserves outside of the PRC and secondly, effective policy on the part of the China. China was able to produce REEs at low production costs through investment in research and development the low cost advantage rendered mining outside of the country unprofitable. China extracts most it's REEs from iron ore tailings therefore the costs of exploration, mining and a share of the processing costs are cut out, The Telegraph (24 April 2011)

5.4 China`s aggressive industrialisation and optimal extraction theory

Hotelling`s rule of optimal extraction, Hotelling, (1931), provided that producers should be indifferent to preserving resources in situ, extracting and selling or saving resource revenues as the price net of marginal cost must rise at the market rate of interest. Therefore prices of non-renewable resources are predicted to rise and mirror behaviour in financial markets. Modern economist appears to favour aggressive extraction and the advantages it brings. "It is optimal for governments to extract oil more aggressively at the expense of future oil production and to set up precautionary buffers to cope with volatile oil demand and prices and enjoy more monopoly power", OxCarre (2009 p. 4). Given the turbulence in resource prices, China`s resource requirements would point to governments adopting aggressive extraction policies to capitalise on current high prices. Prices of natural resources have mostly decreased over time, not just in recent years but in many cases and for decades, Simon (1996). The monopoly advantage that the PRC holds in the REE sector provides aggressive and prudent producers with great opportunity. Current 'inflated' resource prices will encourage new market entrants and in time prices will fall to normalised levels.

China's growth is predicted to become more resource intensive. The pressure of Chinese demand on global resource markets is now only in its early and moderate stages, (Garnaut and Song (2007). Demand will continue for the sustainable future and increase. The population distribution of China provides a useful indicator of the sustainability of high resource requirements. Yahya, (2009) states that in 1998 China had 10% of its population over 60, the United States 14% and the UK 20%. Resource intensity will increase, given than China`s population is younger than the industrialised nations, on average the economy is growing at double the global average and the growth rate per annum equals the entire population of Cuba. The state government has been imposing legislation and measures to

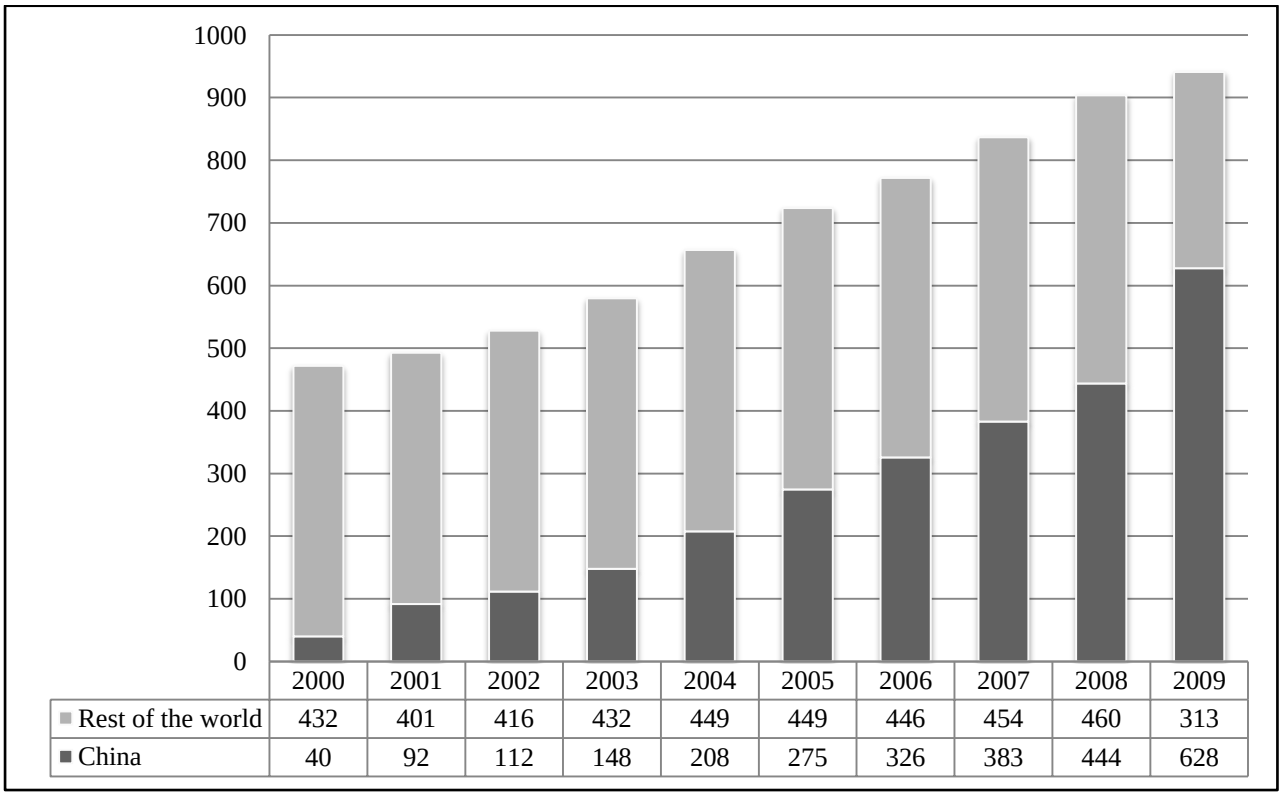
reduce commodity prices, from increasing stakes in strategic sectors to cutting back on stockpiles and restricting industry overproduction. In real terms prices will remain higher than historical figures but there is bound to be an adjustment and prudent producers must capitalise.

5.5 China`s impact on the iron ore industry

5.5.1 China`s increasing iron consumption

Statistics show that Chinese iron ore consumption has risen steadily from 2000 and the major share of global iron ore trade volume is consumed by China. In 2009 China imported 628 million tonnes of iron ore, from a total global trade volume of 941 million which equates to 67% of global trade volume (Figure 18). The steel requirements based on domestic demand have been the driving force of the increase in iron ore consumption.

Figure 18: Global consumption of global iron ore exports (million tonnes)



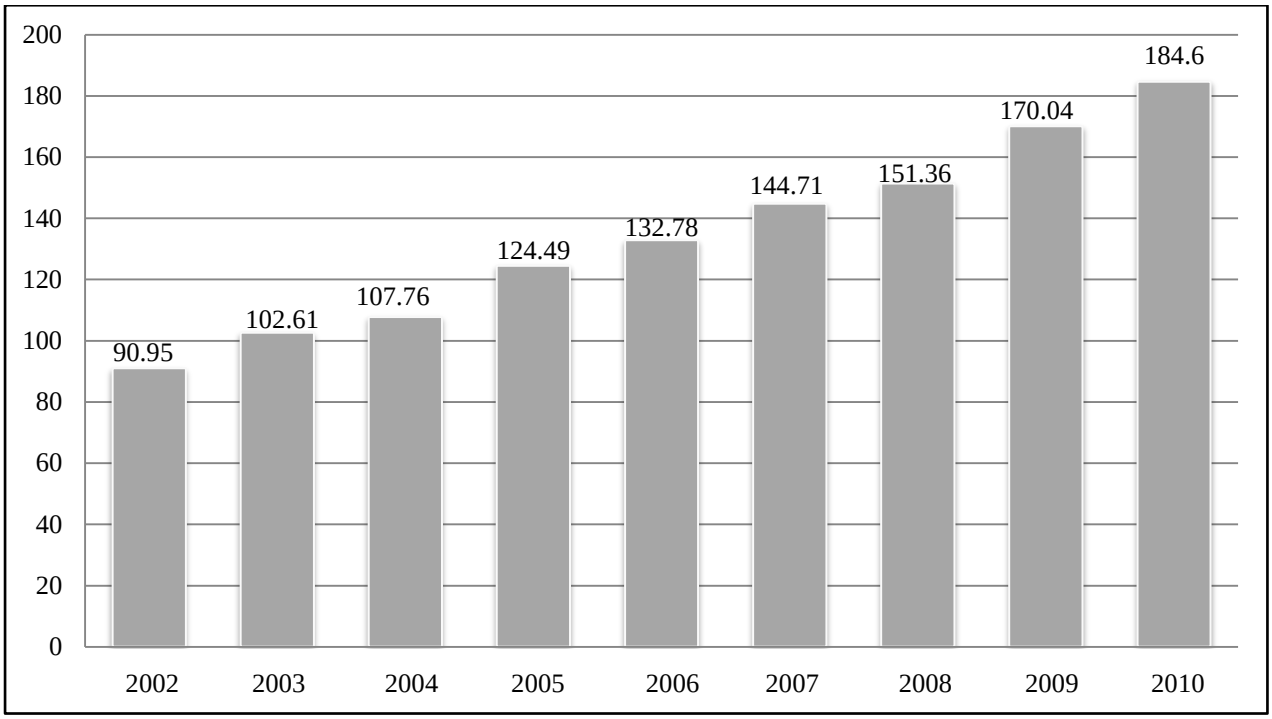
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Rest of the world	432	401	416	432	449	449	446	454	460	313
China	40	92	112	148	208	275	326	383	444	628

