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UNIVERSITY OF THE
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OVERCOMING THE RESOURCE CURSE IN ZIMBABWE: Lessons from the international experience

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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 for the degree of Master of Science in Engineering.

Johannesburg, 2021

DECLARATION

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ABSTRACT

Exploitation of mineral resources in many resource-based nations has not translated into broad-based economic development. This negative relationship between resource-abundance and economic development has been termed the Resource Curse.

There is extensive evidence on the existence of a resource curse in Zimbabwe despite the vast mineral resources in the country. Using sixteen case studies of resource-rich nations that have tamed the resource curse and those that have succumbed to it, this study focuses on how Zimbabwe, a resource-rich nation can overcome the resource curse.

The study finds that to avoid the resource curse resource-rich nations should have strong institutions, good governance and leadership, develop economic linkages between the resource sector and the rest of the economy, the state should play only a facilitating role and the way resource rents are managed and utilised is critical. The study also highlights the importance of country or regional contextual factors.

The study concludes with policy recommendations for Zimbabwe to overcome the resource curse. For the successful implementation of these, Zimbabwe needs institutional reforms, financial and human resources and a stable political and macroeconomic environment.

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To my wife Memory and my boys Timothy, Tapiwa, Nathan and Nigel thank you for your patience and understanding while I was working on this research report. This one is for you my boys, I hope I have inspired you to attain academic excellence in your own life.

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LIST OF SYMBOLS

ct	carats
ft^3	cubic feet
GH₵	The Ghanaian cedi
International $	international dollar
m^3	cubic metres
kg	kilograms
Sm^3 o.e.	standard cubic metres of oil equivalents
SR	Saudi Riyal
tons	tonnes
US$	United States Dollar
¥	Chinese Renminbi yuan

1 INTRODUCTION

1.1 Background Context

1.1.1 Resource curse theory

The resource curse theory has been one of the most dominant notions shaping development and policy strategies of resource-rich nations. Resource curse is the “paradox by which mineral-rich states fail to keep pace, economically, with their non-mineral-rich peers” (Elbra, 2013:549). Nations poor in natural resources like Singapore, Taiwan, Japan, Hong Kong, and Korea have achieved significant economic growth compared to countries with abundant resources like Venezuela, Angola, Sierra Leone, Nigeria and Saudi Arabia, which have lower economic growth (Mehlum, Moene & Torvik, 2006).

According to Bastida (2014), the resource curse theory is supported by research done by various scholars (Gelb, 1988; Auty, 1993; Gylfason, 2001; Sachs and Warner, 1995) that saw a negative correlation between economic growth and resource-abundance. In these studies, economic growth was measured by changes in Gross Domestic Product (GDP) per capita and resource-abundance by the share of primary exports in GDP (Figure 2).

In the literature, there is a distinction between point resources (mineral resources, oil, gas), which are geographically concentrated and diffuse resources (agriculture), which are widely dispersed. There is a general consensus that it is the point resources that contribute to the resource curse as shown in Figure 1, where the growth rates of countries dependent on point resources were low (Isham & Woolcock, 2002).

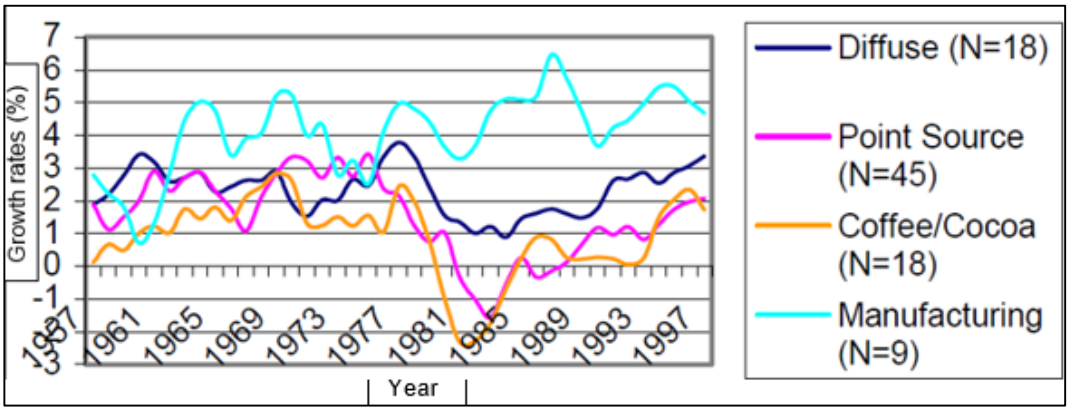


Figure 1: Growth rates (vertical axis) for 90 developing countries, 1957-1997(Isham & Woolcock, 2002).

Symptoms of a resource cursed state include low economic growth, high poverty and unemployment rates, high inequalities, lack of health and educational facilities, existence of a rentier state and prevalence of corruption and conflicts (Elbra, 2013). A rentier state obtains a larger portion of its revenues from natural resource rents and thus can afford not to impose high taxes on its citizens (Isham & Woolcock, 2002).

A number of studies have indicated that the resource curse operates through both political and economic channels. According to Badeeb, et al. (2017), the main economic reasons for the resource curse are the failure of government policies, the Dutch disease phenomenon, low levels of human capital and the volatility of commodity prices. Rent seeking behaviour, corruption, lack of democratic accountability and weak institutions are the main political causes of the resource curse (Badeeb et al., 2017).

On the contrary, some studies (Ding and Field, 2005; Brunnschweiler, 2008; Lederman and Maloney, 2007; Alexeev and Conrad, 2009; Apergis and Payne, 2012) using different research methodologies and measures of resource abundance, found a positive or no relationship between economic growth and resource abundance and dismissed the universal application of the resource curse. A study by Brunnschweiler (2008) for 90 resource-rich

nations using new variables (the total natural capital, subsoil wealth) found a positive relationship between economic growth and natural resource abundance (Sarmidi, Hook law & Jafari, 2014). Studies analysing the effect of country-specific and institutional factors on natural resources found mixed results (Kim & Lin, 2018). Thus there is no agreement on the subject of the resource curse. One of the objectives of this study is to unpack the resource curse.

1.1.2 Resource curse on the global stage

The resource curse is a global phenomenon that has affected many resource-rich nations. According to Papyrakis (2017: 175) “after 20 years of intensive research and action, the curse still lingers as a very real global problem, as evident from the multiple challenges many mineral-rich countries currently face”. The global nature of the resource curse is illustrated in Figure 2 which shows a negative global trend between natural resource abundance (export of natural resources; fuel, ores and metals as % of GDP) and economic growth (real average annual growth of GDP per capita) over 25 years (1975-2000) for a sample of 90 resource rich nations (Bucuane & Mulder, 2007).

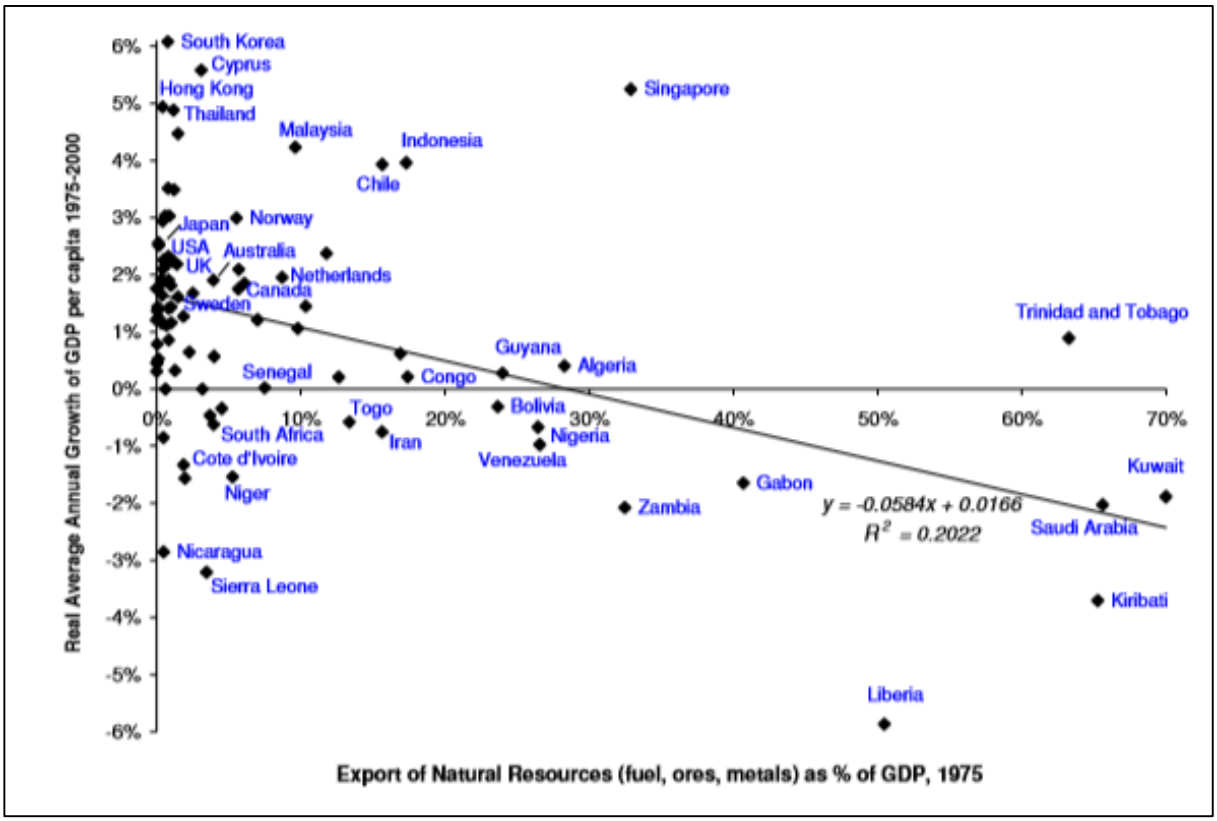


Figure 2: Relationship between natural resource-abundance and economic growth (as cited in Bucuane & Mulder, 2007).

Figure 2 shows that most developing countries (Bolivia, Venezuela, Nigeria, Zambia, Gabon, Liberia, Saudi Arabia, Kuwait, Kiribati) where natural resource exports contribute more than 20 percent to total GDP had negative economic growth rates and a few countries (Guyana, Algeria and Trinidad and Tobago) had low positive growth rates (<1%) over the 25-year period. Thus countries with more natural resources registered low or negative economic growth, which is the resource curse. Countries like Nigeria and Venezuela despite having abundant oil resources and a long history of oil extraction, remain very poor (Kunchu, Sarmidi, Md Nor & Yussof, 2016). Saudi Arabia's per capita income has declined from $28,600 in 1981 to $6,800 in 2001 despite having the highest proven crude oil reserves in the world (Sovacool, 2010). Onditi (2019) noted that in these countries, natural resources have been associated with rent-seeking behavior, conflicts and poor institutions. Given this negative economic growth in most developing resource-rich nations, this study seeks to identify global experiences of "what not to do" to avoid the resource curse.

Among the developing countries where natural resource exports constitute more than 20 percent of total GDP, Singapore was an exception, registering a high positive economic growth rate (~5.5%) over the 25-year period (Figure 2). Chile and Indonesia though having between 10-20% contribution of natural resource exports to total GDP also registered significant growth rates (4%) (Figure 2). This raises the important question of “how do other resource-rich nations grow their economies using their abundant natural resources whilst others have failed?” This study will answer this question by identifying global experiences of “what to do” to escape the resource curse.

Singapore’s high economic growth was due to a favourable tax regime for foreign investors, provision of infrastructure and the government’s interventionist policy in regulating the labour market, promoting education and training and forcing high domestic savings, which contributed towards macroeconomic stability (Huff, 1999). Most importantly, non-economic factors such as political stability, good governance, national security, competent politicians were key to the success of Singapore (Abeysinghe, 2015).

The growth of the Chilean economy was driven by growth in the export sector mainly due to its favorable investment climate and strong institutions, a prudent exchange rate policy, establishment of a Mineral revenue stabilisation Fund and availability of indigenous rather than foreign capital (Kaznacheev, 2013). Although authoritarian, Indonesia adopted market-led policies with the state playing the role of facilitator (Stevens, 2006). Also the existence of a ready-made export market in the booming nations of East Asia (Taiwan, Singapore, South Korea, Hong Kong) helped Indonesia to grow its economy through export of natural resources (Stevens, 2006).

However, the developing country success stories had some challenges along the success journey. Kim & Lin (2018: 2699) argued that “each resource-rich country has its unique institutional and economic

characteristics, and hence different degrees of market failures, policy distortions or institutional failures, that govern its development process". Hence there is no universal growth strategy and it was the desire to adopt unconventional policies and learn from mistakes that contributed to their success (Stevens, 2006).

During the same period (1975-2000), the highest economic growth rates (4-6%) were experienced by those countries (South Korea, Cyprus, Hong Kong, Thailand, Malaysia) where natural resource exports contribute less than 10 percent to total GDP (Figure 2). This raises another key question of "why do resource-poor nations experience high growth rates?" Kim and Heo (2017) observed that these countries developed mainly through government's intervention (leading role or supportive role), export-oriented industrialisation strategies and high-quality human capital.

Developed countries (Japan, Norway, Canada, United States of America, Sweden, Australia, Netherlands, United Kingdom) showed moderate economic growth rates (1.5-3%) over the 25-year period and these have natural resource exports contributing less than 10% to total GDP (Figure 2). Greasley and Madsen (2010) argued that many developed nations initially had abundant natural resources that provided solid growth foundations. Figures 3 and 4 show mineral production for some developed nations as a percentage of real GDP from 1870 to 2005.

Mineral production was high in the United Kingdom and Germany from the late nineteenth century to the early-twentieth century and for Canada, mineral production has accounted for a significant share of GDP since the mid-twentieth century as shown in Figure 3. Norway's mineral production significantly increased from the late twentieth century (Figure 3). Despite its high dependence on oil revenues Norway has avoided the resource curse due to its transparency and effective management of resource rents (Biresselioglu, Demir, Gonca, Kolcu & Yetim, 2018).

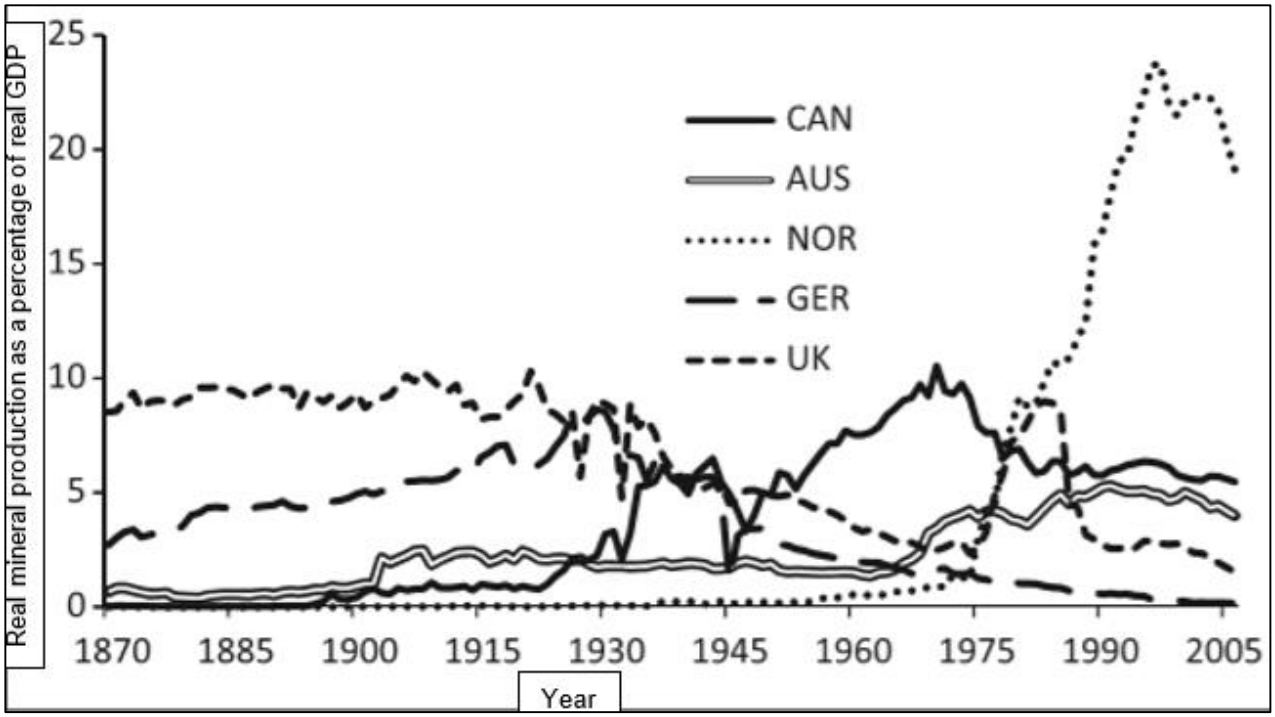


Figure 3: Real mineral production as a percentage of real GDP (vertical axis), 1870-2005 for Canada (CAN), Australia (AUS), Norway (NOR), Germany (GER) and United Kingdom (UK) (as cited in Greasley & Madsen, 2010).

Figure 4 shows that for the United States of America (USA), mineral production was high from the mid-nineteenth century and reaching its highest in the early-twentieth century. Although mineral production has been declining from the twentieth century, minerals still accounted for a significant share of GDP in USA even in the twenty first century. Figure 4 also shows that around 1870, minerals contributed a high share to GDP for Sweden and from the late twentieth century, mineral production was important to Netherlands.