Source: (Shanghai Steel Home, 2011)

5.5.2 Impact of China`s iron consumption on iron producers

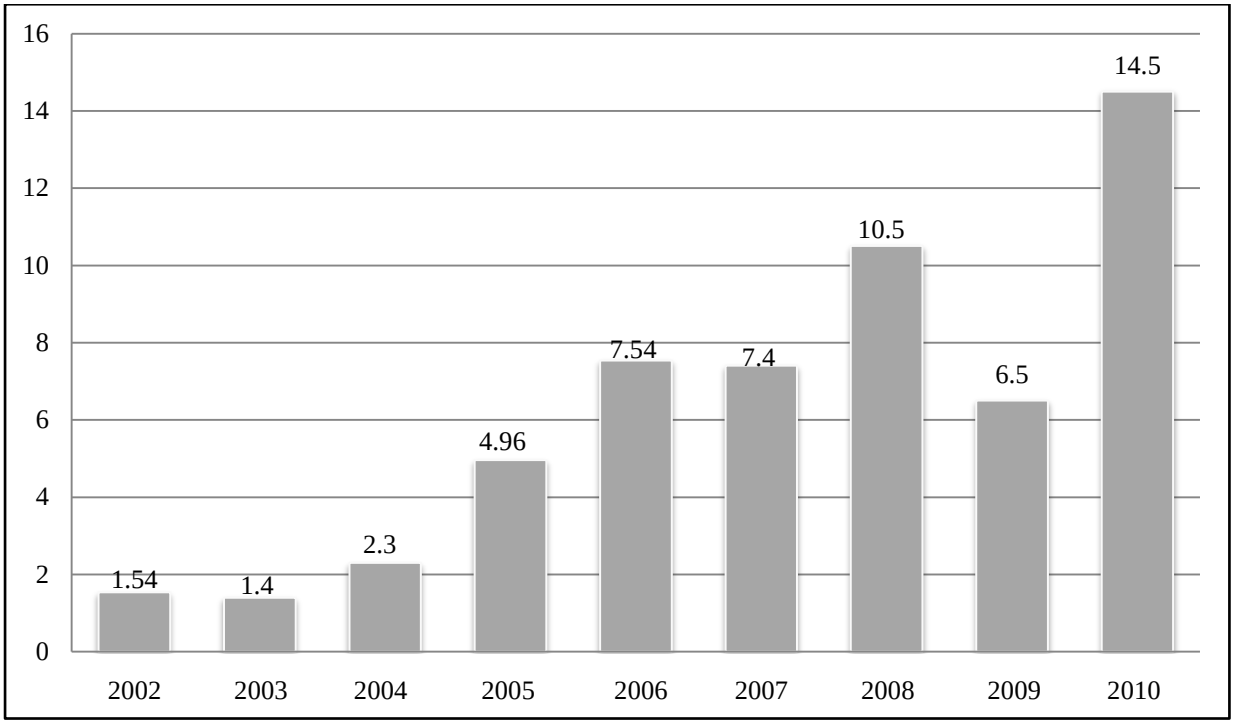
The world`s top three iron producers Vale, Rio Tinto and BHP Billiton have gained bargaining power from China`s iron ore demand. The three producers control 70% of all seaborne iron ore trade and dictate the price and pricing terms that the remaining producers follow, Metal miner (19 April 2010). An inspection of Rio Tinto`s production and earnings shows a steady increase in line with China`s growing iron consumption. Iron ore production increased by 39% from 2006-2010 (Figure 19), and profits rose by 192% over the same period (Figure 20).

Figure 19: Rio Tinto`s iron ore production figures 2002 – 2010 (million tonnes)



Source: (Rio Tinto, Shanghai Steel Home, 2011)

Figure 20: Rio Tinto`s Earnings 2002 – 2010 (USD billion)



Source: (Rio Tinto, Shanghai Steel Home, 2011)

The rise in profit from 2009-2010 was due to a shift in pricing mechanisms and although production increased by only 8.5%, profits rose by a staggering 123%.

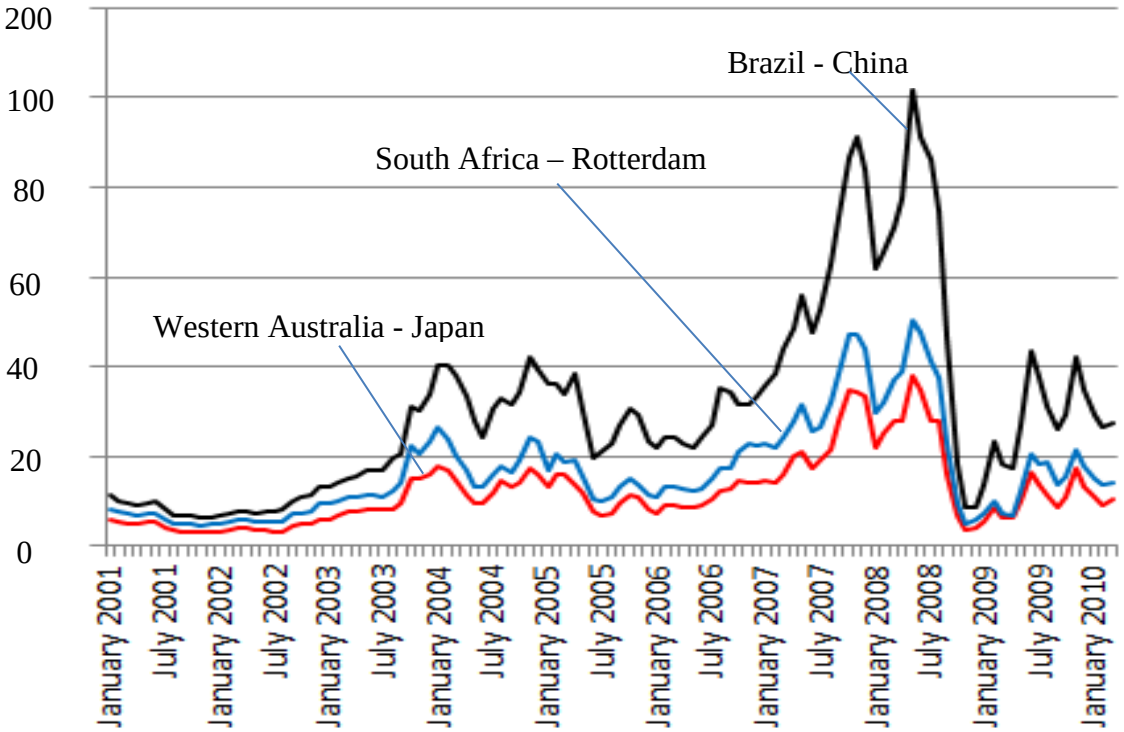
5.5.2.1 An analysis of iron ore annual pricing system

As the largest dry bulk traded commodity, iron ore has traditionally been traded and marketed in set procedures. The traditional pricing system was devised to ensure equitable conditions and parity in market power between buyers and sellers. Steel mills and iron ore producers negotiated directly, setting an annual contracted. The annual system devised in the 1970s was the first deal between miners and steel mills, coinciding with the growth of Japan's steel industry and the rise of Brazil as a miner (Trevethan, 2010). This traditional bi – lateral system utilised in iron ore trade had several limiting factors that reduced producer power. According to Eggert and Howie (2001, p. 74), price transparency in bi-lateral contracts can be limited and the published prices are for spot prices and do not reflect prices for longer

term contracts. The relationship between transparency and producer power is a complex one. Generally speaking, increased market transparency has weakened producer power. From the 1970s increasing producers linking their prices to exchange prices has coincided with declining producer market power for aluminium, copper, lead, nickel and zinc producers Eggert and Howie (2001).