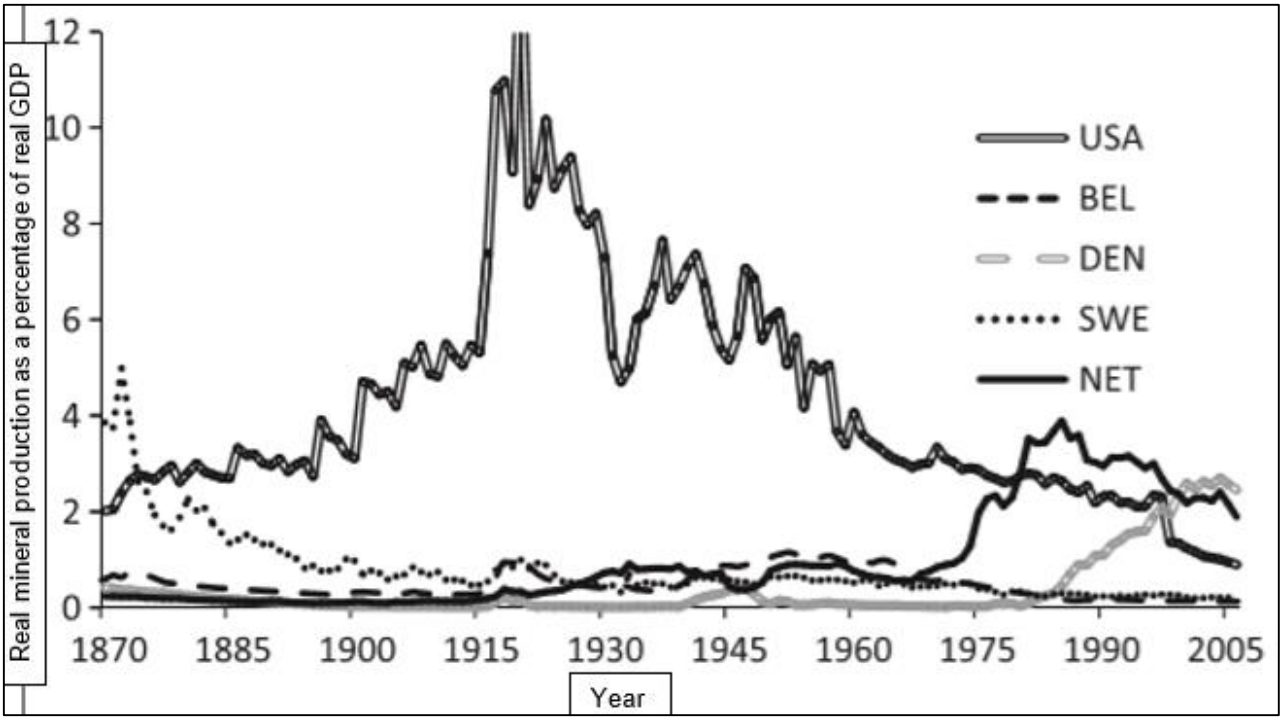


Figure 4: Real mineral production as a percentage of real GDP (vertical axis),1870-2005 for United States of America (USA), Belgium (BEL), Denmark (DEN), Sweden (SWE) and the Netherlands (NET) (as cited in Greasley & Madsen, 2010).

The periods of high mineral production in the developed countries were associated with high economic growth. Greasley and Madsen (2010: 312) summed it up by saying that “minerals have constituted a leading edge of the knowledge economy in the USA since the mid-nineteenth century” and in Britain, “coal usage has been associated with the First Industrial Revolution” and the economic development in Canada was “dominated by the role of resource-intensive staple exports”.

This analysis has shown that many resource-rich developing nations world-wide have suffered from the resource curse and only a few have performed well. It can also be concluded that many developed nations used natural resources as the foundation of their economic growth and development. This study seeks to find answers to what those countries that managed to escape the resource curse have done differently. The resource-cursed

nations can learn from the success stories of resource-led growth and implement policy initiatives to escape from the resource curse.

1.1.3 Resource curse and economic growth in Zimbabwe

Zimbabwe has a huge and varied mineral resource base with about 60 different minerals (Government of Zimbabwe, 2018a). These minerals include gold, diamonds, platinum group metals (PGMs), coal, chromite, iron ore, nickel and copper. The quantity of platinum resources in Zimbabwe are only second to South Africa in the world; it has the largest high-grade chrome resources in the world and the largest lithium resources in Africa. Zimbabwe's mineral output in 2015 included "about 2.7% of the world's diamond production (by weight), 4.8% of the world's palladium output and 7% of the world's platinum production" (Barry, 2019: 45.1). Table 1 shows the reported mineral resources of Zimbabwe.

Table 1: Mineral Resources of Zimbabwe (Government of Zimbabwe, 2018a & Reserve Bank of Zimbabwe as cited in Jourdan, 2014:22).

Mineral	**Estimated Resource (Tonnes)**
Gold	13 million
Platinum	2.8 billion
Chrome	10 billion
Nickel	4.5 million
Coal	26 billion
Diamonds	16.5 million carats (ct)
Iron Ore	30 billion
Copper	5.2 million
Coal Bed Methane	40 trillion cubic feet

Mineral resources should promote the economic growth and development of a nation. Figure 5 shows a decline in Gross Domestic Product (GDP) from 2000 to 2008 and slow GDP growth from 2009 to 2013 in Zimbabwe. According to Mutandwa and Genc (2018), 60% of exports in Zimbabwe

comes from mining and it contributes about 15% to GDP. These statistics indicate that Zimbabwe is a resource-dependent country. Davies (1995) (as cited in Elbra, 2013:551), defined resource dependent countries as “those where natural resource exports contribute more than 40 percent of total exports and where mining's contribution to GDP is greater than 8–10 percent of total GDP”.

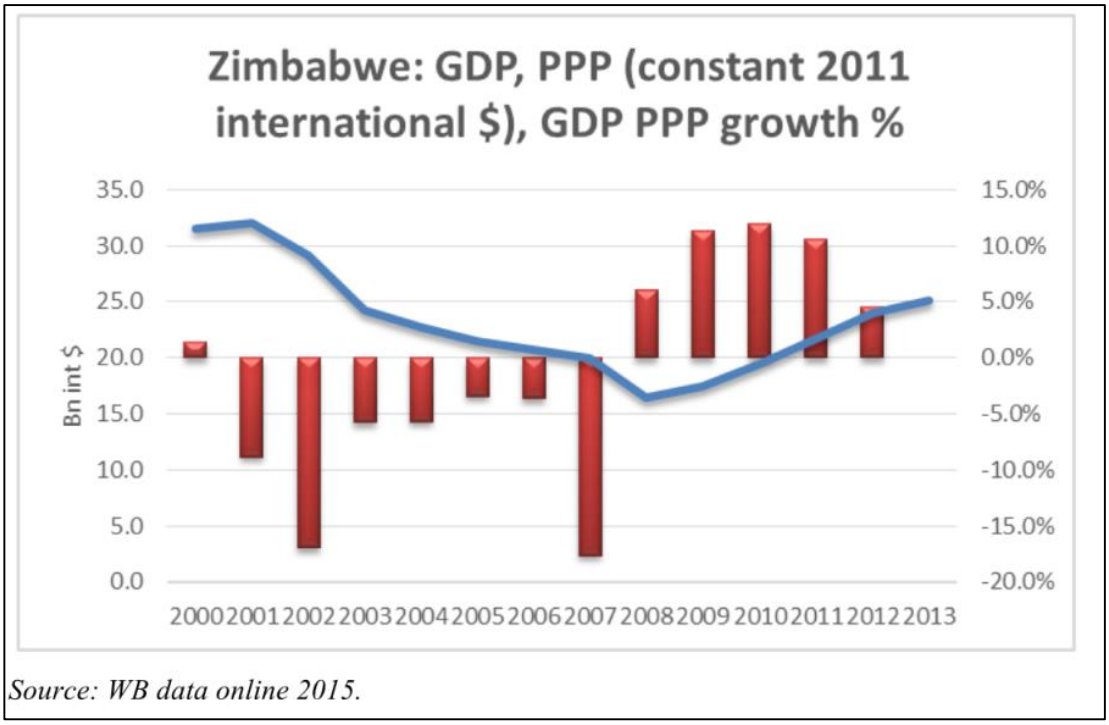


Figure 5: Zimbabwe’s GDP, Purchasing power parity (PPP)(billion international dollars)(left vertical axis-line graph) and GDP PPP growth (%)(right vertical axis-bar graph)(as cited in Zikiti, 2015).

Despite the mineral resource-abundance, Zimbabwe has experienced a decline and slow economic growth in the past two decades. This points to a resource curse in Zimbabwe. It is against this background that this study looks at ways of overcoming the resource curse in Zimbabwe.

1.2 Problem Context

Zimbabwe, like many other resource-based nations has experienced the resource curse. Many resource-driven development policies in Zimbabwe have not produced the wanted results. The country's vast resources can be instrumental in spearheading economic development like the experiences of Botswana, Canada, Norway and many others. This leaves us with the important questions of "how can Zimbabwe overcome the resource curse?" and "how have other resource-based economies developed?"

Related studies on resource-based development in Zimbabwe were done by Jourdan (2014) and Zikiti (2015). Their studies focused on economic growth and development through the maximisation of mineral resource linkages.

This study will unpack the resource curse and seek for all encompassing solutions to overcome it in Zimbabwe. The report will comment on any good and bad examples of taming the resource curse from analysed countries that Zimbabwe should learn from. The findings of this study may be used for policy formulation by government policymakers.

1.3 Objectives of the Study

The aim of this study is on how Zimbabwe, a resource-based country, can overcome the resource curse.

The objectives to be achieved by this research are, to:

i. Give an overview of economic growth and development and the role of minerals in an economy;
ii. Unpack the resource curse;

iii. Critically review the performance of the mineral sector in Zimbabwe and show that Zimbabwe is resource cursed;
iv. Identify global experiences of “what to do” to escape the resource curse;
v. Identify global examples of “what not to do” in taming the resource curse;
vi. Explore the key challenges in Zimbabwe to implement the lessons from global experiences; and
vii. Examine the potential policy implications of the analysis made.

1.4 Structure of the Report

Chapter 1 introduces the research by describing the background of the study. It defines the research problem and presents the research objectives. Chapter 2 gives an overview of economic growth and development and the role of minerals in an economy. Chapter 3 analyses the literature on the resource curse theory and on resource-based economic development theories. An overview of the mineral resources sector in Zimbabwe and its contribution to economic growth are provided in Chapter 4. This is followed by an analysis of the causes of the resource curse in Zimbabwe. The research methodology is described in Chapter 5. Chapter 6 covers global experiences of what to do and what not to do to escape the resource curse. Chapter 7 summarises and discusses the findings of the study and the policy implications. It will then discuss the key challenges in Zimbabwe of implementing the findings. Chapter 8 provides a conclusion from the study.

2 ECONOMIC GROWTH AND DEVELOPMENT AND THE ROLE OF MINERALS IN AN ECONOMY

2.1 Introduction

Many theories of economic growth and development that represent different schools of thought have been put forward over the years. Table 2 shows the chronology of evolution of economic and development theories. These have shaped the foundation for providing direction for economic growth and development as each theory provides particular policy prescriptions (Malizia & Feser, 1999). An understanding of the determinants of economic growth and development is important in unpacking the resource curse and finding ways of avoiding it. This chapter will discuss different theories of economic growth and development and the role of minerals in an economy.

2.2 Overview of Economic Growth and Development

Economic growth as defined by Otto and Cordes (2002) is the continual rise in a nation's real GDP or gross national product (GNP). Economic growth is measured by indicators such as GDP, national revenue, investments, aggregate demand and aggregate supply (Stefan, 2012). Sepehrdousta and Shabkhaneh (2018) were of the opinion that foreign direct investment (FDI) provides the needed capital for developing nations to enhance their GDP growth.

Economic growth is determined by the availability of inputs of production (natural resources, land, labour, capital, technology) and also depends upon:

- Productive efficiency;
- The nature of political and economic institutions;

- Cultural attitudes;
- Governmental policies;
- Wealth and income distribution; and
- Capacity for structural adjustment (Otto & Cordes, 2002).

According to Kuznets (as cited in Acemoglu, 2012), economic development is a result of economic growth that positively transforms the economic, social and environmental aspects of a nation to the benefit of all citizens. There can be economic growth without development. Economic development reveals the actual welfare of the people as measured by poverty and unemployment reduction, improvements in the material well-being of a nation, education, nutrition and health (Otto & Cordes, 2002).

Table 2: Theories of economic growth and development (Lin & Rosenblatt, 2012:28).

Years	Main ideas /Key words	Representatives/masterpiece
1776	*The Wealth of Nations* Invisible hand, market liberalism.	Adam Smith (1723-1790)
1848	Problems of Political Economy, Liberty of individual action in economic and political spheres, concept of "utilitarianism", economic growth as a function of factor accumulation.	John Stuart Mill (1848)
1940s- 1960s	Theory of "the Big push", balanced growth, planning, investment programming, strong role of the government for industrialization; and international aid theory. (This was driven by newly independent developing countries. The United Nations pointed to the goal of colonial emancipation). "Structuralist" approach, Stages of development - the takeoff; the two-gap model, emphasizing savings and investment, sectoral disaggregation; international aid policy stressed country leadership Unbalanced growth, "favouring industries with strong backward and forward linkages", suspicious of planning, sequential growth, "we cannot achieve all objectives at once" "Convert import to import substitutes". Dependency argument, "Capitalism and underdevelopment in Latin America", the center-periphery concept, "the decline in terms of trade against the export of primary commodities was secular and led to the transfer of income from resource-intensive developing countries to capital-intensive developed countries" "the way … was to develop domestic manufacturing industries through a process known as import substitution" (Lin, 2011).	Paul N. Rosenstein-Rodan, who headed the World Bank research department in 1947 Arthur Lewis (1954), Chang (1949), Myrdal (1957), Walt W. Rostow (1960), Simon Kuznets (1930, 1966), Hollis Chenery (1970) Albert O. Hirschman (1958) Frank (1967), Cardoso and Faletto (1967), Prébisch (1950), Singer (1950), Samir (1976)
1970s	The shift from physical capital to human capital, from capital intensive to appropriate less cap-intensive technologies, from employment in large cities to small and medium-sized enterprises (SMEs),	Jan Tinbergen (1958, 64), Gary Becker (1964), T. W. Schultz (1968, 1971).
1980s	End of the heyday of development economics, and a shift to market liberalism, structural adjustment, reaction to failures of structuralism, new focus on removal of government distortions, leading towards Washington Consensus. Also, revival of institutional economics.	Krueger (1974)
1990s	Endogenous growth theory develops deeper understanding of role of technology, however, there is inadequate attention to catch-up theory – differences in innovation for developing countries.	Romer (1990), Aghion and Howitt (1992), Aghion and Tirole (1994), Jones (1995), Açemoglu (2003)
2000s- Present	Multiple approaches: Reaction to failures of Washington Consensus randomized experiments, enterprise surveys and investment climate analysis, firm level econometrics and productivity, Revival of interest in structural transformation; Growth diagnostics, New Structural Economics	Hausmann, Rodrik and Velasco (2005), Banerjee and Duflo (2011), Lin (2012c)

2.3 Economic Growth and Development Theories

2.3.1 The classical growth model

Adam Smith's classical growth model of the late 18th century laid the foundation on modern economic growth theory. He argued that to maximise conditions necessary for economic growth and development, economies should be left to themselves (Bowles, 1985). His strong belief in operation of free market forces led to the concept of the "invisible hand", which is a process of market competition that drives economic growth.

Figure 6 shows Adam's growth process, where a rise in labour productivity which results in economic growth is driven by specialisation of labour. This division of labour is brought by expansion of markets and capital accumulation. The increase in capital which is the engine of growth depends on the savings of surplus income in an economy (Ucak, 2015). Mineral resource-rich nations, which have surplus income in the form of resource rents, can adopt Smith's model by saving the surplus rents and utilise it for economic growth and development, thereby avoiding the resource curse.

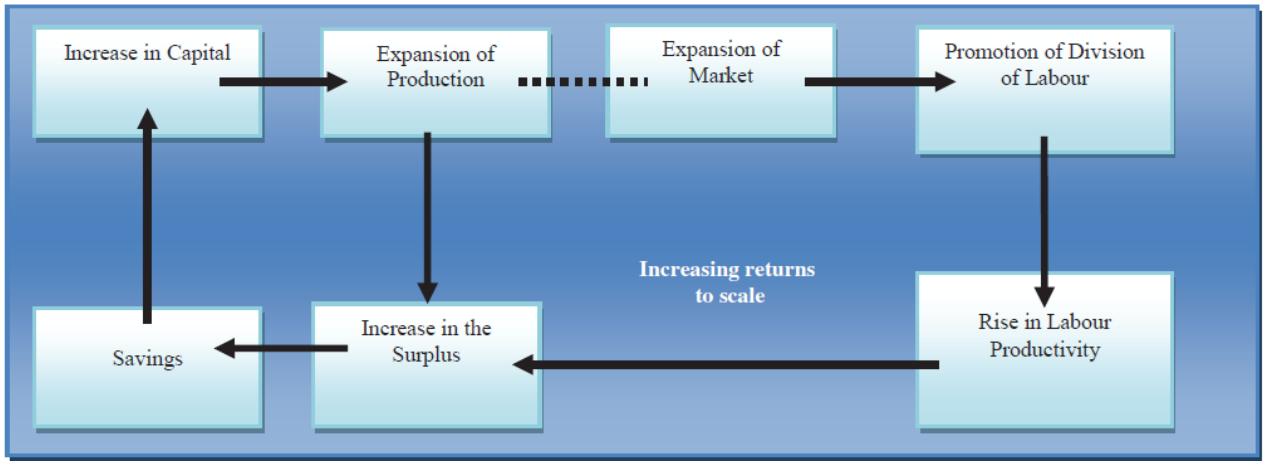


Figure 6: Adam Smith's growth process (as cited in Ucak, 2015).

In his book "*An inquiry into the Nature and Causes of the Wealth of Nations (1776)"*, Adam Smith presented his theory of economic development "Of the Natural Progress of Opulence" to explain how economic development progresses in a society (Bowles, 1985). According to the theory, the natural order of development in a society starts with the agricultural sector then develops the manufacturing sector and lastly, foreign trade (Smith, Reprint 2007). The development process is driven by continued technological change in agriculture, interaction among all sectors of the economy and the location of manufacturing is determined by transportation costs (Smith, Reprint, 2007).

Even modern development theorists concur with Smith on the importance of agriculture and other primary sectors like the mineral resources sector in economic development of developing countries (Bell, 2001). However, Smith (Reprint, 2007) cited political, economic and cultural factors as an explanation of the development of Europe, which did not follow the natural order.

2.3.2 The neoclassical growth model

The neoclassical model of economic growth, a successor of the classical growth model was founded by Solow and Swan in 1956 (Ucak, 2015).

According to Todaro and Smith (2006) (as cited in Sekhampu, 2010), the theory argues that, economic growth and development is driven by a combination of:

- Increases in capital through saving and investment;
- Labour through population growth and education; and
- Improvements in technology.

Solow's model is an extension of the Harrod - Domar model (1939), which emphasised the role of capital and labour in economic growth. Solow demonstrated the limits to economic growth based entirely on capital and labour and argued that in the long run, it is the rate of technological progress that is most important (Solow, 1956). Thus, Solow explained the differences in economic development between nations as a result of technology which is provided exogenously in developing countries.

The neoclassical theory assumes the operation of free and competitive markets, unrestricted international trade and no government interference (Otto & Cordes, 2002). World Bank economists added the market-friendly approach to the theory, which recognises the responsibility of government to enable the smooth operation of markets through interventions like implementation of macroeconomic stabilisation policies (World Bank, 1990, as cited in Sekhampu, 2010).