The London Metal Exchange (LME) has been the principle regulator in ensuring transparency and agreement between buyers and sellers and producers could no longer dictate prices. Bulk commodities are not traded on exchanges for economic reasons; they require large storage space which makes them less economic than metals. Another factor is that there are different iron requirements by region, North American and European steel mills use pellets while China and other steel makers use fines, CME (2010). For these reasons, iron ore was not impacted by the drive for transparency. Radetzki (1990) provides that annual bilateral contracts are characterised by major suppliers entering into negotiations with major customers and a bench mark is set that is followed by the rest of the industry. The challenge with the annual contract pricing mechanism is that although there are provisions for drastic price escalations the producer generally deals with freight costs. In 2008 producers were faced with high record freight costs, with Brazil-China freight costs surpassing $100/ton (Figure 21).

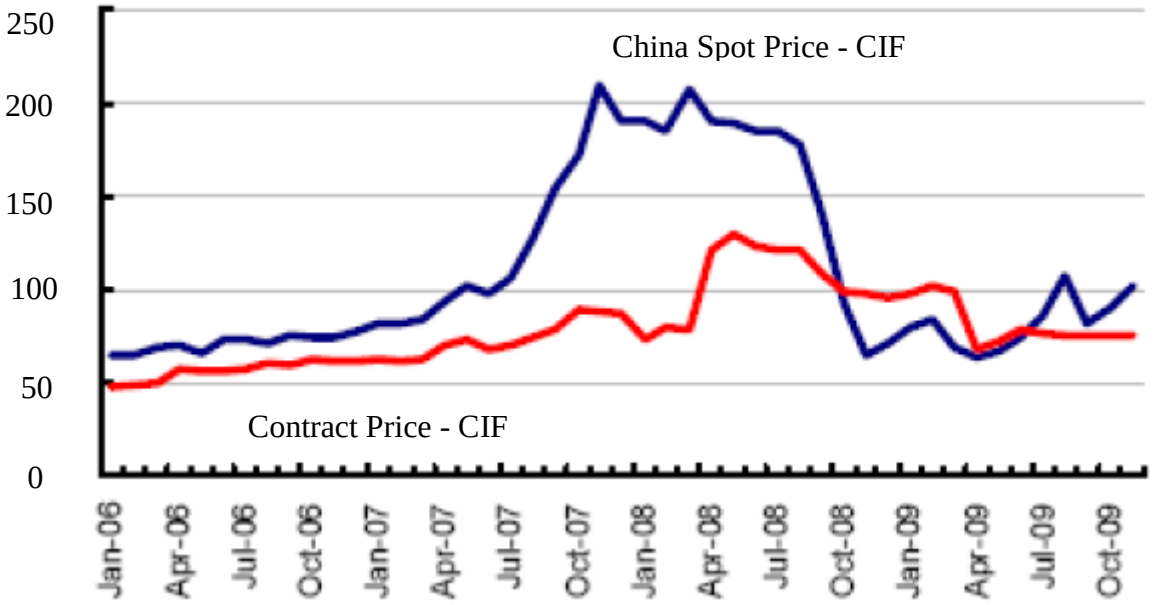
Figure 21: Freight rates for iron ore 2001-2010 (US$/ton)



Source: (Caromb Consulting, 2011)

Arguably, 2008 represented the turning point as seaborne iron traders realised they stood to make significant gains from spot trading or 'shorter' term contracts. The profits to be realised in selling of the spot price are justified as illustrated by research from Daltorio (2010). For the big iron ore mining companies deriving 30% to 50% revenue from iron ore sales, a $1 per ton variance in price means about $80 million difference on the bottom line. Figure 22 highlights the differences in spot market and contract prices for iron ore.

Figure 22: China Ore Price, 63.5% Fe Fines (US$/DMT)



Source: (Shaw, 2009)

5.5.3 The role of China`s steel industry in global iron pricing

5.5.3.1 China`s steel producers increase spot trading

China`s steel mills demand led to iron ore producers increasingly trading on the physical spot market and seeking, medium term contracts. The contributing factor was poor planning on the side of Chinese steel mills. Chinese steel firms did not abide to established industry rules; they invested in blast furnaces prior to securing iron ore supply, causing demand surges prior to operation, Singh and Hoyt (2007). The net effect was the development of spot market trading with a multitude of Chinese firms requiring immediate supplies to commence and sustain steel production. Spot market trading meant that there were less long term contracts and no long term relationships between buyers and sellers, therefore buyers secured higher prices and steel firms secured immediate iron ore supply.

5.5.3.2 The contribution of China`s fragmented steel industry

Fragmented industries are characterised by a high numbers of small competitors and structural factors that inhibit concentration such as low barriers to entry, lack of standardisation, highly specialised markets and extreme enterprise specialisation, Planning skills Online (2011). China's steel industry is highly fragmented. Emerging Markets Direct (2010) estimated the number of Chinese steel firms to be well over 800. Burns (2010) underscores the increasing fragmentation; steel producers have expanded in size from 10% of the market in 2000 to 45% by 2010 due to factors such as 'cheap' bank loans, low cost land and minimal environmental and planning restrictions.

The quarterly pricing system mechanism utilised by the major iron ore producers from 2010 has stemmed from this fragmentation. Rio Tinto joined BHP Billiton and Vale in securing quarterly and not annual contracts, Smith (2010). For the Iron Ore and Steel Derivatives Association (IOSDA) which protects the interest of the producers, the switch still does not cover the producers for price volatility and index pricing would be more appropriate. The volatility inherent in the delivered price of iron ore means that quarterly pricing mechanisms adopted in 2010 by producers are inflexible and short term index based pricing provides a more effective hedge, IOSDA (2010). In response to these concerns there appears to be potential for further behavioural changes in seaborne iron ore trade, the Australian company PHP Billiton has already began selling more output on monthly contracts. The major iron ore producers are planning to switch from quarterly to monthly index pricing, based on The Steel Index (TSI), the Metal Bulletin Iron Ore Index (MBIOI) and the Platt's Iron Ore spot market assessment (IODEX) as their pricing references, China Business News (25 February 2011).

It is anticipated that spot pricing and short term contracts will increase volatility in the iron ore industry. Short term volatility is caused by a combination of three things, information,

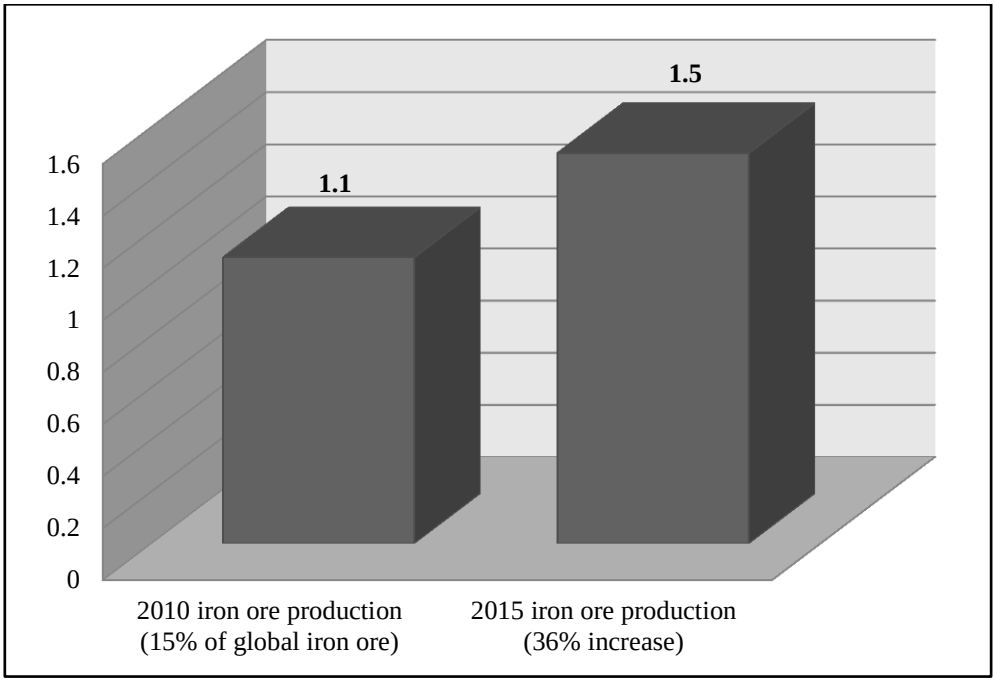
speculative pressure and physical availability of the mineral or metal, Brunneti and Gilbert (1995). According to the authors, the passage of information has increased in modern trading and market agents can react quicker to 'new' information, from natural disasters pushing up demand to new legislation or growth forecasts. Speculative pressure leads to hedgers and speculators playing off each other, forcing and accommodating changes. Regarding physical availability, if unanticipated increases in demand occur when inventories are low, prices will rise to balance the market. Iron ore inventories at 25 major Chinese sea ports stood at 92.48 million metric tons in 2010, staying above the 90 million metric ton gauge, IstockAnalyst, (2010). However the high production rates of Chinese mills mean that high iron inventories are soon exhausted and prices will rise. In accordance with market sentiments, volatility has been observed in the physical iron market, but on the upside, short term contracts have contributed to rising iron ore prices. Rio Tinto and Vale through three-month contract pricing system pushed global iron ore contract prices up by 62% within 12 months and, Vale recorded a threefold gain in the third quarter of 2010, Want China Times (15 January 2011).

5.5.4 China`s efforts to stabilise iron prices and reduce producer market power

If concentration of ownership in seaborne iron ore is to be reduced, China as the world`s largest importer of iron ore holds the solutions. The approach will be three-fold, consolidation and increased regulation of the domestic steel industry, increasing local iron ore production and increasing ownership in foreign iron mines. All three tenets are at advanced stages. The country`s new policy is to eliminate steel mills that produced less than 1 million tons of crude steel in 2010 and manufacturers of higher end steel will need to produce more than 300,000 tons a year to remain in business, China Business News (13 July 2010). The policy changes will also include tighter legislations on financing and land use.

Long term, the country will have to increase global iron ore mining share to have a stronger influence on pricing. On the domestic front, the early parts of the chapter provided that China has been increasing iron ore content despite poor quality deposits and increasing its share of global iron ore mining output. Domestic production is anticipated to increase; iron ore production will increase to 1.5 billion tons by 2015, from 1.1 billion tons in 2010 (Figure 23). Domestic production will need to be consolidated by increasing stakes in overseas ventures.

Figure 23: China`s Increase in domestic iron ore production 2010, 2015 (billion ton)

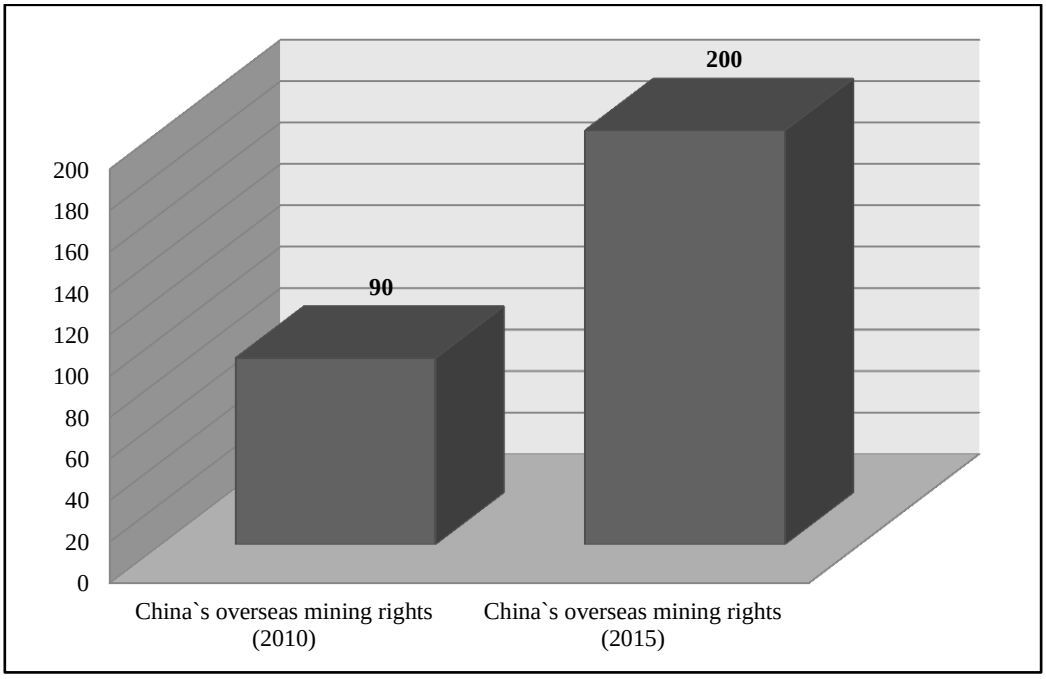


Source: (China Daily, 25 March 2011)

The third strand of China`s efforts and arguably the most significant, is increasing ownership in foreign iron ore reserves. Overseas iron ore mining rights controlled by Chinese mining firms will increase to 200 million tons by 2015, from 90 million tons in 2010 (Figure 24). Furthermore, Ernest & Young (2011) highlight that China's share in mining MA rose by 3% from 2009 - 2010, from 22% to 25%. Based on current patterns and trends, by 2015 China

should sway the current balance and command an iron ore mining output of between 40 – 50%.

Figure 24: Overseas iron ore mining rights under Chinese Control (million tons)



Source: (China Daily, 25 March 2011)

5.7 Chapter Summary

The chapter found that China`s mining industry has been making significant strides since the 1990s, increasing production and productivity. The current REE industry market dominance is representative of the progress China has been making in the mining industry as whole through investment research and development. The productivity gains have been largely due to the fact that China has had the advantage of adding more workers without increasing wages. Concerns about China`s REE manipulation appear to be unfounded as China has domestic requirements for the minerals, particularly in the case of neodymium in wind generator production.

The chapter also found that trade wars would harm the U.S., the E.U. and China. Isolationist policies would harm all economies involved and in increasingly integrated global economy, '*autarky*' is not an option for all interested parties. Regarding extraction, researchers are advocating for aggressive extraction policies, given high commodity prices.

China has impacted the Iron ore industry. Statistics show that Chinese iron ore consumption has risen steadily from 2000 and the major share of global iron ore trade volume is consumed by China. The steel requirements based on domestic demand have been the driving force of the increase in iron ore consumption. While fragmentation, overproducing and speculative practises have led to high iron ore prices and an increase in producer power, China`s government is putting in place measures to restore trade balances. These include increasing ownership in foreign iron ore mines, increased domestic iron ore output and stringent regulation of the domestic steel industry.