The World Bank and the International Monetary Fund (IMF) have been the agents of promoting the free market ideology and they have implemented a range of policy reforms in developing and transitional economies. The "Washington Consensus" is the most dominant reform policy prescribed by the neoclassical theory. The term "Washington Consensus" was initially coined by Williamson in 1989 to describe a comprehensive set of free-market policy reforms agreed in Washington by multilateral lending institutions (IMF, World bank), bilateral lenders (USA) and economic policy

think-tanks based in Washington (Marangos, 2009). The ten policy actions under the original Washington Consensus were:

- Fiscal discipline;
- Increasing public expenditure in primary education, health, and infrastructure to improve income distribution;
- Tax reforms to enlarge the tax base;
- Unifying exchange rates to induce a rapid growth in nontraditional exports;
- Liberalising the financial sector with the objective of market-determined interest rates;
- Trade liberalisation;
- Removal of barriers in foreign direct investment;
- Privatisation of state entities;
- Removing regulations that restrict competition and impede on market entry; and
- Protection of private property rights (Williamson, 2005:196).

The first five reforms were earmarked for a secure and stable macroeconomic environment whilst the last five were aimed at marketisation of the economy (Lee & Mathews, 2010). These reforms were initially intended to deal with the debt crisis in Latin America but were later adopted in Africa, Russia and Eastern Europe and their adoption formed the conditional lending by IMF and the World bank. Between 1980 and 1985, 22 Latin American and 31 Sub-Saharan African countries had IMF structural adjustment programs (Stewart, 2018). In Latin America, the new reforms were in response to the economic collapse of the 1980s, which was blamed on state-led development policies implemented between 1950 and 1980 (Moreno-Brid, Caldentey & Napoles, 2005). However, the Washington Consensus reforms did not result in economic growth and development in Latin America.

Figure 7 shows an increase in the structural reforms against the real GDP growth in 19 Latin American and Caribbean nations from 1985 to 2002. An increase in the structural reforms did not translate into an increase in GDP growth. With the exception of Chile, despite an increase in structural reforms, Latin America's GDP decreased from 1998 to 2003 and the growth of the economies in the region was at a slower rate as compared to the 1950-1980, period which was under state-led development policies (Moreno-Brid, Caldentey & Napoles, 2005)

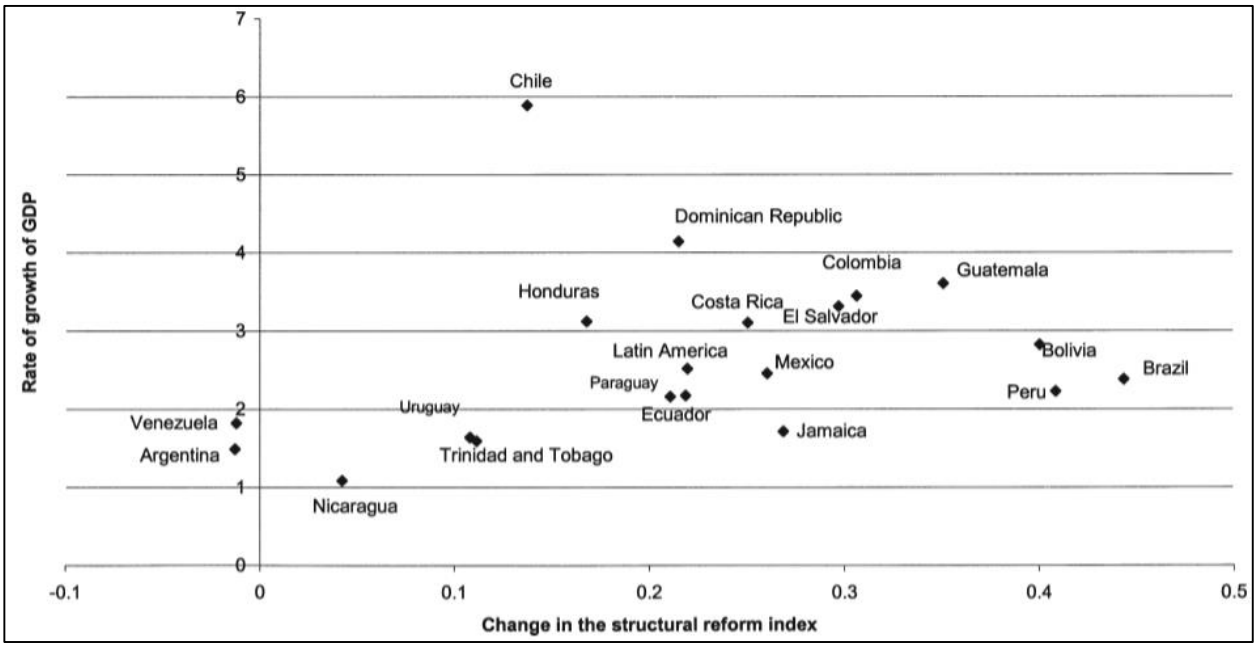


Figure 7: Change in the structural reform index and the rate of growth of real GDP in the Caribbean & Latin America, 1985–2002 (as cited in Moreno Brid, Caldentey & Napoles, 2005).

In 1991, Zimbabwe adopted an Economic Structural Adjustment Programme (ESAP, 1991-95) consistent with the neoclassical growth theory that was intended to change Zimbabwe's regulated economy to a free market-driven economy (Bonga, 2014). The ESAP programme failed to stimulate economic growth and development. There are many examples of African countries (Zaire, Liberia, Angola, Sudan, Burundi, Sierra Leone, Somalia), where adoption of economic policies based on neoclassical

assumptions resulted in negative or zero growth (Easterly 2006, as cited in Angresano, 2007).

The “Shock therapy” (fast-track) reforms based on the "Washington Consensus" were implemented to develop the transitional economies of Central and Eastern Europe, Russia and the former republics of the Soviet Union (Marangos, 2009). These countries were required to implement fast-track privatisation, price liberalisation and macroeconomic stabilisation (Lin, 2002). The Shock therapy assumed that, after an initial dip, the economies would grow quickly within six to twelve months. However, the results were disappointing. “Russia’s inflation reached 8414% in 1993, and that of Ukraine reached 10155%. In 1995, Russia’s GDP was only half of what it had been in 1990, and Ukraine’s situation was worse with a 60% decline during the same period” (Lin, 2002:3).

Despite having worked in the developed world, the neoclassical policy prescriptions failed to stimulate economic growth and development in developing and transitional economies. According to Lee and Mathews (2010), the Washington Consensus failed to recognise development as a catch-up process of closing the gap with the developed nations and a dynamic process that progress through successive stages. It ignored the importance of institutional reforms required for catch-up and capacity-building and only concentrated on reforming policies (Williamson, 2005). The application of universal one-size-fits all policies ignoring the huge cultural, institutional, social, political and economic differences between nations failed to stimulate economic growth in developing countries (Lin & Rosenblatt, 2012). Thus the neoclassical policy prescriptions ignored these other critical determinants of growth and focused only on the operation of free market forces.

2.3.3 Theory of “the Big Push”

The theory emanated with Rosenstein-Rodan in 1943 and states that "there is a minimum level of resources that must be devoted to a development program if it is to have any chance of success” (Hamid, 1999:125). As applied to poor countries, it is based on the fact that “Poor countries are caught in *poverty traps*, out of which they need a *Big Push* involving increased aid and investment, leading to a *takeoff* in per capita income” (Easterly, 2006:289). Thus, increased investment in human capital, infrastructure and public administration funded from a large growth in foreign aid is assumed to result in economic growth and development and taking the poor countries out of poverty. The proponents of the theory argued that due to poor access to traditional capital markets, limited tax base and low domestic savings in poor countries, foreign aid can bridge the financing gap (Wamboye, Adekola & Sergi, 2014). A related model is the Chenery’s “two gap model”, which also emphasises the role of foreign aid in covering the financing gap in developing nations (García-Molina & Ruíz-Tavera, 2010).

The Big Push theory was adopted mainly in the 1950s by the newly independent developing nations to reduce poverty and came back again in the 2000s motivated by the need to meet Millennium Development Goals (MDGs) (Easterly, 2006). However, the experiences of African nations have shown a decline in growth rates despite a huge increase in foreign aid over a prolonged period of time (Wamboye, Adekola & Sergi, 2014). Experiences of developed nations showed that economic growth is much slower and gradual and most countries came out of poverty without foreign aid (Easterly, 2006). Thus the relationship between economic growth and foreign aid is not straight forward and hence, the policy recommendations of the “Big Push” theory remains controversial.

2.3.4 Structuralist theory

The structuralist theory dominated the developing country thinking from the 1950s to 1980s (Otto & Cordes, 2002). The theory argued that the classical and the neoclassical assumptions do not apply to developing countries, as there were formulated for the developed nations (García-Molina & Ruíz-Tavera, 2010). It has its origin in the works of Karl Marx, who argued that "a nation's economy should be planned and managed by the state to serve the interests of the masses" (Dang & Sui Pheng, 2015: 15).

The term "structuralism" emanated from the idea that structural rigidities exist in developing countries, which hinder economic development (Lin & Rosenblatt, 2012). Thus, the structuralist approach look for these structural rigidities, lags, and other attributes in developing economies that influence economic adjustments and development policy (García-Molina & Ruíz-Tavera, 2010). The structuralists argued that under a market-based economy, these rigidities and price distortions are huge and development is only possible with government intervention policies such as price controls, subsidies, directed investment schemes, and trade protection (Lin & Rosenblatt, 2012). This was influenced by the emergence of the Keynesian economics (active state role and distrust of markets) after World War II and the success of the Soviet Union economy under state control (Lin, 2010).

The proponents of the theory believed that international trade with rich countries will deepen underdevelopment and that protection of the infant industries was necessary in developing economies (Otto & Cordes, 2002). Thus they favoured the import-substitution industrialisation strategy, where domestic manufacturing industries would be developed. According to Gerschenkron (as cited in Otto & Cordes, 2002: 1-23):

> *The industrial latecomers (Germany, France, Russia) "did not get there by Adam Smith's route. Rather, they seemed to move in double or triple*

time, via a much more intense involvement by the state – through the direction of investment and a close alliance among government, finance, and industry. This perspective suggested ways to mobilise capital in the face of inadequate institutions and proved that governments could close the gap and provide the means for speeding up the progress of opulence".

In Botswana, the state gained considerable control of diamond mining revenue and translated these revenues into rapid economic growth (Easterly 2006, as cited in Angresano, 2007). However, the majority of industries in developing countries that adopted state intervention policies failed to take off (Lin & Rosenblatt, 2012).

The main reason for the failure of state-led development thinking "was the fact that they attempted to defy the comparative advantage determined by their endowment structures and gave priority to development of capital-intensive heavy industries, when capital in their economies was scarce" (Lin, 2011:197). Thus governments had to continue protecting these industries and this led to distortions and inefficiencies in economies, creation of monopolies, opportunities for corruption and rent-seeking behavior and small scale production (Krueger, 1974 as cited in Lin, 2011).

2.3.5 Endogenous growth theory

The endogenous growth theory by Romer (1986) and Lucas (1988), emerged to find answers to explain the failure of policies prescribed by the neoclassical and structuralist theories (Dang & Sui Pheng, 2015). The theory emphasises that knowledge and technological progress rather than labour and capital are the main determinants of economic growth (Ucak, 2015). These determinants work together, as technological progress encourages innovation activities and the knowledge spill over accelerates the human capital accumulation (Fan, Yan & Sha, 2017).

Both the endogenous and the neoclassical growth models emphasise the role of technological progress but are at variance on the assumptions. The endogenous model regards technological change as an endogenous factor, whereas the Solow model considers it as an exogenous factor (Dang & Sui Pheng, 2015). The neoclassical assumes the operation of free and competitive markets with no government intervention. On the other hand, the endogenous theory acknowledges the existence of imperfect markets and the need for state intervention in creating a favourable environment for attracting investment in knowledge-intensive industries (Dang & Sui Pheng, 2015).

Romer (1986) (as cited in Ville & Wicken, 2012) noted that the endogenous growth model can explain the resource curse as a result of low levels of investment, knowledge and technology. According to Ucak (2015), several studies (Aghion-Howit,1992; Grossman-Helpman, 1991; Lucas,1988, 1993; Romer, 1986, 1987, 1990, 1994) extended the endogenous growth model by including factors such as research and development, human capital, education, physical structure, government policies, spillover effects, institutional factors and externalities that affect endogenous technological change.

A study by Pan and Ngo (2016) of 64 Vietnamese provinces questioned the application of the endogenous growth theory in the early stages of economic development. Their study indicated that foreign direct investment, capital investment and an open trading system are major sources of economic growth for economies in early stages of development. Other critics of the endogenous theory argued that it ignores social and cultural factors and the lack of adequate infrastructure and institutions in developing economies, which is critical for economic development (Dang & Sui Pheng, 2015).

2.3.6 Alternative approaches

The countries of East Asia (Taiwan, Korea, Hong Kong, Singapore) and Japan pursued an export-oriented growth strategy as opposed to strategies prescribed by the dominant theories (neoclassical, structuralist) (Lin & Rosenblatt, 2012). In these countries, the state played an active role, devalued their currencies to promote export competitiveness, invested in human and infrastructure development and embarked on policy and institutional reforms (Adelman, 1999). This led to a phenomenal economic growth in the Asian economies. According to Adelman (1999), these countries mobilised all stakeholders (workers, entrepreneurs, bureaucrats, households) in the economy to commit to the national development agenda through national campaigns and the education system.

In contrast to the Washington Consensus and Shock therapy reforms, Vietnam, China and Mauritius implemented a gradual "dual-track" approach to reforms from the 1980s into the 1990s. The dual-track reforms involved continued state protection of priority industries in traditional sectors and at the same time liberalising some sectors of the economy (Lin, 2002). China began introducing these economic reforms in 1979. Economic growth was promoted under limited privatisations and competition and subsidised loans to government-owned enterprises. Private enterprises and joint ventures were also allowed in many sectors of the economy and the economy gradually moved towards a full market economy (Lin & Rosenblatt, 2012). According to Lin (2010:19), the gradual approach "provides transitory protection to the old priority sectors in order to maintain stability".

Many economists were pessimistic about the dual-track reforms as the state and state-owned enterprises were playing an important role. They argued that these reforms would lead to rent-seeking, corruption and inefficiency and eventually collapse of the economy (Lin, 2002). Despite the skepticism, China experienced exceptional economic growth. Its annual real GDP averaged 9.6% from 1979 to 2016, the fastest in economic history (Mbah &

Ojo, 2018). The approach also resulted in the continuity of economic and social stability (Lin, 2002).

Figure 8 shows the comparison of economic growth rates of countries that followed the dual track approach (China, Vietnam) and those that adopted the shock therapy policies (former Union of Soviet Socialist Republic - F.USSR and Eastern Europe). From the early 1990s, the economies of China and Vietnam started to grow significantly whilst those of the former Union of Soviet Socialist Republic (USSR) and Eastern European countries declined (Lin, 2015).

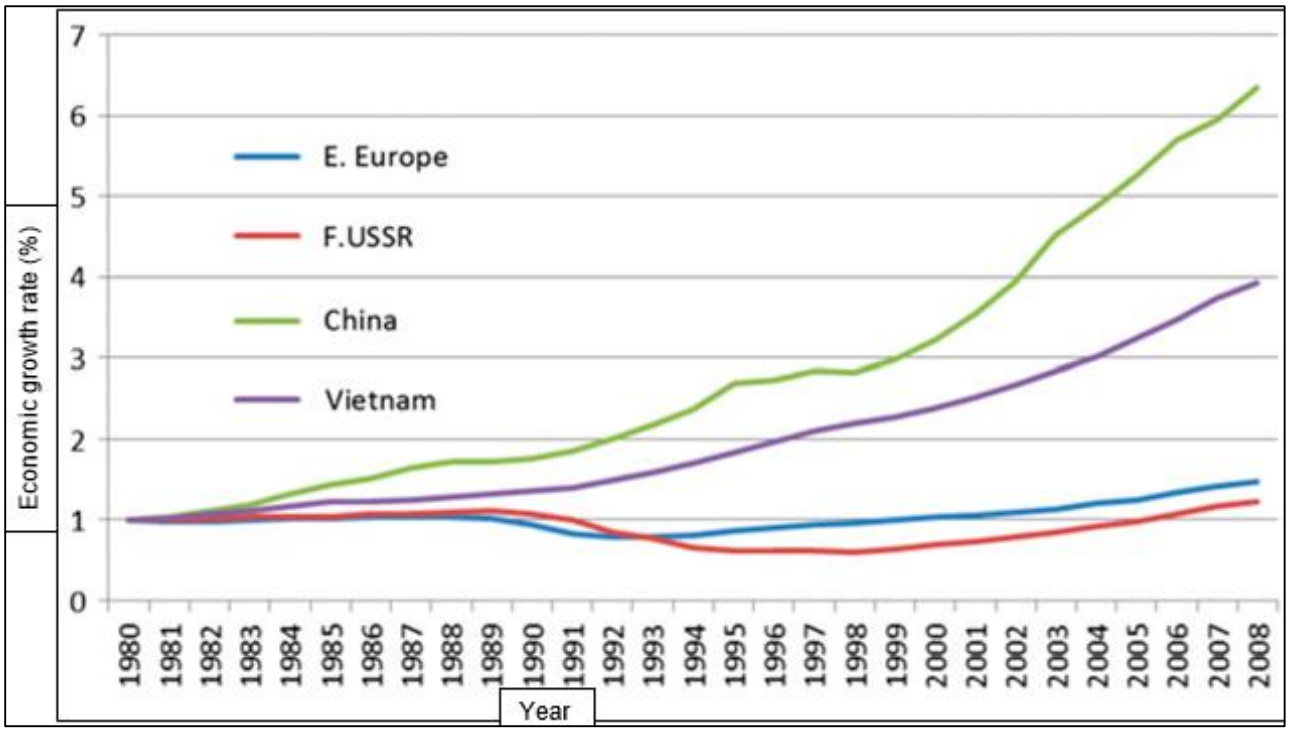


Figure 8: Comparison of economic growth rates of countries that followed the dual track approach (China, Vietnam) and those that adopted the shock therapy policies (Eastern Europe, Former USSR) (as cited in Lin, 2015).

The New Structural Economic (NSE) theory combines elements of the neoclassical and the structuralist theories and argues that economies should follow their comparative advantages as decided by their endowments (infrastructure, human and physical capital, natural

resources). According to Lin (2011), economic development is a continual process that goes through various stages with different economic structures due to their differences in endowments. Therefore, for effective development, economies should be allowed to transition from the early stage, characterised by low capital availability and labour and resource-intensive activities to advanced stage characterised by abundant capital, advanced technologies and economies of scale in production (Lin, 2011).

Lin (2011:194-195) further argued that "at any given stage of development, the market is the fundamental mechanism for efficient resource allocation; but the state needs to play a proactive, facilitating role in the move from a lower stage to a higher stage". In resource-rich nations, the NSE theory recommends investment of resource revenues in infrastructure, human capital, social capital, and providing incentives for diversification into other sectors (Lin, 2011). Thus, instead of keeping the resource rents in sovereign wealth funds, they should be largely invested in domestic projects that facilitate economic growth and development.