Chapter 6: *Research Findings and Conclusions*

6.1 Introduction

The research attempted to analyse how key markets and African resource rich countries are responding to Chinese demand. Also how China`s central government is responding to the country`s rapid economic development and resource requirements. By examining the socio-economic and political impacts of strategy, policy and legislation by China`s central government and African states, the research attempted to address some of the emergent issues in global resource trade. The study explored the nature of the relationships and trade agreements between China and various African jurisdictions, namely Angola, the DRC, Niger, South Africa, Zambia and Zimbabwe among others. The impacts of indigenisation and empowerment reforms were analysed and how China is protecting its interests and aligning itself to such reforms. The effects and implications of the increased policy space for African countries, China`s impact on multilateral institutions such as the International Monetary Fund (IMF) and emerging challenges such as uncontrolled Chinese economic migration were some of the key research questions. An immediate observation is a profundity in Chinese enterprises and a growing proclivity for preferential resource investment from China by African states for various reasons; such as China`s protectionalism for African countries during the global economic downturn and the non-conditionality of Chinese loans among others. Turning from Sino – African activities to global markets and trade, the research explored the manner in which China has shifted traditional market practice in global iron ore markets and the strategic domination of the REE market is a source of concern for industrialised nations.

6.2 Contextualisation of 'China': *Business philosophy, Economic Growth and the SOE*

6.2.1 Understanding China`s Business Psyche

China`s resource acquisition drive and investments must be contextualised in respect of China`s unique business culture. Chinese business enterprise has a distinct identity whose success will potentially redefine modern business practise. It was found that Chinese approach to business has clear demarcations to Western practises and approaches. China is not seeking to emulate current 'best practise' approaches but to employ its own methods and assert its own identity. The Chinese negotiation style is largely verbal and open ended and most agreements will be made over the table but the translation of the agreements into written contracts becomes challenging. The collective nature, the 'holistic' relationship centred approach, the indirect approach and 'limited authority' of Chinese negotiators means that negotiating with Chinese companies is a very complex process. With respect to Sino-African agreements, negotiating dynamics become a major point of concern and potential hurdle. China`s overall approach to resource for infrastructure agreements has the core elements of the largely misunderstood Chinese style to business.

Furthermore, concerns have also been raised on Sino-African large scale construction projects neglecting issues such as quality and maintenance in scope and activity and opening room for circumvention by Chinese companies. It is common place that in Sino-African resource for infrastructure deals, Chinese SOEs form tripartite consortiums that mobilise funds and carry out all agreed activities without the host nation receiving any funds or partaking in most of the processes, with the funds being reimbursed by minerals/oil. This opens up room for circumvention and huge profit potential on the part of Chinese companies. However the Chinese approach to business does have positive aspects, the long term outlook, the ability to finalise deals in short periods, limited preconditions and the extent and makeup of deals is tailored and varies from country to country.

The section concludes that there is still a considerable amount to learn about China`s culture, business dealings and negotiating styles. China is constantly accused of lacking transparency and exploiting African jurisdictions to gain access to resources. While there is a strong element of truth in such views given the exploitative and self-serving nature of market relations, O'Brien and Williams (2004); such views discredit the astuteness and some of the positive attributes of China`s approach to business. While China has aligned itself to modern business practises; the chapter shows that there are distinctive elements to Chinese business that the rest of the world has not caught onto yet. The success of China`s exploits bespeak that China is ahead of current practice. Besides the strong financial base, it appears China understands the business environment from a different angle to conventional views.

6.2.2 Growth of the Chinese Economy as the principal driver of China`s resource demand

China`s economic growth is fuelled by demand for natural resources. China has maintained a consistent economic growth since post 1978 reformations and in 2010, the country overtook Japan to become the world's second largest economy in 2010 after the U.S. Manufacturing and urbanisation have been the main sources of the country`s record demand for natural resources. These growth rates have been sustained by the fact that China has been able to attract FDI into specific domestic industries, with focus on manufacturing and heavy construction in the 1990s and current regulations that favour investment into high-tech service industry. Therefore forecasting China`s resource demand and maturation of the economy through standard models such as the Intensify of Use Hypothesis is difficult given the effective use of policy by the government to attract FDI.

China`s economic growth has created speculation and optimism among resource producers, which has in turn contributed to high prices. On the large part indicators point to sustained economic growth in China. However there have been concerns about overcapacity and over-

investment in China`s economy due to the ease of access to money. The year 2011 has already witnessed demand weaken in commodities such as copper as China`s government increases regulation of the banking system. Such events are of concern to global producers and the clearly the key determinant in China`s resource demand is policy and a stable political system. It is worth noting, there is a large aspect of unsustainability in China`s economic growth given soft regulations and the role of inexperienced investors becoming involved in major business ventures. If the government continues to limit bank lending this will affect China`s growing construction industry as the world`s prime consumer commodities such as iron ore and copper and the 'cash-crunch' spill over into the manufacturing sectors.

6.2.3 The evolving role of the SOE China`s economy

It was found that the Chinese SOE as the central vehicle in executing China`s strategies has been undergoing various changes. The SOE operates in key industries and is one of the main determinants of China`s economic success going forward. One of the most significant, unnoticed and unpublicised developments, is the forward looking strategy adopted by the CCP. Chinese SOEs are typically recruiting talented youth in comparison to experienced professionals therefore the ideals of the CCP can be passed onto the youth but more importantly, there is longevity and a reformist approach in the SOE. If there are any threats to China`s one party system and the viability of the SOE, such threats would logically come from the youth and intellectuals. By engaging and recruiting the young intellectuals into Chinese SOEs, the establishment is likely to remain a permanent feature of Chinese enterprise. While it is viewed as backward organisation by external observers, in China it is highly appealing to the youth. It is thus logical for talented graduates to join the ranks of an SOE in comparison to the private sector from a financial and nationalistic point of view.

Another major development has been a shift in ownership structure and a reduction in number. In most cases the state is not the sole owner of most SOEs, but retains majority shareholding. Therefore SOEs can source external capital and increase competiveness but ultimately remain under control of the state; companies like Sinopec have done this to good effect. Sinopec (2000) points out that through the first initial public offering (IPO) in 2000 Sinopec was able to increase capitalisation; given the capital intensive nature of the oil and gas sectors the company was able to access global capital markets.

The reduction in number has been accompanied by an increase in size and is motivated by efficiency and profitability concerns. SOEs are becoming larger, more efficient, more market oriented and generating higher revenues. This has been done by merging and dissolving efficient and inefficient organisations and a drive to operate in capital intensive industries. This has resulted in Chinese oil and mining companies generating some of the highest revenues and generally being larger than conventional organisations. Chinese SOEs in strategic areas such as mining have a competitive advantage in that they are being able to operate on financial losses, low profit margins and have high levels of diversification. The activities and success of the Chinese SOE are ultimately based on the China`s strong financial reserves and state mandate.

6.3 *China`s strategies to resource investments in Africa*

6.3.1 The role of 'man-made' capital in resource decisions and activities

It was shown that capital is the distinguished factor that has led the success of Chinese companies. Bradley (1979) argues that the role of 'man-made' capital has been neglected as academia has considered natural resource stocks as forms of capital. The impact China has had on African resource rich nations in exploitation of natural resource stocks is line with this argument. Traditionally attracting investment has been a challenge for African countries and economic growth has largely been stunted while most countries have held abundant unexploited stocks. China`s access to capital means that China can influence investment decisions of African countries and further more African countries can convert the resource stocks from 'potential capital' to economic 'usable capital' and facilitate economic development.

China`s banking system is highly regulated by the state and has contributed immensely to the country`s industrial development. From the 1960s the government has utilised the banking system to facilitate production programs and government objectives. Policy lending became a major part of China`s growth strategy, where banks lend money according to government directives and not standard commercial principles. China` biggest banks, The Bank of China Ltd, Industrial and Commercial Bank of China Ltd, China Construction Bank Corp and the Agricultural Bank of China Ltd are China`s biggest banks do not necessarily operate as 'normal' banks. These SOCBs favour SOE and the fact that the government has such large financial reserves means the banks can lend as directed and are not answerable to shareholders who expect a profit. From this perspective Chinese companies, particularly

SOEs have grown in size and influence at the rates they have due to access to capital and state support.

The section also brings to the fore the fact that mining along with real estate investments are becoming the major clients of banks. This means that while major labour shortages as costs of labour have gone up and inflation has seen profit margins in the dominant manufacturing sector fall; mining and real estate are commanding increasing profit margins. Given profit margins of up to 30% in mining sectors, logically access to capital becomes easier for Chinese SOEs and companies in resource sectors. Going forward China should strengthen its overseas mine ownership and intensify the resource investment drive.

6.3.2 China`s contrasting approaches to resource investments in Africa

It is generally agreed that extent and makeup of Sino-African deals is tailored and varies from country to country, but also China`s investment strategies support this notion. China`s approaches to securing investments in Zambia, Niger and Guinea have differed greatly. Zambia represents a contrarian approach, investing against market practise and Niger represented an opportunistic trait where Sino U capitalised on failing relations between Niger`s government and French company Areva. Guinea on the other hand represents the diplomatic aspect of China`s resource acquisition drive as Chinalco turned down the Simadou Iron Ore Project and opted to enter into a partnership with Rio Tinto. Rio Tinto had invested heavily into the project before tenure was rescinded by Guinea's government. China`s resource acquisition drive is heavily dependent on global relations and Australia is a key player in China`s resource requirements and China had to take this fact into consideration in pursuing tenures in Guinea.

6.3.3 China`s approach to resource investment in Angola and the DRC: Redundancy of the IMF

The DRC and Angola are arguably two of the most significant African jurisdictions in China`s resource acquisition strategy. The economic significance of both countries is evident in the fact that two of China`s biggest resource deals have been targeted at Angola, for oil supply and the DRC, for copper and cobalt supply. It is essential to note that both deals included resource leveraging in exchange for infrastructure, which are based on China`s developmental model in the 1970s and 1980s. Brautigam (2010) states that leveraging resources as backing for developmental loans is based on China`s own experiences; In the late 1970`s China leveraged oil and coal reserves to secure a $10 billion loan from Japan, with shipments of coal and oil to pay for infrastructure and technology and the trend continued into the 80s as Japan financed China`s rail, port and power facilities.

It was concluded that Angola has limited oil reserves as the World Bank predicts that the country`s oil revenues will decline to 2030 in the absence of new discoveries. The country is caught between capitalising on China`s demand and high oil prices or restricting production. The DRC as the world`s prime source of high quality cobalt reserves is important in meeting China`s rising cobalt demand. China is currently the world`s largest producer of cobalt the poor quality deposits and limited reserves mean that focus must shift to overseas investments, specifically the DRC.

The differential factor between Angola and the DRC and why the latter turned down the $9 bn loan deal was the government revenues from oil and cobalt. Angola`s government was able to capitalise of high oil price and disregard IMF recommendations to turn down the China`s offer due to oil revenues. Angola`s oil production increased from 742 000 b/d in

2001 to 1.4 million b/d in 2006 and during that period the price of oil increased from $26/barrel - $66/barrel increasing the countries revenues from $7 billion to $34 while the DRC did not have similar revenues from cobalt, Downs (2007). The IMF was in opposition to both the $5 billion 'Angola mode' oil backed loan and the DRC`s $9 billion copper cobalt swap but the DRC was not in a financial position to oppose the IMFs recommendations. It was an economically motivated decision determined by the market.

China is ultimately contributing to **the redundancy of the IMF in Africa** but the IMF as an institution has some fundamental flaws. In the face of China`s emerging role as aid provider and investor in Africa; as an international organisation, the IMF lacks the ability to offer African countries notable benefits. Furthermore, Angola`s predicament in 2002 indicates that to some extent the IMF`s decline in importance to some extent was self-inflicted. In 2002 Angola`s government approached the IMF for loans to fund its post-war reconstruction but the IMF declined, China the stepped in and offered $2 billion credit line now commonly known as the 'Angola model' or the 'Angola mode', Zongwe (2010). Chinese loans are easily accessible and do not involve a large deal of calibration and carefully orchestrated terms and conditions. The IMF employs drawn-out processes and intensive negotiations that at times can lead to the respective government seeking alternatives. The IMF had been negotiating a new loan with Angola for years, with conditions to block corruption and alleviate poverty, China then stepped and offered Angola $5 billion in return for oil concessions and infrastructure contracts, Kedrosky (2010).

The observation from the study is that as China becomes more integrated and influential in the global economy, it will challenge the status quo. Strategic differences and conflict with institutions such as the WTO and the IMF will intensify. The fact that such multinational

organisations at times act as mediators but at times do not share the interests of the majority of the parties they represent may lead to them assuming less influence.

6.4 ***'Spill-over Effects' of China`s resource demand: Opportunities and Challenges for African Governments***

6.4.1 China`s Protection of African countries during the global recession

It was found that China protected African countries from experiencing the full effects of the 2008 global recession, particularly those countries with limited trade links to Western markets. Arguably this development has logically led to a preference for Chinese FDI among African resource rich countries. Chinese interest and FDI inflows have sparked impressive economic growth prospects for Africa countries. A study by the Economist found that from 2000-2010, 6 of the world's 10 fastest-growing economies were in sub-Saharan Africa. Going forward it is predicted that on average African economies will grow at a faster rate than Asian economies.

Undoubtedly, China`s investment in African resource sectors has given leverage to African jurisdictions. Following on from the findings of the section, Chinese investment has been successful in Africa from multiple reasons; it is a new approach to investment. Mingxin, (2007) points out 5 distinctive characteristics of Chinese FDI in Africa. 'Rapid growth', by 2003 China's direct investment in Africa grew from $490 million in 2003 to US$9.33 billion by the end of 2009. 'Wide Distribution': China's investment is distributed through 49 African countries. 'Wide range of areas': China's investment in Africa covers mining, financing, manufacturing, construction, tourism, agriculture, forestry, animal husbandry and fisheries. 'Multiform methods': China`s investment takes various forms, from sole proprietorship,

joint-venture ownership and investments methods range from equity participation, mergers and acquisitions to various forms of joint-venture cooperations. ‘Diverse investors’: China`s investors range from state-owned large and medium-sized enterprises, private enterprises to individuals and all forms of investment complement each other with their own merits and advantages. From this perspective, African countries have several economically motivated reasons to engage with China.

6.4.2 Angola: Fast Paced Exploitation Strategy, Optimal Extraction Theory?

Hotelling (1931) provided that producers should be indifferent to preserving resources in situ, extracting and selling; the research demonstrated that aggressive extraction can be of greater economic benefit to Angola, as Africa`s major oil producer. This is in line with some modern economists who advocate for aggressive extraction and the advantages it brings. OxCarre (2009) argued that it is optimal for governments to extract oil aggressively and set up buffers that cope with volatile markets and capitalise on any ‘monopoly’ advantage. Angola emerges as a good case for this scenario as the country has limited resources and is currently effectively leveraging oil for infrastructure. The country may not always enjoy its current position as Africa`s leading oil producer as new players enter the oil market and traditional producers with larger reserves resolve internal issues. Developments in the U.S. economy and the Asian economies are heavily affecting the market, governments are not at liberty to disclose the amounts of oil stockpiled, the amounts of seaborne oil are not fully known and producers do not communicate the complete picture of reserves. Oil producing nations operate in very complex market and optimal extraction may not be the most economic and strategic option for oil producers.