According to Lin and Rosenblatt (2012), countries can implement the NSE in six steps laid out in the Growth Identification and Facilitation Framework. These are:

- *"Step 1: Find fast growing countries with similar endowment structures and with about 100% higher per capita income. Identify dynamically growing, tradable industries that have performed well in those countries over the last 20 years;*
- *Step 2: Among the industries in that list, the government may give priority to those in which some domestic private firms have already entered spontaneously, and try to identify the obstacles that are preventing these firms from upgrading the quality of their products or the barriers that limit entry to those industries by other private firms;*

- *Step 3: In industries where no domestic firms are currently present, seek FDI from countries examined in step 1 or organise new firm incubation programmes;*
- *Step 4: In addition to the industries identified in step 1, the government should also pay attention to spontaneous self-discovery by private enterprises and give support to scale up successful private innovations in new industries;*
- *Step 5: In developing countries with poor infrastructure and an unfriendly business environment, the government can invest in industrial parks or export processing zones and make the necessary improvements to attract domestic private firms and/or foreign firms that may be willing to invest in the targeted industries; and*
- *Step 6: The government may also provide limited incentives to domestic pioneer firms or foreign investors that work within the list of industries identified in step 1 in order to compensate for the non-rival, public knowledge created by their investments" (Lin and Rosenblatt, 2012: 34).*

Rodrik (2011) disagreed with the NSE theory on the notion of government policies ensuing the economy's comparative advantage. He cited the experiences of China, Japan and South Korea, whose industries were built successfully defying the notion of comparative advantage. Rodrik (2011: 228) argued that "If China, with its huge surplus of agricultural labor, were to specialise in the type of products that its factor endowments recommend, would it now be exporting the advanced products that it is?"

2.4 Role of Minerals in an Economy

The exploitation of mineral resources is generally viewed as an unsustainable economic activity. It is considered as an 'enclave' and economically and geographically isolated (Otto & Cordes, 2002). Contribution of minerals to economic growth and development is further reduced by the inherent instability of international mineral prices. However,

minerals have played a leading role in the industrial development of many nations. Minerals contribute to economic development through providing raw materials needed to produce goods in various sectors, creation of direct and indirect employment and contribution to government revenues (British Geological Survey, 2004).

Minerals act as feedstocks into manufacturing, energy, construction, agriculture, transport, technology and communication sectors of the economy. Energy minerals that include coal, radioactive minerals, oil and natural gas are used for the generation of power needed to drive the various industrial equipment and generation of electricity, which is essential for all sectors of the economy. Coal as a source of energy was instrumental in the European industrial revolution in the eighteenth century and also, China and India have heavily relied on coal to fuel economic take-off (Thomson & Booluck, 2010).

The manufacturing of consumer and industrial goods requires minerals such as iron, copper, aluminium, platinum, zinc, lead, nickel, gold and silver. The construction industry, which is an important sector of the economy uses iron and steel in the construction of steel frameworks (bridges, railways, large buildings), copper for electrical wiring and plumbing tubes, gypsum in cement and plaster, clay in bricks, slate for roofing tiles and gravel and sand for concrete making.

Minerals such as nitrogen, phosphate, potassium and limestone are used in the manufacture of agricultural fertilisers used to enrich soil with nutrients so as to increase productivity in agriculture. This is important as the agricultural sector is the source of food for nations and it also supplies raw materials to other industries. In the fields of technology and communication, contribution of minerals such as cobalt, copper, lithium, tantalum, cadmium and rare earth elements (REEs) is critical. These have unique chemical properties that are important in the production of high-technology products

such as laptops, smartphones, electric vehicle batteries, solar photovoltaics, wind turbines, nuclear reactors and fuel cells (Andersson, 2020).

Figure 9 shows the macroeconomic contributions of the mineral sector to the national economies of low and middle-income nations. The minerals sector's share in foreign direct investment (FDI) inflows varies from 60% to 90% of total FDI, mineral exports constitute 30% to 60% of total exports, mineral taxation 3% to 20% of government revenues, and contributes 3% to 10% to total national income (International Council on Mining and Metals - ICMM, 2014). Direct employment contributes about 1-2% to total employment and worldwide, the sector employs about 2.5 million people formally and 15-20 million people informally as artisanal and small-scale miners (ICMM, 2014).

The value of global mineral production as shown in Figure 10 peaked at 1,8 trillion United States dollars (USD) in 2011, which represents 1.9% of global GDP (Ericsson & Löf, 2019). This shows the importance of minerals in the global economy.

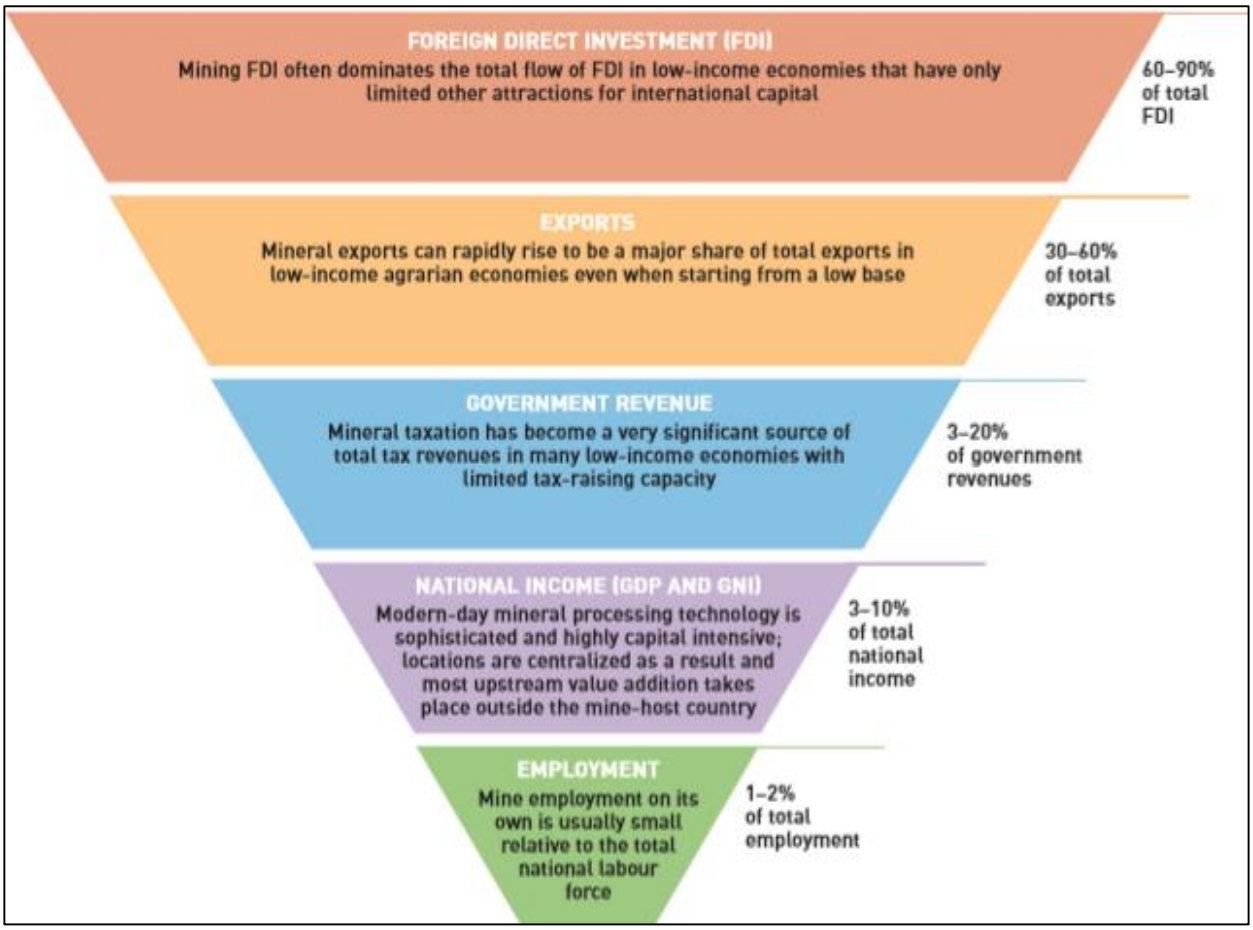


Figure 9: Macro-level contributions of the mineral sector in low and middle income countries (as cited in ICMM, 2014).

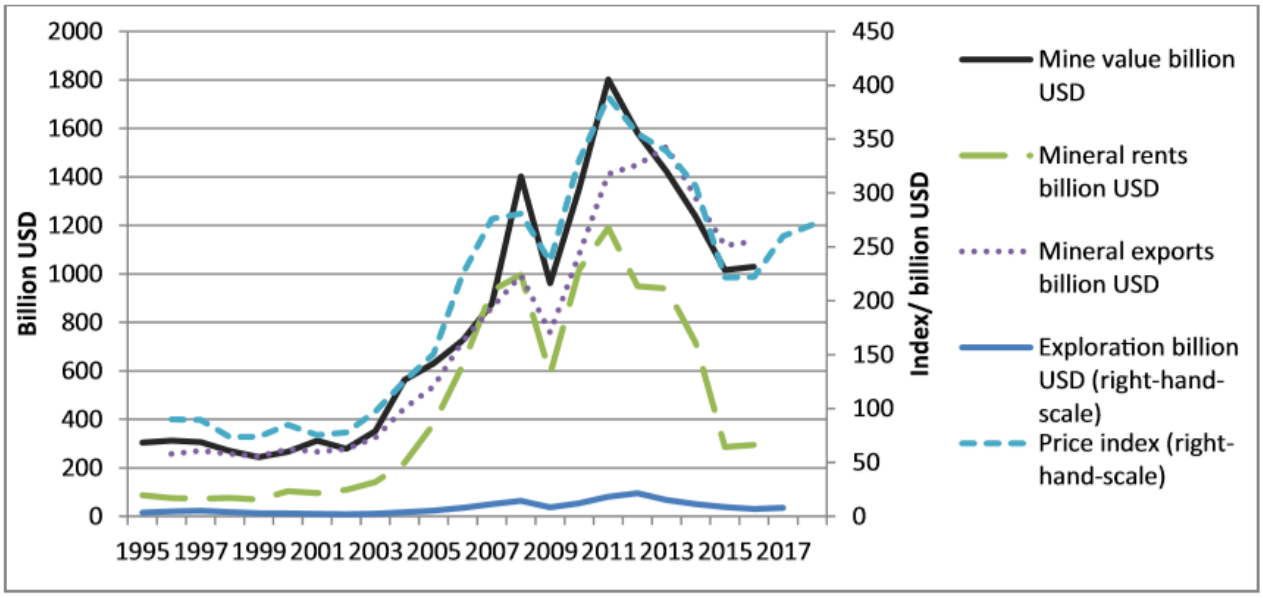


Figure 10: Global mineral exports, value of mine production, prices and exploration development trends, 1995–2018 (as cited in Ericsson & Löf, 2019).

These contributions by the mineral sector will result in direct, indirect and induced effects on the economy as shown in Figure 11. Production of minerals as raw materials for export contribute positively to economic growth and development through foreign exchange earnings. Revenues received by the government from the minerals sector can be used on public spending in social sectors (health, education, and social protection) and for growth and diversification (Mugerwa & Suzman, 2015). This will foster national development as shown in Figure 11. The huge expenditure by the mineral industry companies on employment, procurement and infrastructure can be used to promote economic growth and development through local content policies (local procurement of goods and services, employing locals) (Mugerwa & Suzman, 2015). Local content strategies have been used by many resource-based countries to promote industrialisation and economic diversification. The Nordic countries, Norway and Finland were among the first to successfully develop their economies through implementation of local content policies in their mineral sectors (Bastida, 2014).

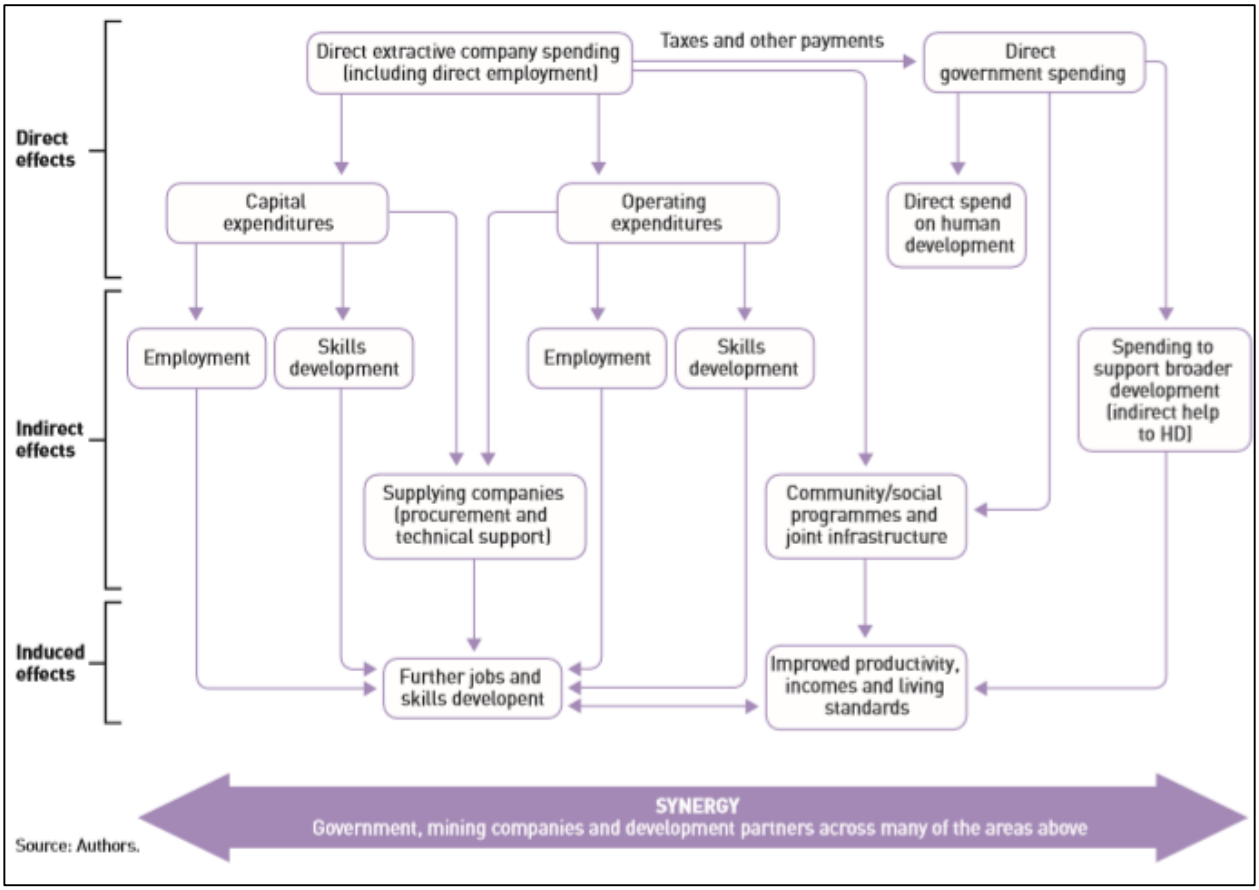


Figure 11: Mineral sector activities and development (as cited in ICMM, 2014).

The mining industry has several positive spill-over effects to other sectors of the economy, which can help to drive economic growth and development. The technological know-how and knowledge generated in the mining sector will diffuse to other sectors of the economy over time. Infrastructure like power stations, railways and roads developed for the mineral sector will be available for other sectors to use. The mineral sector provides a huge market for services, capital goods and consumables essential throughout the mine value chain. Mining results in induced employment as an effect of the created local businesses (services, transport, stores), social facilities (schools, hospitals) and through expenditure by the mineral sector employees, which increase the demand for goods and services. The resource rents can be used to promote development in other sectors of the economy through loans to small and medium enterprises (Farooki &

Kaplinsky, 2014). Therefore, mining contributes to the state of development of sectors like financial services, manufacturing, transport and logistics.

The analysis above indicates the vital role that minerals play in an economy, hence, their continued adequate and uninterrupted supply is critical. Some minerals have been designated as “critical minerals” due to their critical role in economies and national security and are at higher risk of shortage. The United States of America (USA), China, European Commission (EC) and many other countries regularly publish and maintain a list of “critical minerals” (Andersson, 2020). China has 10 minerals (REEs, tantalum, indium, tungsten, germanium, antimony, zirconium, molybdenum, tin, gallium) and the USA has five minerals (REEs, indium, niobium, manganese, Platinum Group Metals) on the list of critical minerals (Gu, 2011). Figure 12 shows countries accounting for the largest share of some of the critical minerals used as raw materials. China supplies 95% of the world’s REEs and its measures to reduce exports by almost half has put in jeopardy many industries worldwide (clean energy technologies, information technologies, military technologies) that use REEs as critical inputs (Gu, 2011).

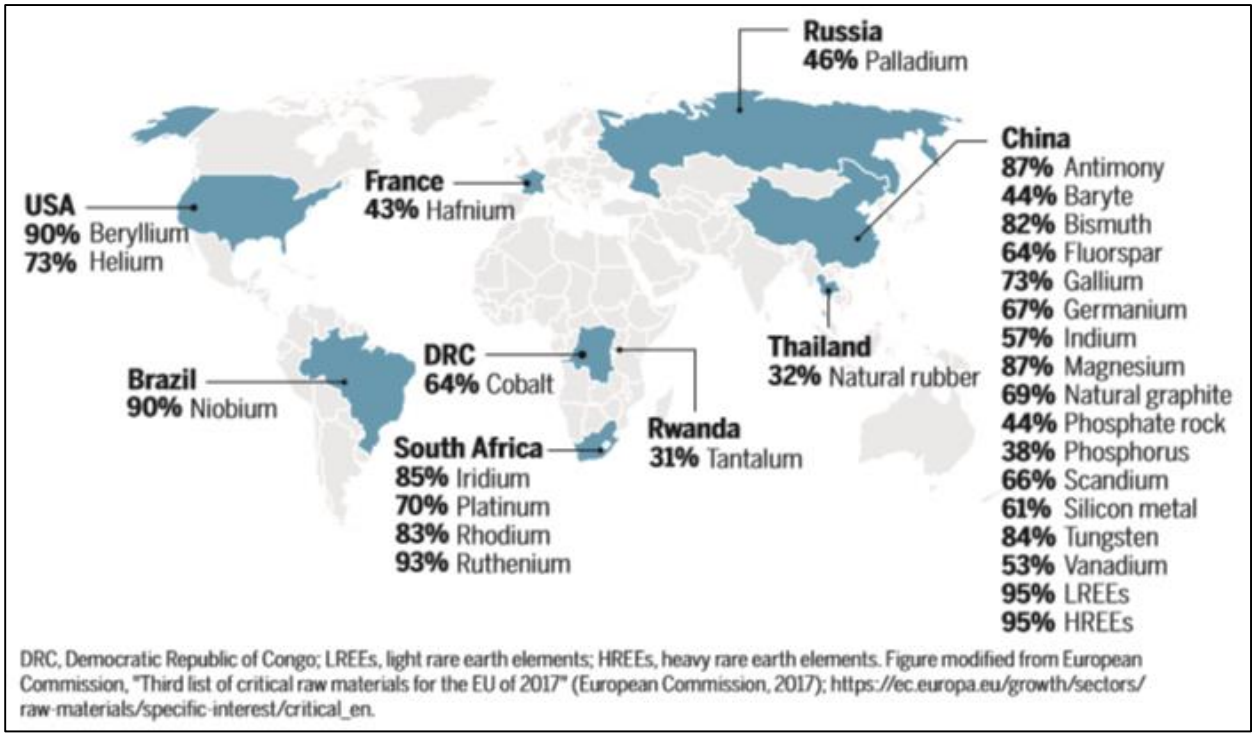


Figure 12: Countries accounting for the largest share of some critical raw materials (as cited in Sovacool et al., 2020).