6.4.3 Ethiopia: Most Strategic African Country in Sino-African Affairs?

China is not only in Africa for natural resources; Ethiopia largely represents the 'follow on effect' of Chinese economic growth, the search for new markets. But most importantly, China has engaged with Ethiopia as one of the most strategic African countries in Sino-African engagements. Ethiopia serves a unique diplomatic function that no other African country offers, as it links Muslim Africa and Christian Africa. In 2003, Ethiopia hosted the first Forum on Sino-African Cooperation (FOCAC) on African soil. In 2006 the Chinese and Ethiopian premiers respectively co-chaired the Beijing Summit which introduced the Beijing Action Plan (2007-2009). The significance of this development is that the basis of all modern Sino-African engagements is based on the Beijing Action, which set out the new strategic partnership between Africa and China. Furthermore Ethiopia is the headquarters of the United Nations Economic Commission for Africa, the African Union and has the largest branded goods market in Africa, Merkato in Addis Ababa. Ethiopia is endeavouring to establish itself as a platform for Chinese and international investors entering African markets by having conducive investment environments, a 81.5 population million strong market, protecting foreign brands and providing links to the rest of the continent.

The interest in Ethiopia has meant that the country has had impressive economic growth rates, in most cases outperforming resource rich African countries with an impressive 12.7% growth rate in 2010. The Human Development Index (HDI) indicates that Ethiopia had the third fastest average annual HDI growth rate in the world, between 2000 and 2010 according to, UNDP (2010). Clearly it is incorrect to assume that the greatest gains in Sino-African affiliations from an African perspective have been in resource rich African countries.

6.4.4 The DRC and Zimbabwe: Copper-Cobalt Concentrate Export Ban, STERP and Chrome Export Ban

It was shown that despite China`s published rhetoric concerning supporting indigenisation and empowerment in Africa, there is a strong awareness that reforms could threaten existing investments. The $700 million loan arrangement with Zimbabwe represented the biggest loan package to date, urging the government to protect Chinese interests from nationalisation plans. China`s actions are becoming more assertive and deliberate in safeguarding investments.

A closer inspection of China`s relationship with Zimbabwe reveals a strengthening relationship. Despite the significant capital shortfalls in the mining industry, Zimbabwe`s government is displaying stronger confidence in the 51 % Indigenisation Ownership Law. While FDI inflows have been at historical lows, China has been able to sustain the country`s government through various channels from aid, loans to investment. From this perspective China adds impetus to the government's reforms and acts as in effect as a prop. China`s 'propping' is motivated by self-interest does have a plan and long term outlook. Zimbabwe is set to become the largest producer of diamonds in the world by 2013 and China has ambitions of becoming a major participant in diamond mining activities in the country. China is actively pursuing stakes Zimbabwe`s platinum reserves and Sinosteel has already secured an 86.3% stake in Zimbabwe`s prime chrome smelter Zimasco. Therefore while the Chromium Export Law will have negative ramifications on other investors, China will be directly involved in 'in-country' the beneficiation activities.

The DRC has been proposing permanent bans on cobalt and copper concentrate exports. The Katanga and Kivu provincial governments are the fore of pursuing export bans as they hold the most lucrative copper cobalt reserves in the world. Despite hosting an estimated 50% of

global cobalt reserves and being the world’s leading cobalt producing region, the DRC only accounts for a small percentage of refined product. The bans are justified as the DRC can increase revenue through beneficiation actvities. This development is threatening China`s cobalt security and China has already been looking at diversifying cobalt investments from the DRC but cannot run away from the fact that the DRC is the world`s prime cobalt producer. The DRC is becoming increasingly aware of the value of its resources and the overlapping and times conflicting roles of the provincial and state governments create a challenging investment environment. China as the number one consumer of cobalt faces the greatest challenge in the DRC.

6.4.5 South Africa

South Africa`s mining industry is being negatively affected by high political uncertainty. There are various spinoffs from this development and dialogue of impending nationalisation of mines by key political figures of mines is affecting mining investment. Nationalisation poses the biggest threat to the investment community as all, but more importantly the mixed messages from the government. Mineral Resources Minister Susan Shabangu stands that she is opposed to the nationalisation of South Africa's mines while the ANC Youth League (ANCYL) has pushing for it and the African National Congress (ANC) after initially resisting is now researching into the matter, Mail Guardian Online (9 February 2011). The leader of the ANCYL who is advocating for nationalisation is weary of China and states that China exploits African countries, does not contribute to employment creation and overall development, The Namibian (11 April 2011). The overall policy challenges for African governments are the implementation of legislation that benefits the majority and the economy, but overregulation and unfriendly investment environments can potentially damage investor relationships.

In the case of South Africa it was found that empowerment and indigenisation amendments aid Chinese strategy. BEE and MPRDA as socio-economic reforms, mean that BEE companies are becoming increasingly prominent and influential mining establishments and China is capitalising. The entry of China into South Africa`s platinum sector is through a BEE company, Wesizwe Platinum. Jinchuan Group and the China-Africa Development Fund will take a 45 per cent stake in the junior miner Wesizwe Platinum for $200m, in a deal that is estimated to be worth $800 million. The 'stato-centric' nature of Chinese investments means that there is potential for circumvention by Chinese companies through 'courting' government officials. Sinosteel secured a majority control of the ASA chromite mine and ferrochrome processing facility in Limpopo, South Africa, going against the stipulated BEE legislation. This precedent is an indication of the difficulties African jurisdictions will face in enforcement of regulation thresholds.

6.4.6 Emergent challenges for African countries: Migration, Investor Diversity

The conclusions drawn from the chapter are in agreement with, Huntington (1996 p. 119). "Larger populations need more resources, and hence people from dense and/or rapidly growing populations tend to push outwards, occupy territory, and exert pressure on other less demographically dynamic people". It was shown that migration is emerging as a major concern and may carry negative implications for Sino-African relations going forward. There is growing trend of temporary labour migrants preferring to remain in Africa and pursue entrepreneurial interests and competing with local industries. This trend in economic migration does have some benefits. African communities are getting access to goods they previously could not access at affordable prices but this development is putting increasing pressure on local industry. The informal nature of Sub-Saharan Africa`s business

environment is serving the entrepreneurial interests of Chinese economic migrants. Estimates of Chinese migrants in Africa stand at 1 500 000 while African immigrants in China are estimated to at 100 000. There are glaring imbalances in numbers and impact economic migrants are having in both regions. Asche (2008) provided that a complementarity exists between trade, investment, aid and immigration. China's progression in Africa is dependent on diligently addressing all four issues and involvement in the migration regulation of Chinese nationals. The geostrategic motivations of the China`s state government are not represented by these economic migrants but their actions are viewed by local communities under the broad parasol of 'China'.

This also introduces the question of the sustainability of China`s non-interference policy. China`s state government has always conveniently separated itself from the activities of its companies and citizens in foreign countries. According to the 5 principles, mutual respect for sovereignty and territorial integrity are fundamental aspects of the central government`s foreign policy. The central government cannot not be held accountable for the actions of its companies (citizens) in overseas activities, and does not interfere in another country`s domestic proceedings. The current levels of migration and the levels of involvement of Chinese migrants in the economic affairs of African countries may threaten Chinese interests.

To date China`s government has managed to abide to the non-interference stance and disassociate itself from Social disturbances in Zambia and Algeria involving Chinese SOEs. Although the government is involved in administration and financial aspects of these state institutions, it can conveniently separate itself from undesirable events. One may adopt the view that the current political setting of African resource sectors prescribes such an approach, a respect of territorial integrity and a commercially focused relationship.

Reality and precedents in the case of Western superpowers do not favour the sustainability of China`s non-interference stance. The activities of a country`s citizens and companies in foreign jurisdictions may require state intervention, governments must be accountable. Regarding oil supply and the Niger Delta, the British intervened in various capacities and have made it clear that the activities of Shell and the safety of the Shell employees are a concern of Britain, given the fact that Shell accounts for over 60 per cent of oil prospecting activities in Nigeria (Canago, 2004). Events in Iraq, Libya and the Ivory Coast also indicate that the scale of economic interests determine the extent of interference and as China`s economic interest mature, any potential threats will require appropriate measures.