2.5 Summary

Various nations and groups of nations adopted different economic and development schools of thought over time, influenced by their political, economic and cultural situation. These varied from two extremes of state control (1950s-1980s) and free market dominance (late 18th Century, 1980s to 2000s) to mixed economies. The neoclassical and the structuralist growth theories informed by free market and state control ideologies respectively failed to deliver relevant growth policies in developing countries. The policy prescriptions were applied across all nations and regions without considering the individual economy's own unique history, comparative advantage, institutions, culture, religion and regional variables.

The developing economy success stories of the East Asian nations and Mauritius in Africa through alternative approaches (export-oriented growth strategy, dual-track approach, New Structural Economic theory) to

economic growth and development have posed a challenge and a re-thinking to the neoclassical and structuralist growth models. The common attributes of all the success stories were that they combined elements of both the neoclassical and the structuralist growth theories. According to Lin (2010:11), “In all these successful cases, the market was the fundamental mechanism for resource allocation as predicted by laissez faire, rational expectations theories, and the Washington Consensus. However, the state also played an active role in the development and transition process as the Keynesian theories and structuralist approach to development had envisioned”. There is consensus among the different theories on technology as a key determinant of economic growth.

Hence, the development-thinking that combines elements of both free-market and state intervention and considers knowledge and technological change as the main sources of economic growth and development should be embraced. Thus, resource-rich nations can avoid and or get out of the resource curse by adopting policy frameworks in line with this development thinking and following their comparative advantage of abundant mineral resources.

The next chapter reviews the literature on the resource curse theory. This is followed by an analysis of resource-based economic development theories.

3 THE RESOURCE CURSE THEORY AND RESOURCE-BASED ECONOMIC DEVELOPMENT THEORIES

3.1 Introduction

The objective of this chapter is to unpack the resource curse theory, its evolution, transmission channels, evidence and critics. This will involve an appraisal of the resource curse literature. The chapter will also consider resource-based economic growth and development theories. In order to be able to find solutions to avoid the resource curse one needs to have a comprehensive understanding of the mechanisms of the resource curse and the debates around resource-based development.

3.2 The Resource Curse Theory

3.2.1 Evolution of the resource curse theory

The literature on the resource curse focused on the following main study areas:

- Resources and potential benefits;
- Economic growth;
- Economic development;
- Correlation between resource-abundance and economic growth;
- Correlation between resource-abundance and conflicts; and
- Correlation between resource-abundance and quality of institutions and democratic governance.

Various scholars have utilised different measures of natural resource as shown in Tables 3 and 4. Resource-dependence and resource-abundance are the key measures of natural resources. Resource-dependence measures the extent to which a nation depends on natural resources and is usually estimated by the share of natural resource exports in Gross Domestic Product (GDP). Resource-abundance relates to a nation's

estimated natural resources (Brunnschweiler & Bulte, 2008 as cited in Badeeb, Lean & Clark, 2017).

According to Gilberthorpe and Papyrakis (2015), the research by economists and political scientists is concentrated at the country (macro) and regional (meso) level, whilst research by social scientists, dominated by anthropologists is confined at the community (micro) level. The different disciplines also used different research methodologies. Economists and political scientists applied cross-country regression analysis, whilst social scientists carried out qualitative research (Gilberthorpe & Papyrakis, 2015).

An optimistic view that natural resources facilitate economic development originated with Adam Smith and David Ricardo. They argued that natural resources are instrumental in the economic growth and development of nations and this view was advanced by many economists well into the 1970s (Badeeb et al., 2017).

The pessimistic view that natural resource abundance leads to economic decline and conflicts gained momentum from the 1980s. According to Tilton and Guzman (2016: 13), “The first seeds of the resource curse thesis sprouted in the 1980s… then a number of in-depth country studies including those by Richard Auty (1990,1993,1994a, 1994b, 1994c), a British geographer, who first used the term *the Resource Curse,* followed suggesting that mineral wealth and extraction were actually impeding economic growth”. The progression of the resource curse theory is shown in Figure 13.

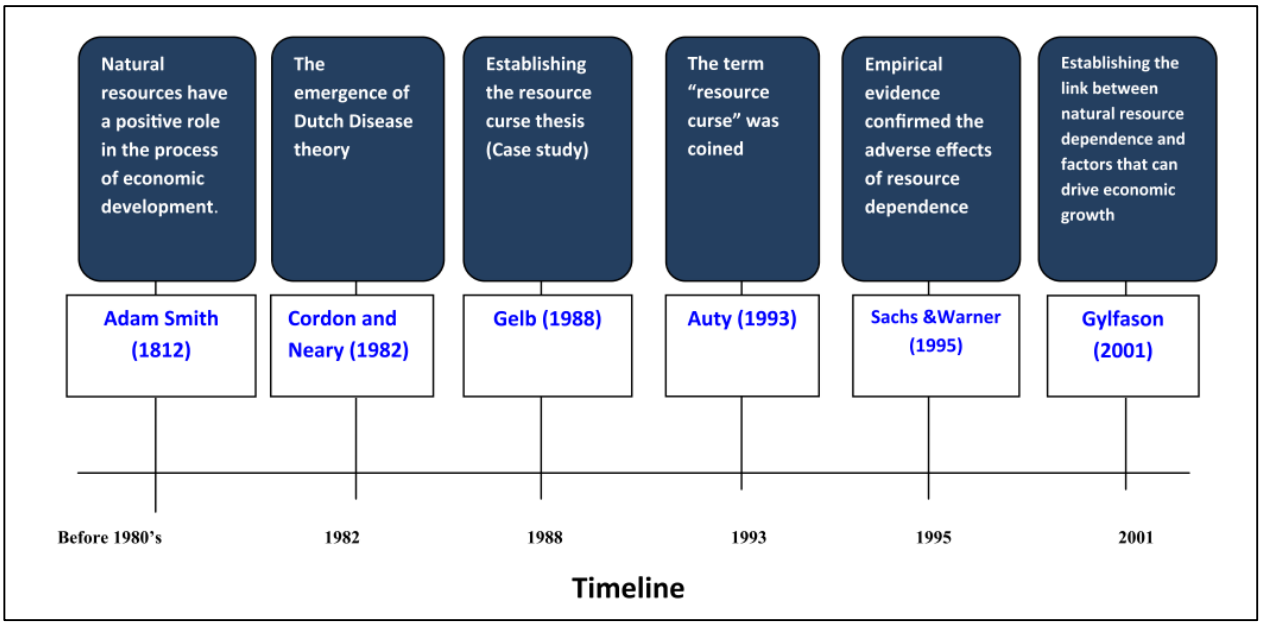


Figure 13: Progression of the resource curse thesis (Badeeb et al., 2017:125).

3.2.2 Evidence of the resource curse

The resource curse theory is based on a large number of studies led by the ground breaking writings of Sachs and Warner (1995), who used a sample of international data (1970 to 1989), to show a negative correlation between economic growth and resource-abundance (James, 2015). According to Brunnschweiler (2008), resource-abundance was measured based on the share of primary exports in GDP. Figure 14 shows a plot of annual growth rates (vertical axis) between 1970 and 1989 against the share of natural resource exports (horizontal axis) in GDP in 1971 for 97 developing countries (Sachs & Warner, 1995).

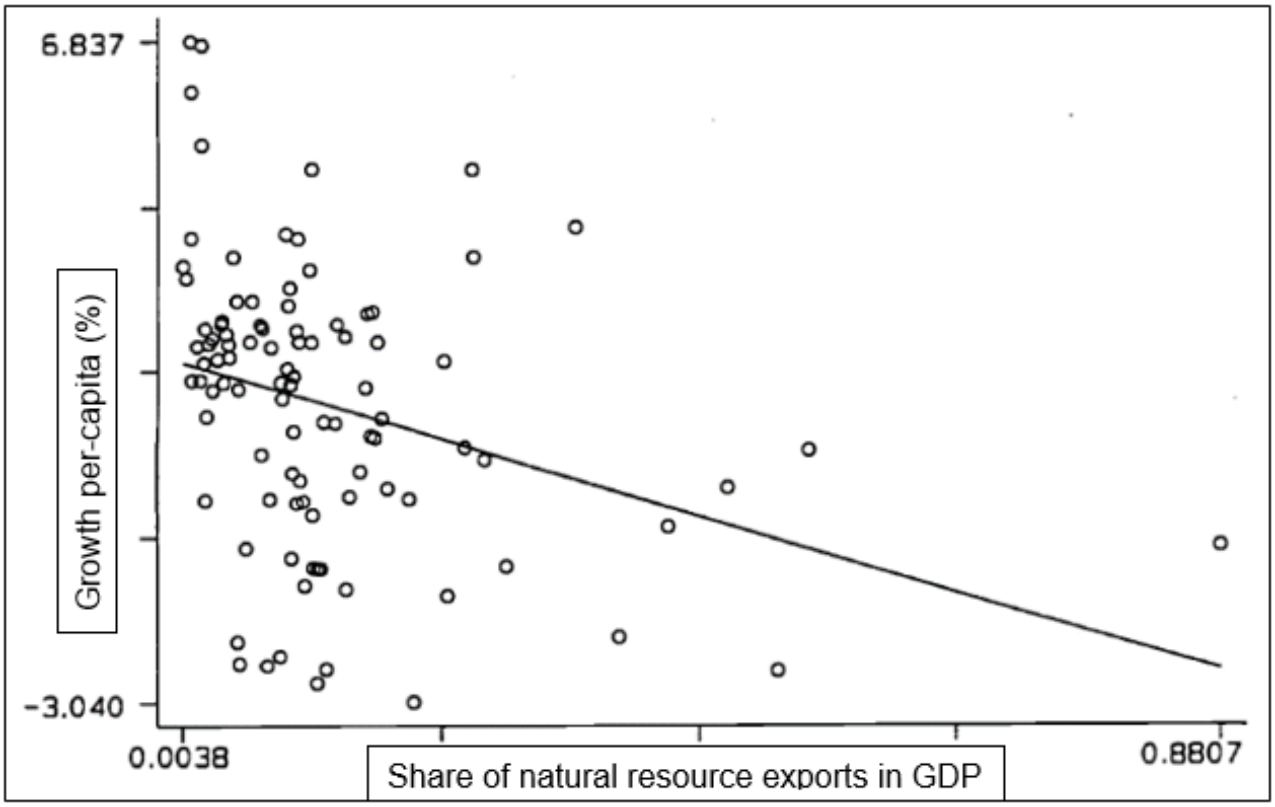


Figure 14: A negative relationship between growth per-capita (vertical axis) between 1970 and 1989 and the share of natural resource exports in GDP (horizontal axis) in 1971 (Sachs & Warner, 1995).

Gylfason (2001) extended the resource curse studies to include factors like savings, investment and human capital formation that drive economic growth. The savings rate in resource-rich nations tend to be low or negative and educational quality tends to be negatively related to the abundance of natural resources, hence, low levels of human capital (Szalai, 2018). Table 3 shows a summary of the studies that confirmed the natural resource curse.

Table 3: A compilation of some of the studies on natural resource curse (Badeeb et al, 2017:129).

Authors	Periods	Sample	Variable	Natural Resource Measure	Main Findings
Gylfason (2001)	1980–1997	65 resource- rich countries	Human capital development	Share of natural capital in national wealth	The adverse effects of natural resource abundance on economic growth may in part reflect a negative effect on education
Atkinson and Hamilton (2003)	1980–1995	103 countries	Genuine savings	Share of natural resource rent in GDP	The countries where growth has lagged have a combination of natural resource, macroeconomic and public expenditure policies have led to a low rate of genuine savings (net savings adjusted for resource depletion).
Gylfason and Zoega (2006)	1965–1998	85 countries	Savings and investment	Share of natural capital in national wealth	A heavy dependence on natural resources may hurt saving and investment indirectly by slowing development of the financial system.
Stijns (2006)	1970–1999	102 countries	Human capital	Natural resource rent per capita	Resource wealth and its corresponding rents make a significantly positive difference in allowing countries to invest in human capital.
Dietz et al. (2007)	1970–2001	115 countries	Genuine savings	Share of fuel and mineral products in total exports	Negative effect of natural resource dependence on genuine savings.
Papyrakis and Gerlagh (2007)	1986–2001	United States	Investment, human capital and openness	The share of the primary sector's production in GDP	Natural resource dependence decreases investment, schooling, and openness.
Bornhorst et al. (2008)	1992–2005	30 hydro-carbon producing countries	Fiscal policy	Share of hydrocarbon revenue in GDP	There is a statistically significant negative relationship between non-hydrocarbon revenues and hydrocarbon revenues.
Bond and Malik (2009)	1970–1998	78 developing countries	Export structure and investment	The share of natural capital in total wealth	Finds important differences between fossil fuels and non-fuel resources. Significant fuel exports tend to increase private (and public) investment, but there is also a robust negative effect from export concentration.
Daniele (2011)	1980–2004	Countries grouped by income Level	Human development	Share of ores and fuel in total merchandise	Results show that human development measures are negatively correlated with natural resource dependence, but positively correlated with resource abundance.
Blanco and Grier (2012)	1975–2004	17 Latin American countries	Investment and human capital	Total exports of primary commodities divided by GDP	Overall, resource dependence has no significant direct effect on physical and human capital. When disaggregating, petroleum export dependence has a significant positive effect on physical capital, but negative effect on human capital.
Boos and Holm-Müller (2013)	1970–1990	87 developing countries	Genuine savings	Share of natural resource rents in GDP	The determinants that are responsible for the resource curse also have a negative effect on genuine savings.
Apergis et al. (2014)	1970–2011	Middle East and North Africa (MENA) countries	Agriculture value added	Share of oil rent in GDP	Finds a negative relationship between oil rents and long run agriculture value added.
Bhattacharyya and Hodler (2014)	1970–2005	133 countries	Financial development	Share of natural resource rents in GDP	Resource rents hinder financial development only if institution quality is relatively poor.
Farhadi et al. (2015)	1970–2010	99 countries	Productivity growth	Share of natural resource rents in GDP	Negative effects of resource rents on productivity growth may turn positive in countries with greater economic freedom.
Cockx and Francken (2016)	1995–2009	140 countries	Education Spending	The share of natural capital in total wealth	There is an adverse effect of resource dependence on public education expenditures relative to GDP.

3.2.3 Resource curse transmission channels

Several models by economists, political scientists and social scientists have been used to explain the resource curse. According to Otto and Cordes (2002), most economists attributed the resource curse to failure of policies adopted by governments as they have faith in the operation of free market forces.

Economists have also used the “Dutch Disease” model to explain the resource curse with evidence from several country studies. The term “Dutch Disease” was initially used in the Netherlands in the 1970s to describe a decline in the manufacturing sector as a consequence of the discovery of natural gas (Mugerwa & Suzman, 2015). Since then it has been used to explain the collapse of the tradable sectors (agriculture, manufacturing) of resource-rich nations as a result of a booming natural resources sector. During the boom period, the large inflow of foreign exchange earnings as a result of natural resource exports will strengthen the exchange rate. This will make exports from the non-natural resource sector less competitive and reduce the growth potential of the economy.

The boom and bust cycles characteristic of the resources sector result in volatility of the commodity markets which can explain the resource curse. According to Tilton and Guzman (2016), the volatility of commodity prices results in unpredictable revenue flow from the natural resources sector. This makes it difficult for the resource-rich nations to plan for the national development strategies with revenues from the natural resources sector. Lack of diversification from mining into other sectors of the economy also contributes to the resource curse.

“Auty (1993) characterised the mining sector as having enclave tendencies. He showed that governments of mineral-rich countries tended to collect low withholding revenues because foreign-owned mining companies repatriated

their earnings overseas" (Badeeb et al., 2017: 124). So if there are no interventions, mining will generally not result in the economic development of host countries.

The declining terms of trade have been used to explain the resource curse as well. The costs of imports for developing countries have been higher compared to earnings from exports leaving no excess funds for local economic development.

The rent-seeking model suggests that in many developing countries, rents from natural resources are not used for economic development due to the rent-seeking behaviour. According to Biresselioglu et al (2018), governments of resource-rich nations may use the resource rents to consolidate their power, enhance their popularity and to adopt oppressive policies, which may lead to conflict.

Other political reasons include the fact that mineral wealth was taken by colonialists to develop their home countries. Economic growth and development of colonies was not part of the agenda of colonialists. They were focused on exploiting natural resources in Asian and African countries to feed into the industrialised economies in their "mother countries". Hence, the colonies were just providers of raw materials (Otto & Cordes, 2002). Wiig and Kolstad (2012) noted that recent studies have shown that political mechanisms are the likely causes of the resource curse as opposed to economic problems.

Mehlum, Moene, and Torvik (2006) argued that the resource curse only occurs in countries with poor quality institutions. According to Boutilier (2017:311), the quality of institutions is measured by "rule of law, political stability and violence, government effectiveness, absence of corruption, voice and accountability, regulatory burden, law and order tradition, quality

of the bureaucracy, political rights, civil liberties, property rights and rule-based governance".

Resource-rich nations with poor quality institutions are characterised by corruption, a lack of democratic accountability, poor policy choices, rent-seeking behaviour and a lack of protection for property rights (Boutilier, 2017). High transparency and accountability, respect of property rights, enforceable law and equality of all citizens before the law, and freedom of expression of citizens including movement, religion and political affiliation characterise resource-rich countries with strong institutions (Raggl, 2017). Hence, strong institutions can be used to map out policy reforms that can prevent corruption and rent-seeking behaviour, which negatively affect economic growth in resource-rich countries (Dietsche, 2014). McMahon and Moreira (2014: 7-8) were of the opinion that "credibility, quality, transparency and accountability of policy-making processes, public institutions, the legal regulatory climate and sector governance are major determinants of how successfully countries can channel their resource wealth into sustainable development".