China`s investment into African resource sectors has introduced investor diversity, which is a highly positive development. However it has also introduces considerable challenges. The section highlighted that a large proportion of the world`s largest mining companies are BRIC based, and only 6% of them are ICMM registered. This means that BRIC-based companies have different views on issues such as Corporate Social Responsibility (CSR), transparency, business processes and ethics among others. Countries that are ICMM registered such as Zambia are facing is indicative of different approaches to challenges with meeting ICMM requirements and dealing with incompliant Chinese companies. Bribery and high levels of political intervention are common place and standard practice in Chinese companies but do not fit into ICMM mandate. African jurisdictions to date do not have regulatory frameworks that effectively adapt to the investor diversity. Chinese companies are vindicated for poor environmental stewardship and health and safety but they understand developmental requirements of African countries. The approaches to investments by Chinese companies are introducing a new challenge and opportunity for African countries to manage increasing levels of investor Diversity.

6.5 ***Implications of China`s resource demand on key global markets***

6.5.1 Productivity and Production gains in China` mining industry

China`s current position in the REE market is the result of progressive efforts from the Chinese government since the 1990s to transform the mining industry. These efforts have translated into a mining industry that has witnessed remarkable productivity and production gains. It was found that China has invested heavily in its domestic mining industry as well as foreign stakes. The 97% share of global production in the REE sector has been a result of consistent government investment in research and development that has resulted in production and productivity gains. The productivity gains in China`s domestic mining industry have also been attributed to restricted wages. While labour and capital inputs have increased in established mining countries such as Australia, China has managed to restrict wages and furthermore mining companies have relatively easy access to capital.

6.5.2 REE Industry: China supply chain concerns

Since joining the WTO in 2001, China has had to abide by the highly developed rules of global trade. China`s entry into the WTO was not a standard procedure, the negotiations spanned 15 years but the fact that China brought a market of 1.3 billion people into the global trading system led to a unanimous approval, CNN World (10 November 2001). Since joining the WTO China has not complied with standards and regulations. China has imposed quotas on REE exports, clearly against WTO regulations, that prohibit member states from imposing export quotas and has been accused of unfair practice by the U.S. China is now one of the most influential players in global trade and is throwing its weight around, furthermore the WTO has no enforcement powers. The various member countries can devise laws, regulations and practises aimed at national objectives and in some cases this turns the WTO

into a keen observer. It was concluded that China and the U.S. cannot engage in trade wars as it would harm both economies and until the REE market balance is restored, China will have the upper hand.

6.5.3 China`s impact on the iron ore industry: Shift in producer market power

The report found that China has contributed to increased producer power in the iron ore industry. Increased domestic steel production, speculative trading and fragmentation of the local steel industry led to increased spot trading, declining contracts and rising prices. Traditional benchmark pricing system and long term contracts were replaced by short term contracts and there is strong potential of a move to index based pricing which could further increase producer profits. The high iron prices have meant that Rio Tinto, Vale and BHP Billiton as the dominant seaborne traders have realised their market power and the economic advantages of overturning the benchmark pricing system.

The position of the iron ore producers is logical to protect and increase revenues. Chinese steel mills hovered between contracted and spot prices. When the spot market price dropped below the benchmark price, Chinese mills ignored the contracted price and bought on the spot market and when the spot price rose above the benchmark, they hoarded ore and sold to smaller mills at a profit, Knowledge Wharton (2009). Chinese steel mills were capitalising and exploiting both markets and the current proceedings are expected as iron ore producers ‘wise up’. Going forward, there is no concrete reason to believe that in the short to medium term China will reduce producer power in the iron ore industry. The paper concludes that the overseas investments China is making to a large extent are being matched by Rio Tinto, Vale and BHP Billiton and domestic production is limited by poor reserves.

6.6 Long-term prospects of Sino – African investments and affiliations

The general findings are that China is securing it`s self-interests in engaging with African countries but African countries are benefitting if a comparison is drawn between traditional Euro-African and modern Sino-African resource trade. The failed DRC copper-cobalt deal and the large profit margins Chinese SOEs were expected to realise represents the exploitative nature of China`s resource investments. However, exploitation may be too strong a term to describe Chinese enterprise. A closer inspection of the DRC situation shows that China as an investor was taking a massive gamble; the investment would only produce copper in 2014, after the initial investment had been made in 2008. For China the DRC deal was a remarkable leap of faith, China agreed to put $6 billion up front in before the Katanga mine would enter into production, by 2014 at the earliest, Lee (2010). The fact that African governments face capacity challenges at times means that observers are quick to point the finger at China for exploitation but China is simply out to secure resources at the least possible costs. The high corruption and uncertainty in African jurisdictions means that China faces a myriad of challenges in resource investments and supply security. It is commendable that as an investor, the Chinese state has effectively negotiated with juntas, so called 'illegitimate' regimes and even the most democratic of African states with great success. Given China`s resourcefulness, the future of Sino-African resource agreements is one full of promise.

The Chinese approach or the 'Chinese model' is an effective method that does involve a multitude of preconditions and lengthy intervals. To date is has been highly successful and going forward there is no reason to anticipate receding appeal on the side of African governments. The stato centric nature of the China model is highly debated in that it opposes free world ideology, economically there no debating its success. One can anticipate that Sino-African investments will increase and ties will be strengthened if China can sustain a stable

political environment and Biejing adopts a more proactive role on the current levels of controlled migration into African countries.

One may question if it is the success of Chinese ideology or business acumen that has contributed to the success of China but the link between the two. Clearly it is a combination of both. There is a unique nature to Chinese actvities that is not always considered ethical; abuse of human rights, poor working conditions, marginalisation of local labour, of low wages and overall, a very tactful almost exploitative approach to business. China will need address these issues. There is a flexibility about China`s activities and as a developing nation, there is potential to address these issues. The most promising aspect of Sino-African resource engagements is that the resource for infrastructure approach or the China model is based on China`s own experience. China leveraged its coal and oil to Japan in the 1970s to develop domestic infrastructure and this was highly successful and propelled China to the world`s fastest growing economy. African countries must secure agreements that ensure technology transfer and infrastructure that facilitate development. From China`s precedents as a developing country, resource for infrastructure agreements should be short term approaches and policy should shift to address other developmental concerns. China actions are deliberate, calculated, consistent and given the success of China`s resource acquisition strategy in Africa; constitute an advanced, unconventional and largely controversial approach to mining investment practise and business ethos.

While traditional investors have opposed mining and economic reforms in countries such as the DRC, Zimbabwe and South Africa, China`s behaviour in many ways appears to be an anomaly. The general rhetoric from China is support for African countries and their ability to make independent decisions. China`s behaviour is not an anomaly but an economically and politically motivated stance. By supporting such reforms, China is attempting to reduce the influence of Western countries. China does not speak out against reforms that negatively

impact economic growth prospects of African countries, in line with its non-interference policy. The main concern for China as with any resource consumer is reducing competition and securing supply.

With specific reference to the REE and iron markets, major producers and industrialised nations are displaying an overall awareness that China poses a threat to global markets. Firstly from a supply point of view, the fact that China has restricted REE supply to major consumers and has used its position as a diplomatic weapon against Japan is a point of concern. A more immediate challenge for global resource trade is the current and future dynamics of the iron ore market. China`s demand and fragmented steel industry has given power to producers. The big iron ore producers are beginning to determine prices and the pricing policies are not geared for stability to expand consumption but to capitalise on high prices. China is increasing foreign iron ore mine ownership but Vale, BHP Billiton and Rio Tinto are also acquiring tenures at an almost similar rate to protect their market position. The REE market should return to balance in the next 5 years as predicted but the iron ore market has greater challenges for major consumers as the dominant producers strengthen their positions.

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