According to Brunnschweiler (2008), the resource curse arises from lower spending on education and less schooling in resource-abundant nations. Education promotes economic growth through transmission of ideas and knowledge, increase in labour force efficiency and productivity and increase in new knowledge and technologies (Hanushek & Wößmann, 2007). Figure 15 shows that Africa and other developing countries lag behind in terms of educational attainment, which has been blamed on natural resource dependence. According to Gylfason (2001), citizens of resource-rich nations become stuck in low-skill intensive jobs with no motivation to invest in their education and those of their children, as there is no return to investment in education for them. He also argued that governments of resource-rich nations may neglect investment in human capital as they can survive from high rents of natural resources for long periods without skilled

labour. Thus, natural resources can hinder economic growth by crowding out human capital.

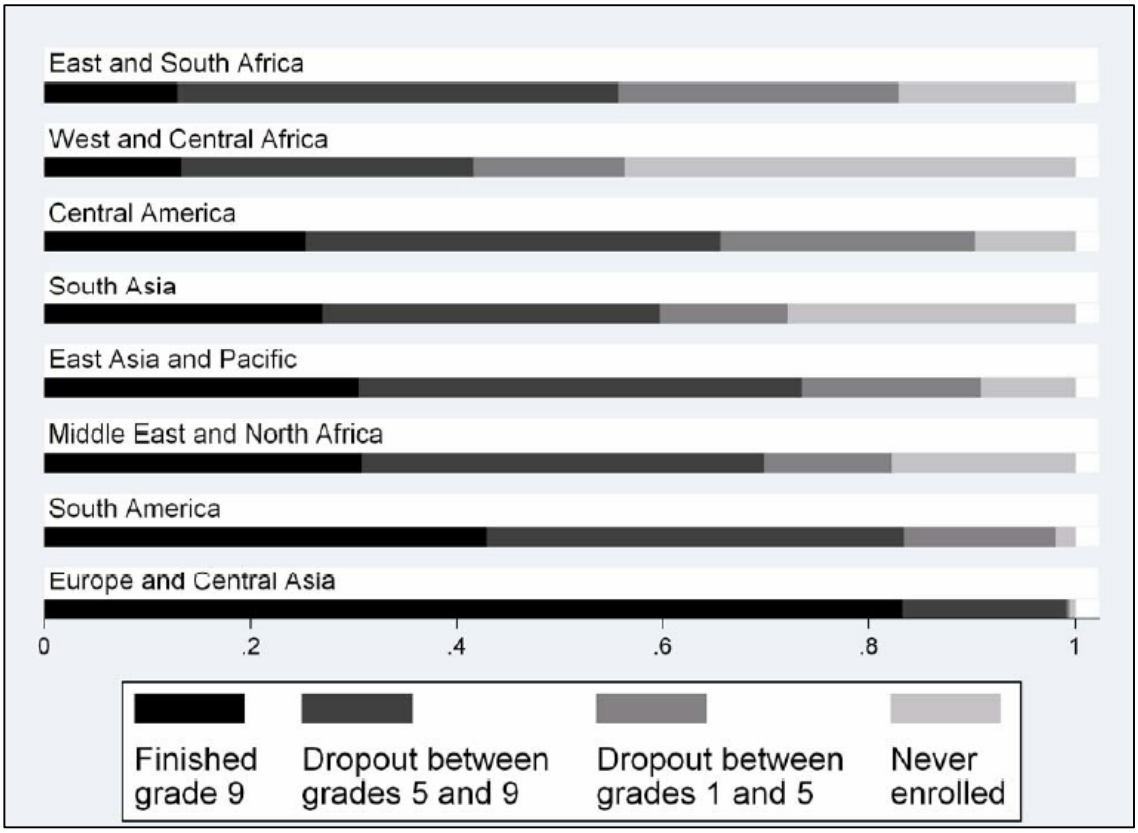


Figure 15: Lack of educational attainment in developing countries (Hanushek & Wößmann, 2007).

In summary, the resource curse operates through crowding out skilled labour, financial capital, social capital, human capital and the tradable sector (manufacturing, agricultural), which are essential for economic growth. This crowding out effect is shown in Figure 16.

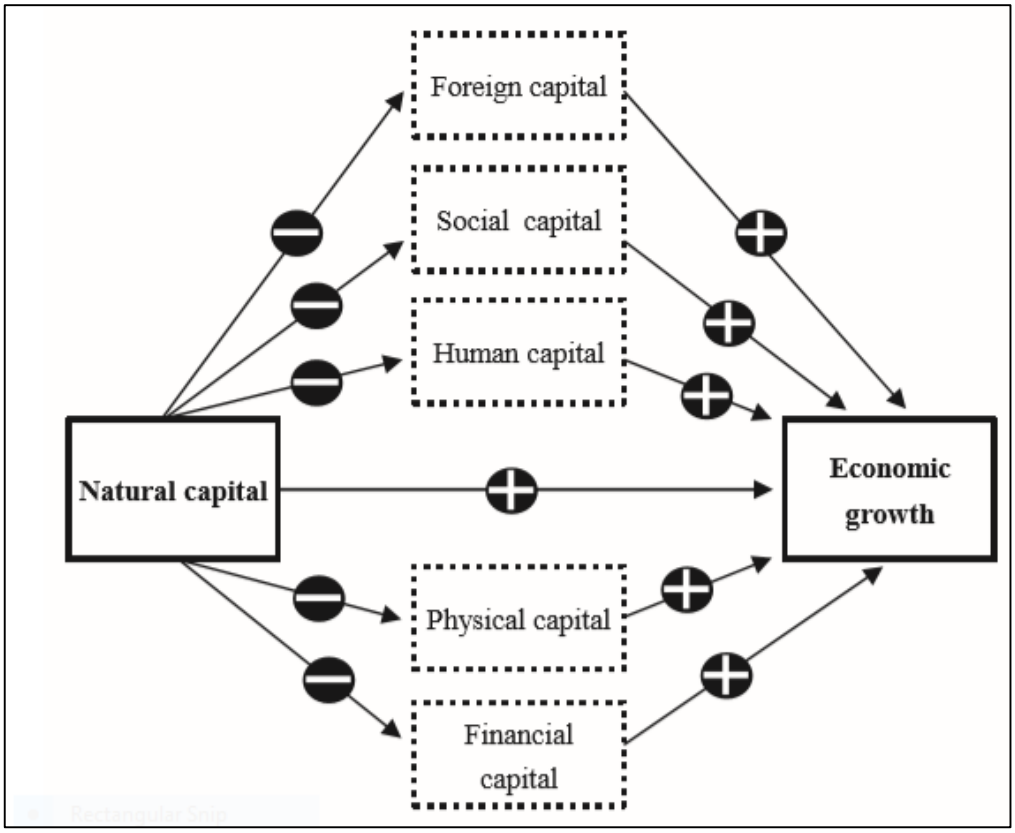


Figure 16: The crowding out effect of natural resources (Szalai, 2018).

Examples of nations that have experienced the resource curse include Zambia, the Democratic Republic of Congo and Bolivia. These nations have failed to utilise revenues from exploitation of mineral resources to diversify into other sectors of the economy for sustainable development (Otto & Cordes, 2002). In the Democratic Republic of Congo, natural resources have resulted in war and political instability.

3.2.4 Resource curse critics

The resource curse theory has failed to explain the significant economic development in some resource abundant countries like Norway, Chile, Canada and Australia. Norway experienced phenomenal economic growth as measured by GDP per capita. Its GDP in 1970 was 5% below the Organisation for Economic Co-operation and Development (OECD) average and increased to 70% in 2010 above the average (Holden, 2013).

Findings from studies by several scholars have shown that to the contrary, natural resources have a positive effect on economic growth. This is a challenge to the resource curse theory. Some of these studies are shown in Table 4. A study by Sachs and Warner in 1995, showed a negative correlation between resource abundance and economic growth from 1970 to 1990, while a study by James in 2015 for the same period indicated a positive relationship (James, 2015). According to Brunnschweiler (2008), the variation in the findings of the resource curse studies can be attributed to the various types of resources under investigation and the different measures of resource abundance used.

Sachs and Warner's definition of natural resources included minerals, agriculture, metals and fuels, whilst James used oil and gas data (James, 2015). A study by Davis (2011) (as cited in Ramírez-Cendrero & Wirth, 2016) showed that the resource curse is associated with mineral resources.

The results of a study by Brunnschweiler (2008) over the period of 1970 to 2000 using per capita mineral and total natural resource wealth as measures of natural resource abundance showed a positive correlation with economic growth. This contradicts the findings by Sachs and Warner and many other scholars, who found a negative correlation between resource abundance and economic growth, using the share of primary exports in GDP as a measure of resource abundance (Brunnschweiler, 2008).

Brunnschweiler and Bulte (2008) insisted that the share of primary exports in GDP is a measure of resource dependence and not that of resource abundance and they rejected the existence of the resource curse. Ledermann and Maloney (2003) (as cited in Brunnschweiler, 2008) were of the opinion that the adoption of an economic policy, which results in high dependence on the natural resources sector is the reason for the slow growth in nations with a huge proportion of primary exports. Hence, they

rejected the notion that slow growth in resource-rich nations is a direct consequence of the abundance of their natural resources.

A study by James (2015) found that the growth rates of resource dependent nations depend on years over which the study was done. Manzano and Rigobon (2002) (as cited in Badeeb et al., 2017: 130) also argued that “it is possible that the resource curse model of Sachs and Warner (1995) is merely reflecting the consequences of the global oil price shocks of the 1970's and early 1980's, rather than an inherent tendency for natural-resource countries to suffer reduced growth”.

Table 4: A compilation of some of the natural resource curse critics (Badeeb et al, 2017:130).

Author	Sample	Period	Natural resource measure	Findings
Lederman and Maloney (2007)	cross-section and panel	1980–1999	Primary exports divided by total merchandise exports + Primary exports divided by GDP	There is no evidence of a negative impact of this variable on growth neither in cross-section nor in the panel systems estimator
Brunnschweiler and Bulte (2008)	60 countries from five regions: Europe, North America, Central and South America, Africa and the Middle East, Asia and Oceania	1970–1989	The GDP shares of total natural resource and mineral resource exports+ the logs of total natural capital and mineral resource assets per capita	Resource dependence does not affect growth and resource abundance positively affects growth and institutional quality
Alexeev and Conrad (2009)	OPEC members and the major non-OPEC oil producers of more than 2 million barrels of oil per day		hydrocarbon deposits per capita+ Oil/GDP ratio	The effect of a large endowment of oil and other mineral resources on long-term economic growth of countries has been on balance positive.
Cavalcanti et al. (2011)	53 oil exporting and importing countries	1980–2006	Real value of oil production per capita	Oil abundance has a positive effect on both income levels and economic growth.
Boyce and Emery (2011)	Panel data for U.S. states	1970–2001	Real natural resource price, natural resource sector employment	The resources curse can only be determined by an investigation of the correlation between resource abundance and income levels, and they found that this relationship is positive.
James (2015b)	111 resource producing countries	Different growth periods from 1970 to 2010	Natural resource goods as share of income	In all growth periods, the relationship between resource dependence and economic growth in resource production sectors is non negative.

3.2.5 Resource curse and development in Africa

Africa's abundant natural resources can be utilised to promote economic development. Over 50% of the African nations are rich in natural resources and Africa is home to about 30% of mineral resources on earth (International Monetary Fund as cited in Laporte & Quatrebarbes, 2015). Bastida (2014: 73) argued that mineral resources "can be transformed into other forms of sustainable capital and can play a vital role in catalysing development". Resources were instrumental in the economic development of other nations like USA, Canada and Australia.

However, the transformation of natural resources into other forms of sustainable capital depends on the type of state, as there are two types of states namely the "Rentier state" and the "Developmental state" (Haslam, 2016). The characteristics of a rentier state are shown in Figure 17. Rentier states are characterised by over-reliance on resource rents, which induces corruption, patronage and institutional weakness (Kornek, Steckel, Lessmann & Edenhofer, 2017). This results in deficiency of investment in human resources, lack of knowledge-based industries and entrepreneurial spirit as well as poor industrial production leading to a rentier mentality across the society (Rutledge, 2017). As a result, there will be reduced economic efficiency and thus poor economic growth and development of resource-rich nations (Petkov, 2018). Thus the rentier state is associated with the resource curse.

According to Xu, Jilenga and Deng (2019), "Many African countries such as Angola, Sudan, Tanzania and Nigeria are rich in diamonds, oil and minerals, but their people continue to experience low incomes". Poor institutional frameworks have been blamed for poor economic performance in Africa (Onditi, 2019). If institutions are bad, no matter how good a policy is, it will not deliver the desired results (Sarmidi, Hook law & Jafari, 2014). Ejiogu, et al. (2019) gave the example of Nigeria which joined the Extractive Industries Transparency Initiative (EITI) in 2004 but the established Nigerian

Extractive Industries Transparency Initiative (NEITI) is riddled with problems of transparency, accountability and corruption.

Thus the majority of African states are rentier states which have failed to utilise the resource rents for economic development. Yet other resource-rich nations elsewhere successfully grew their economies using natural resources. This is a major cause of concern for the development of the African continent and this is what motivates this study.

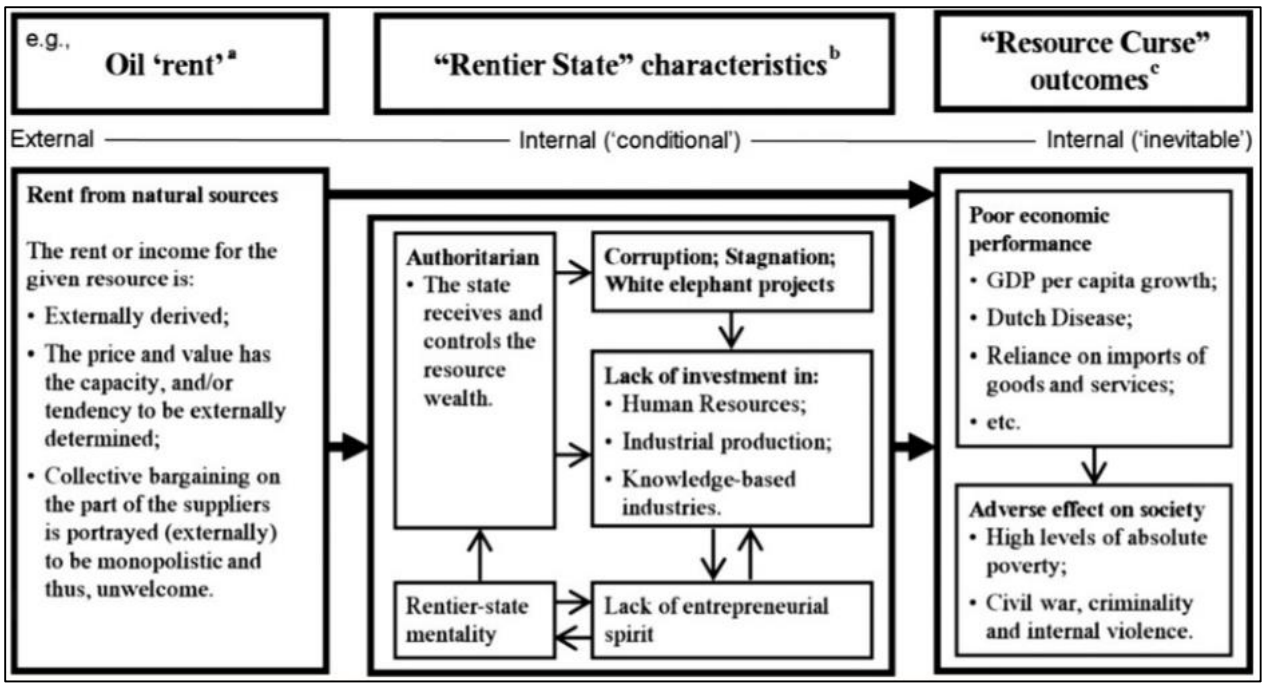


Figure 17: Characteristics of a Rentier state (as cited in Rutledge, 2017).

The developmental state uses resource rents for economic growth and development (Haslam, 2016). According to the African Union Commission (AUC) (2015), the characteristics of a developmental state are:

- Visionary, capable and credible leadership and a developmental ideology;
- Autonomy in preparing and implementing policies by the state;
- Good quality institutions and state institutional capacity;

- Effective national development planning;
- Creation of an enabling environment that can attract foreign direct investment;
- Support and nurture entrepreneurship;
- Significant investment in human capital accumulation; and
- Political and macroeconomic stability, peace and policy consistency.

These characteristics are the building blocks of the East Asian developmental states while they are lacking in African countries that are highly dependent on commodity exports, have low savings, depend on foreign investments and have weak capital markets (Saunders & Caramento, 2018). However, Botswana is cited in literature as an example of a developmental state in Africa. It embraced a market-led developmental ideology, has credible leadership, democratic institutions, effective regulatory bodies pursued the right macroeconomic policies and ensured that rents from diamond were used for economic growth and development (Stevens, 2006). However, Botswana has failed to diversify its economy and still heavily relies on natural resource revenues and because of that it has been called a “development-oriented gate-keeping state” (Saunders & Caramento, 2018: 1169).

Development in Africa has gone through many phases. According to Otto and Cordes (2002), in the 1960s (post-colonial era), the African states adopted a commanding role in development characterised by import substitution industrialisation policies. These policies were meant to promote local production of goods which were being imported so as to develop local industries. The import substitution strategies were copied from the experiences of European countries (France, Germany), China, USA, and the Union of Soviet Socialist Republic (USSR) “that took advantage of high levels of protectionism to develop manufacturing and technology” (Babatunde, 2012:152).

This approach was considered most appropriate by the newly independent African governments as it was in-line with the notion of national sovereignty, control and ownership of the means of production. However, the strategy did not result in significant economic growth in Africa. Figure 18 shows a general decline in GDP for Sub-Saharan African (SSA) nations from 1970 to 1991, even with the discovery of oil resources in countries like Gabon, Nigeria and Algeria in the 1970s. The failure was largely due to inexperience, inefficiency and corruption in the state (Babatunde, 2012).

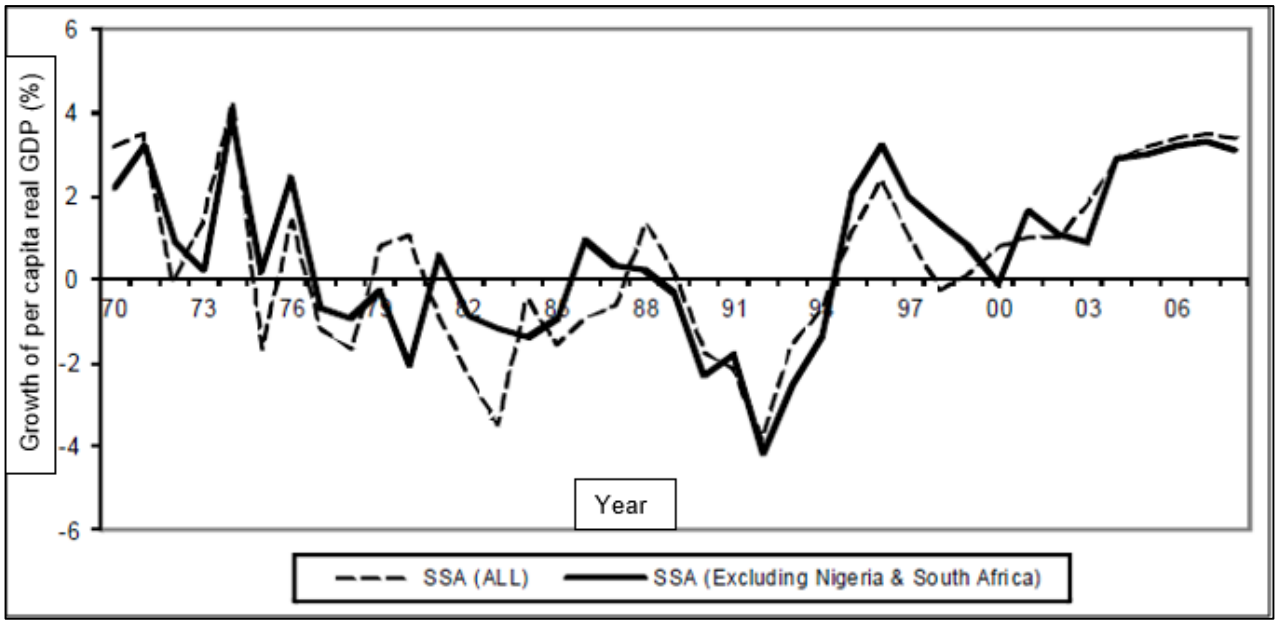


Figure 18: Growth of per capita real GDP in SSA (vertical axis), 1970-2008 (as cited in Babatunde, 2012).

For the sake of addressing the poor economic growth in Africa in the 1960s and 1970s, the Lagos Plan of Action was adopted in 1980 by the Organisation of African Unity (OAU). This plan of action was aimed at "the basic restructuring of the economic base of our continent, we resolved to adopt a far-reaching regional approach based primarily on collective self-reliance" (OAU, 1980: 4). The main objectives were the eradication of poverty, satisfaction of basic needs and creation of employment through development of agriculture, natural resources sector, industrialisation and sectoral integration at continental level and promotion of regional

cooperation. Half of the financial resources for the programme were to be sourced domestically and the other half from the international community (OAU, 1980). The Lagos Plan of Action failed to register significant growth as the GDP continued to decline during the 1980s (Figure 18).

After the failure of state intervention policies of the 1960s and the Lagos Plan of Action of 1980, there was need for development re-thinking in Africa. A new growth agenda (Structural Adjustment Programme - SAP) based on the free market ideology and prescribed by the World Bank and the International Monetary Fund was adopted in the mid-1980s (Otto & Cordes, 2002). This strategy was meant to open up Africa to the international economy through removal of export and import taxes, increasing imports, providing export incentives, exchange rate liberalisation and a greatly reduced role of the government (Babatunde, 2012).

This further plunged the African states into underdevelopment as real GDP growth rates continued to fall into the early 1990s (Figure 18). The free market policy prescriptions used the experiences of developed nations and failed to examine bottlenecks of individual developing economies (Lin & Rosenblatt, 2012).

Figure 19 shows that from the mid-1990s to 2017, Africa's GDP growth which averaged 4.6% annually, was higher than Latin American and the Caribbean (LAC) but lower than Asian countries (African Union Commission & Organisation for Economic Co-operation and Development (OECD), 2018). The explanation of this growth was controversial. Some scholars attributed the growth to exogenous factors like high metal prices and the rising demand of commodities. Others attributed it to the foreign direct investment as a result of SAP or post-SAP initiatives (Millennium Development Goals, Heavily Indebted Poor Countries) and increased trade with emerging countries like China and India (Babatunde, 2012).

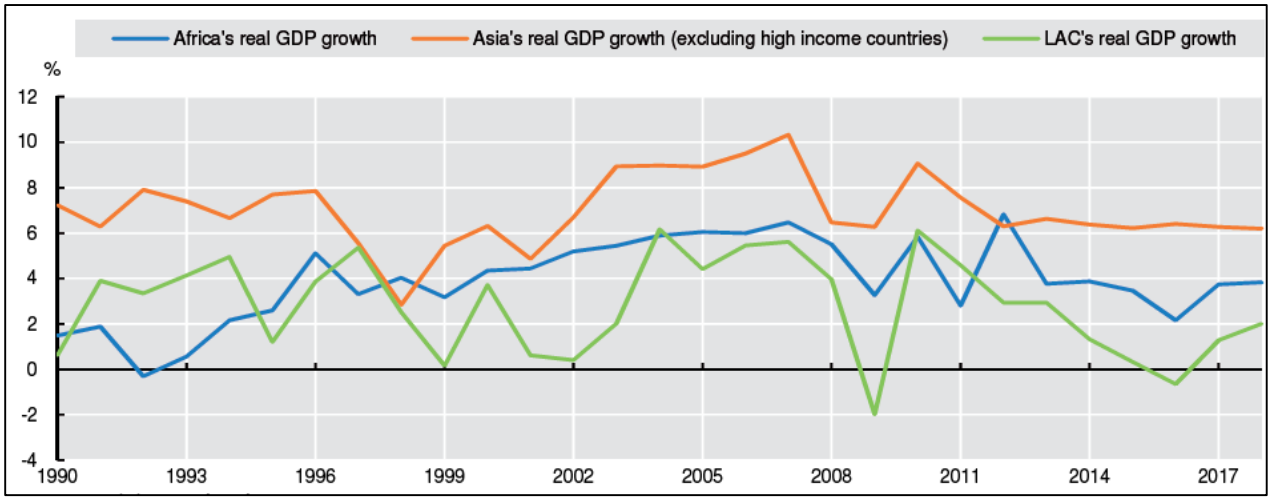


Figure 19: Real economic growth in Africa, Asia and LAC, 1990-2017 (African Union Commission & OECD, 2018).

The failure of SAP led to the crafting of another African initiative named the New Partnership for Africa's Development (NEPAD) in 2001. NEPAD replaced the New Africa Initiative (NAI), which was formed from the coalition of the Omega Plan and the Millennium Africa Recovery Plan (MAP). NEPAD's objectives were the integration of Africa into the world economy, promotion of sustainable growth and development and ultimately, the eradication of poverty. Its core principles included transparency and accountability, good governance, peace and security, democracy, sound economic policies and partnerships (African Union, 2001).

Critics argued that the policy prescriptions of NEPAD were similar to those of the SAP, which failed to stimulate development and instead left a trail of social and economic problems in Africa. Also NEPAD was not an all-inclusive agenda as it was initiated by only four countries (Nigeria, South Africa, Algeria, Senegal) and imposed on the rest of Africa (Mbaku, 2004).

According to Mbaku (2004), the continent-wide initiatives failed due to the heterogeneous nature of the African society, different political and economic systems, lack of funds (external or domestic), lack of institutional capacity and some of the initiatives originated from individuals and were not participatory.

Today, the development agenda on the African continent is driven by the African Union Development Agency (AUDA), the successor of the NEPAD agency. The development is guided by Africa's vision for the next 50 years, the Agenda 2063, which was initiated in 2013. It was crafted based on an all-inclusive bottom-up participatory approach. The Agenda 2063 "draws upon the continent's rich history, natural resources, people, culture, as well as its institutions at all levels, and capitalises on the opportunities of changing African and global trends and dynamics" (African Union Commission, 2015:12).

The main drivers of this development are human capital accumulation with emphasis on science, technology and engineering and will be financed mainly from domestic resource mobilisation (African Union Commission, 2015). The Agenda spells out the African peoples' aspirations that will underpin development in Africa for the next 50 years. The aspirations are:

- "A prosperous Africa based on inclusive growth and sustainable development;
- An integrated continent, politically united and based on the ideals of Pan Africanism and the vision of Africa's Renaissance;
- An Africa of good governance, democracy, respect for human rights, justice and rule of law;
- A peaceful and secure Africa;
- An Africa with a strong cultural identity, common heritage, shared values and ethics;
- An Africa whose development is people driven, relying on the potential of African people, especially its women and youth, and caring for the children; and
- Africa as a strong, united, resilient and influential global player and partner". (African Union Commission, 2015: 4).

The strategy takes cognisance of the diversity of the African continent, so each nation will develop policies to suit its circumstances to meet the same goals and targets. Flagship projects of the agenda include the Integrated High speed Train Network, African Virtual and e-university, Continental Free Trade Area, a Single African Airspace, the Grand Inga Dam Project and Africa Outer Space Strategy (African Union Commission, 2015). Figure 20 shows the aspirations and the related goals.



Figure 20: Agenda 2063, aspirations and goals (African Union Commission, 2015).

Despite Africa's economy growing by 4.7% annually between 2000 and 2017, growth has remained volatile, and poverty and unemployment levels have remained high (African Union Commission & OECD, 2018). Some scholars have become skeptical on the ability of Agenda 2063 to turn the fortunes of the continent. They argued that many ambitious mega projects such as those in agenda 2063 have been proposed in previous African

initiatives but never materialised (Ndizera & Muzee, 2018). Unless issues of lack of ideological support to the vision and of political will, lack of ownership and domestic finances as well as conflicting interests confronting Africa are resolved, the aspirations of the continent will not be realised (Ndizera & Muzee, 2018).

3.3 Resource-based Economic Growth and Development

According to Dietsche (2014), policy debate on resource-based economic growth and development has been dominated by the three questions shown in Figure 21. Policy focus in low and middle income economies in the 1980s-1990s was on establishing enabling environments, so as to attract foreign direct investment and in the 1990s-2000s, the focus was on avoiding the resource curse (Bastida, 2014). From 2010 onwards, the focus was on building economic linkages between the resource sector and the rest of the economy.



Figure 21: Key policy questions on minerals and development (Dietsche, 2014).

3.3.1 The linkage theory

The linkage theory is based on the assumption that building linkages between the minerals sector and other sectors of the economy will result in diversification from mining and hence, sustainable development (Dietsche, 2014). Mineral resource linkages develop "integrated resource linkages industrial clusters where the different components reinforce one another and, from initially serving local demand, develop competencies to export

goods and services to resource sectors in the region and ultimately globally" (Jourdan, 2014:87). Economic linkages are grouped into production (downstream(forward), upstream(backward), horizontal) linkages, fiscal linkages, consumption linkages, lateral migration linkages and side stream linkages (knowledge, spatial). Figure 22 shows linkages in the minerals industry and the relationship between firms.

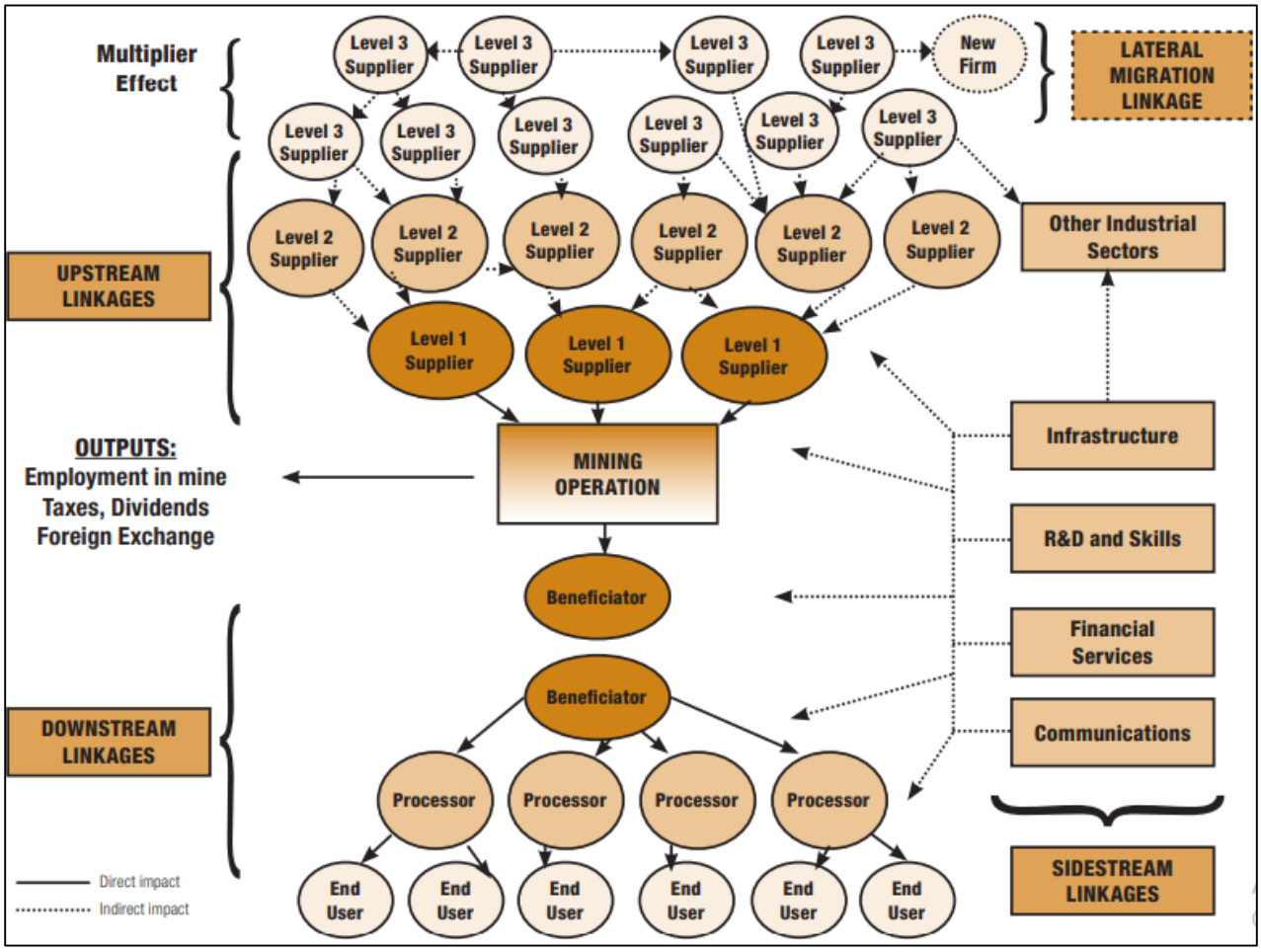


Figure 22: Linkages in the minerals industry and the relationship between firms (as cited in United Nations Economic Commission for Africa, 2011).

Production linkages include upstream, downstream and horizontal linkages. Upstream linkages relate to goods and services required as inputs to the mineral sector. Upstream linkages are where there are the greatest opportunities for industrialisation because there is a guaranteed market for the goods. The growth of the upstream linkages can be facilitated through

research and development, access to capital and investment in human resources development (Columbia Center on Sustainable Investment (CCSI), 2016).

Downstream linkages relate to mineral beneficiation through smelting, refining and minerals being used as feedstocks into manufacturing, energy, infrastructure and agriculture sectors. Development of downstream linkages is capital, skills and technology intensive, however, it results in the highest employment and stable prices of produced goods (CCSI, 2016). Horizontal linkages relate to the development of new industries using the skills and capabilities developed in the mineral sector. Suppliers who develop capabilities in the mineral input sector also develop capabilities that can be applied to other sectors (Morris, Kaplinsky, & Kaplan, 2011).

Fiscal linkages consist of taxes captured from the mineral sector in the form of resource rent tax, royalties and corporate income taxes, which could be used to spur development in other sectors of the economy. Consumption linkages result from increased spending of earnings from the mineral sector on goods and services produced by other sectors of the economy, hence, contributing to the development of new industries and employment (Bastida, 2014).

Lateral migration linkages arise in resource-rich nations that embrace knowledge-intensive production techniques and technology in the mineral sector, which can be transferred to other sectors of the economy. These can be facilitated through investment in research and development and specialist technical skills (Dietsche, 2014). Side-stream linkages, which include knowledge linkages (transfer of knowledge and technological know-how), spatial (infrastructure) linkages and the ancillary services (financial, logistical, communication) required in the mineral sector, which can benefit other sectors of the economy (CCSI, 2016).

According to Dietsche (2014), building linkages requires:

- Sound macroeconomic policies at the macro-level;
- Selective policies at the meso-level to promote key sectors;
- Specific measures at the micro-level to deal with difficulties at firm level; and
- Public-private sector coordination and collaboration where a shared vision and strategies can be formed.

According to Leeuw (2012), economic linkages result in economic multipliers and these depend on the scale of mining and technology used. Table 5 shows the typical mining multipliers.

Table 5: Typical mining multipliers (Leeuw, 2012:26).

Multiplier	**Description**
Social	Construction of infrastructure by mining companies such as housing, roads, schools and clinics, and provision of utilities such as electricity and recreational facilitate
Primary incomes	Household demand for goods as the consequence of primary income derived from the mining industry
Employment	Jobs created in other industries as a consequence of demand or supply of goods by the mining industry
Income-terms of trade	Net positive effect on balance of payments, foreign reserves, monetary policy and general business confidence induced by mining exports
Capital formation	Positive effect by the mining industry in attracting inflow of foreign capital and generating domestic capital as well

In Africa, resource-based development is being driven by the Africa Mining Vision (AMV) initiative through the following:

- Improvement in mineral rents and management through adoption of the Extractive Industries Transparent Initiative principles and the

Kimberly Process Certification Scheme in mineral policies and legislations;

- Increasing funding in geological and mining data collection systems;
- Building human and institutional capacities;
- Formalising the artisanal and small scale mining and facilitating access to technology, skills, knowledge and markets;
- Improvement in mineral sector governance;
- Investment in research and development;
- Developing sustainable environmental and social strategies;
- Mobilising mining and infrastructure investment; and
- Developing economic linkages between the mineral sector and other sectors of the economy (African Union, 2011).

The AMV cascades down to country level through the Country Mining Visions (CMVs). It borrows from the experiences of the Nordic countries where the government played a leading role and collaborated with the private sector and local communities. The Nordic countries promoted economic diversification and industrialisation through maximising economic linkages between the mineral sector and other sectors of the economy (African Union, 2009).

However, African economies continue to be resource-dependent, with little diversification and industrialisation compounded by the continent's failure to finance its own development and illicit flow of resources (African Union Commission, 2015). In order to realise these linkages and avoid the resource curse, Africa needs to address the existing constraints which include inadequate infrastructure, energy shortages, technological deficiencies and low levels of research and development (African Union, 2009). In addition, prudent mineral sector policies and legislation at country level, aligned to national objectives of economic growth and development are critical in resource-based development (Otto & Cordes, 2002).

3.3.2 The staple theory

The Staple theory was formulated by Harold Adams Innis and William Archibald Mackintosh in the 1930s to explain the Canadian economic development. They argued that the neoclassical theory failed to explain the economic development of nations rich in natural resources (Wellstead, 2007). The Staple theory is a branch of export-led theories of economic growth and has become an important contemporary model and framework for economic analysis. It provides some of the explanation of the resource curse and blessings in resource-rich nations (Altman, 2003). The term “staple” refers to the main commodity produced in a region and describes products from agriculture, fishing and extractive industry (Vahabi, 2017).

Mackintosh believed in the optimistic version of the staples theory, where production of staples would foster long term economic growth and development through linkages with other sectors of the economy (Vahabi, 2017). The demand of capital goods and services in the resource-based sectors can drive knowledge development in other sectors, which in turn spread to many parts of the economy, as shown in Figure 23.

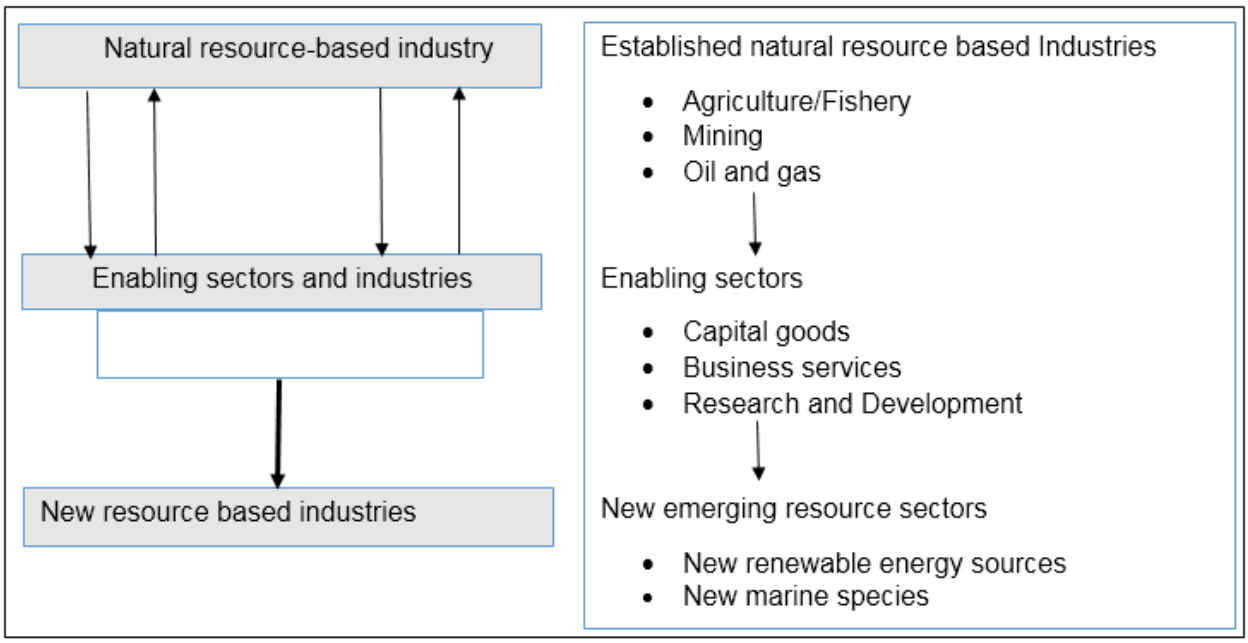


Figure 23: Resource-based economy diversification model (Ville & Wicken, 2012).

According to the staples theory, "development in many countries has been built around the expansion of export sectors in general, and natural resource exports in particular" (Willebald, Badia-Miro & Pinilla, 2015:7). United States, Canada and Australia are examples of natural resource-rich nations, where the export of "staples" was instrumental in economic growth and development. Hence, the optimistic version of the theory helps to explain the resource blessings in resource-rich countries.

Innis recognised that natural resource-rich economies may fail to develop linkages with other sectors of the economy and fall into the "Staple trap". According to Innis (as cited in Wellstead, 2007), the export of staple commodities would foster economic growth as long as the supply and demand of the resources increases. Given the volatility of the commodity markets, Innis was pessimistic and argued that the dependence on staples would likely deepen and as more resources are devoted to resource exports, a declining rate of economic growth would ensue. Auty (2004) (cited in Vahabi, 2017) used the Staple trap model to explain the decline in growth in resource-rich nations. Hence, Staple trap can be used to explain

the resource curse. However, resource-rich countries can escape the Staple trap through prudent policies (Watkins, as cited in Wellstead, 2007).

3.3.3 The vent for surplus theory

The vent for surplus theory by Hla Myint is an element of Adam Smiths' theory of international trade (Kurz, 1992). The theory suggests that international trade would provide demand for the surplus resources produced domestically in an economy that would have remained unutilised without trade between countries (Willebald et al., 2015). Therefore, trade provides an outlet for surplus natural resources, which contribute to economic growth and development through income received and its distribution within the domestic economy.

According to Otto and Cordes (2002), the Vent for surplus and Staples theories provided alternative models for economic development, especially for those countries advocating for a leading-sector approach. These models were adopted by several countries in Asia, Africa and Latin America for developing their economies (Findlay & Lundahl, 1994).

3.3.4 Implementation of resource-based industrialisation

Resource-based industrialisation can be implemented in non-mutually exclusive four phases in which a natural comparative advantage (phase 1) will be converted into a competitive advantage (phase 4) (Jourdan, 2014). The four phases are as shown in Figure 24. Jourdan (2014) described the four phases as follows:

- The first phase involves resource exploitation with little local value addition and most inputs are imported;
- The second phase involves export of processed resources, increasing production engineering services and use of local lower-technology inputs;

- The third phase involves export of some goods and services produced using local lower-technology inputs. High value addition increases and engineering services are more built on local intellectual property; and
- The fourth phase involves “exports of resource-based products of greater variety and complexity and the migration of knowledge-intensive resource services industries into new, resource-independent sectors” (Jourdan, 2014:89).

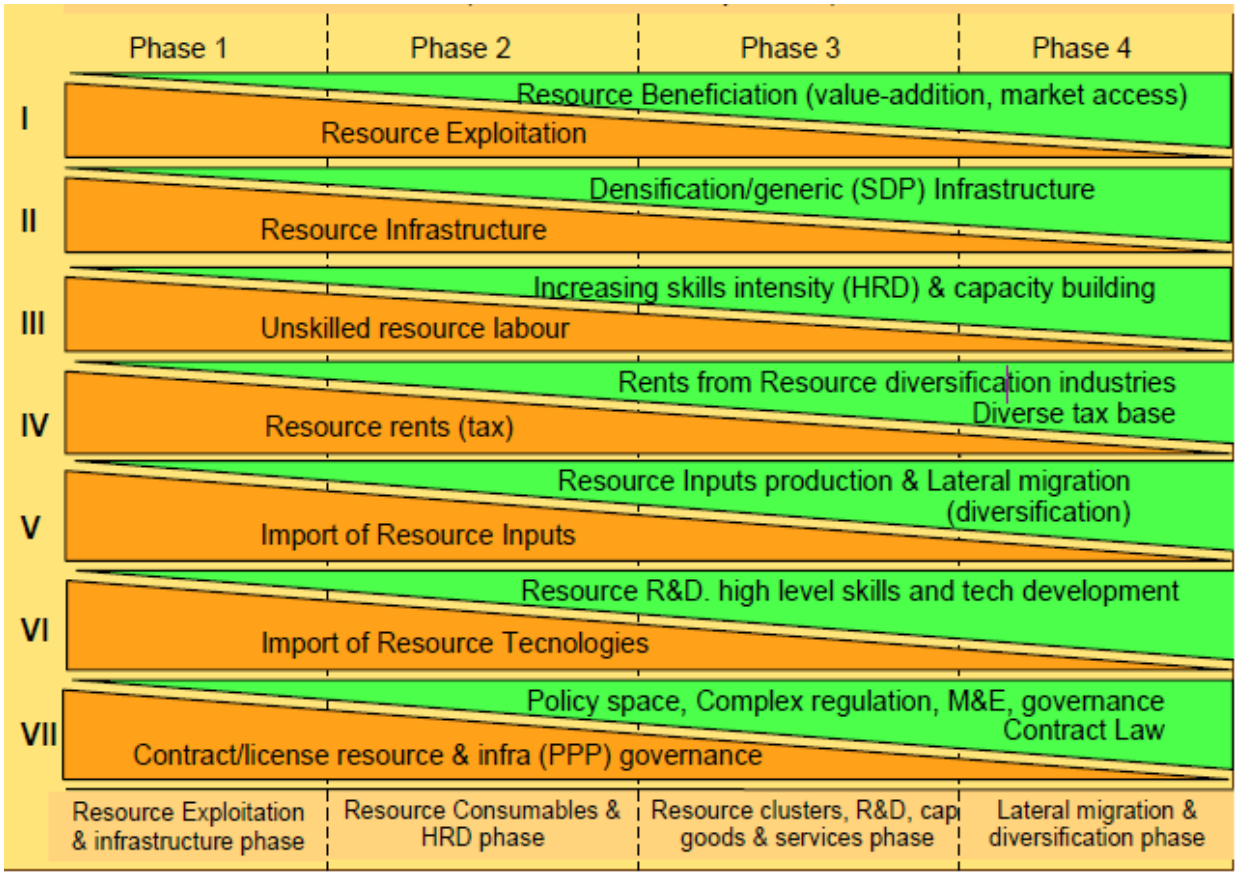


Figure 24: Resource-based industrialisation phases (Jourdan, 2014). (SDP-Spatial Development Programme, HRD - Human Resources Development, R&D-Research and Development, M&E- Monitoring and Evaluation)

3.4 Summary

There is generally no consensus on the resource curse topic and on the methodologies of its study. Several scholars have put forward both

theoretical and empirical evidence for the resource curse thesis. This evidence is not conclusive and has come under attack from those who view natural resources as a blessing rather than a curse.

However, the resource curse remains a concern in most developing resource-rich nations like Zimbabwe, as these nations experience slow or negative economic growth and development. Policy-makers in these countries are preoccupied with finding ways of avoiding the resource curse. Some of the answers may be found in understanding its transmission channels, from resource-based development theories and in learning lessons from studies of resource-rich nations that have avoided the resource curse.

The next chapter critically reviews the performance of the mineral sector in Zimbabwe and its contribution to economic growth.This is followed by an analysis of the causes of the resource curse in Zimbabwe.

4 THE MINING SECTOR AND RESOURCE CURSE IN ZIMBABWE

4.1 Introduction

Mineral resources have played a significant role in the Zimbabwean economy as far back as the 17th century well before the start of colonial rule in 1890. These have become even more important in present day Zimbabwe. This chapter will provide an overview of the mining industry in Zimbabwe and its contribution to economic growth from pre-colonial to colonial and post-colonial period. The chapter will also provide an analysis of the channels of the resource curse in Zimbabwe.

4.2 The Pre-colonial and Colonial Mining

By the 17th Century, the potential of Zimbabwe as a mineral rich-country especially for gold was already known, as documented from various sources including reports by prospectors, missionaries, and miners (Hollaway, 1997). Early mining using rudimentary methods was dominated by iron ore, gold and copper, which were traded for exotic goods with the Swahili Arab traders (Malinga, 2018). According to Jourdan (2014: 33), about 600 to 800 tonnes of gold were produced from about 4000 ancient workings prior to colonisation and "the gold trade was directly responsible for the rise of the Zimbabwe state".

After finding paleo-placer gold in 1886 in the large ancient Witwatersrand basin in South Africa, the white settlers had high hopes of finding even larger gold deposits in Zimbabwe to the north (Veasey, 1997). This led to the invasion of the country in 1890 by the British South African Company (BSAC) led by Cecil John Rhodes in anticipation for “a bonanza bigger than the Witwatersrand” (Hollaway, 1997:28).

During the colonial period (1890 to 1980), mineral policies were largely ad-hoc with all mineral rights vested in the state and mining companies were allowed to acquire mineral titles, which could be sold or worked by others under option or tribute agreements (Malinga, 2018). The mineral policies were summarised by Hollaway (1997) as follows:

- The major mining law (Mines and Minerals Act) was enacted in 1961 and continued to be used in the post-colonial era, although with several amendments;
- Pre-requisite for a mining title was the discovery of a deposit and maintenance of the title was through work or payment. These features still exist in the modern Zimbabwean mining policy and referred to as the "use it or lose it principle" meant to encourage discovery and exploitation of mineral resources;
- Only companies were allowed to mine from 1890-1903 with the BSAC receiving 50% shareholding, this was reduced to 30% in 1903 and individuals and syndicates were also permitted to acquire mining titles in the same year. The 30% shareholding was replaced by a 5% royalty in 1908;
- Exclusive Prospecting Orders (EPOs) were introduced in 1950, which gave the right to the title holder to explore over large areas for periods up to six years. A board (the Mining Affairs Board - MAB) constituting of dominantly government officials and representatives of mining and farming was created to allocate the EPOs. The MAB still exists in the present day administration and regulation of the mining industry; and
- Funding for mining was raised from stock markets in America and Europe.

By the end of the colonial period, the mining industry had matured, dominated by gold production, which peaked at 29 tonnes in 1916 with

significant production of iron ore, chrysotile asbestos, copper and chromite (Hollaway, 1997). The mining sector was instrumental in industrial development since the 1920s with iron ore, copper and ferrochrome being beneficiated locally and a number of manufacturing capabilities were developed including electrical mining equipment, ball mills, pumps, conveyors, explosives, mining chemicals and headgear (Jourdan et al., 2012 as cited in Fessehaie & Rustomjee, 2018).

4.3 Post-Colonial Mining Industry

4.3.1 Structure and administration of the mineral resources

The start of the post-colonial period (1980) was marked by state interventionist and state ownership policies as a way to redress the colonial imbalances (Malinga, 2018). According to Dansereau (2000:230), the government intervened through state development plans and in 1981, they rolled out the “Growth with Equity plan” to redress the “grossly inequitable pattern of income distribution and predominant foreign ownership of assets”. This led to the formation of state-owned mining houses like the Zimbabwe Mining Development Corporation (ZMDC) in 1983, which was mandated to save low grade copper mines that were threatened with closure. Minerals Marketing Corporation of Zimbabwe (MMCZ) was established in 1982 on the basis of over transfer pricing concerns and was in charge of marketing of all minerals produced in the country with the exception of gold, which is marketed through the Reserve Bank of Zimbabwe and Platinum Group Metals under Special Mining Leases (Veasey, 1997). The state is the major shareholder in the iron and steel industry, coal mining and diamond mining (Jourdan, 2014).

However, state control of the mining industry was only partial, the 1990s saw a policy reversal under ESAP in which free market policies were implemented and a reduction in state’s intervention in the economy

(Kwaramba, Mahonye & Mandishara, 2016). Up until 1995, the industry was dominated by multinational companies like Anglo American Corporation, Union Carbide, London Rhodesia (Lonrho), Rio Tinto Zimbabwe (RTZ) Plc and Turner Newall before they divested (Jourdan, 2014). By 2000, the industry was characterised by a large number of mostly unregistered artisanal and small-scale miners due to socio-economic problems (Malinga, 2018). In gold mining alone, an estimated number of 400,000 unregistered artisanal miners were noted (The Zimbabwe Miners Federation, 2014 as cited in Kwaramba, Mahonye & Mandishara, 2016).

Table 6 shows that there are several policy frameworks operational in the Zimbabwean minerals industry. There is “no coherence and complementarity among these instruments” (Kwaramba, Mahonye & Mandishara, 2016:54). An example is the conflicting goals of the Zimbabwe Investment Authority Act, which promotes foreign investment and the Indigenisation and Economic Empowerment Act, which advocates for local ownership of mineral resources (Kwaramba, Mahonye & Mandishara, 2016). The major mineral law, the Mines and Minerals Act of 1961 was inherited from the colonial era, although it has been amended several times over the years. According to the Mines and Minerals Act, all minerals are vested in the state, individuals and companies acquire mineral rights to participate in the sector. Table 7 shows the various mineral rights that can be acquired.

Table 6: Mineral laws and policies of Zimbabwe
(Adapted from Nzenzema, Zinyama & Nhema, 2015).

Frameworks	Components
Constitution	Constitution of Zimbabwe 2013
Mining Laws	Mines and Minerals Act of 1961 , The Natural Resources Amendment Act of 1975, The Mining (Health and Sanitation) Regulations of 1977, Mines and Minerals Amendment Bill of 2015, Environmental Management Act of 2002, Water Act of 1998, Finance Act of 2018, Zimbabwe Investment Authority Act of 2006, Gold Trading Act of 1940, Base Minerals Export Control Act of 1949, Precious Stones Trade Act of 1978
Policy Documents	Environmental Impact Assessment Policy 1997, Diamond Policy 2012, Zimbabwe's Draft Minerals Policy 2013
Institutions	Ministry of Mines and Mining Development, The Chamber of Mines of Zimbabwe, Zimbabwe Mining Development Corporation (ZMDC), Zimbabwe Investment Authority, Zimbabwe Geological Survey, Minerals Marketing Corporation of Zimbabwe (MMCZ), Environmental Management Agency (EMA), Reserve Bank of Zimbabwe (RBZ), Zimbabwe Revenue Authority (ZIMRA), Institute of Mining Research (IMR)

Table 7: Mineral licenses in Zimbabwe (Government of Zimbabwe, 2018a).

License	AREA	Minerals	APPLICANT REQUIREMENT	LENGTH OF TENURE
Ordinary / Special prospecting licence (IV)	• 10ha precious metal/stone • 25ha base metal	All	• Any person above the age of 18 years of age permanently resident in Zimbabwe • A company duly registered in Zimbabwe	2 years
Exclusive Prospecting Order (VI)	• 65 000ha • Any defined area (including Reserved)	All except Coal	• Any person • Corporate body	Initial period of 3 years Renewable for a maximum period of 3 years
Mining Lease (VIII)	Amalgamation of contiguous mining location	All	• Holder of registered mining location	Perpetual Annual renewal
Special Mining Lease	As Mining Lease	All	• Holder of registered mining location • Investment in Forex exceeding • Mine output intended mainly for export	Perpetual Annual renewal
Special Grant (XIX)	Any defined area	All	• Any person • Area to be situated in reserved ground	Perpetual Annual renewal
Special Grant under Part XX of Act (XX)	20 000ha for coal, 100 000ha for CBM and Natural Gas	Coal, Mineral Oils, Natural gas	• Any person • Area to be situated in reserved ground • Intention to mine Coal, Mineral Oils, • Full information on o Financial status o Technical expertise	Perpetual Annual renewal

Note: ha – hectares, CBM – Coal Bed Methane

The country's mineral development is managed and regulated by the Ministry of Mines and Mining development with the Mining Affairs Board (MAB), the Provincial Mining Directors (PMD) and specific departments for certain specialty areas working under the ministry, as shown in Figure 25. The private sector is represented by the Chamber of Mines of Zimbabwe. Table 8 shows the country's mining fiscal regime, which is comparable to its African peer countries like Botswana (Table 12) and Ghana (Table 16). According to the Ministry of Mines and Mining development (2020), the Income Tax Act (Chapter 23:06) of 2014 provides for deductible expenditure and losses as follows;

- Capital allowances

  Mining exploration and development expenditure incurred before commencement of production is deductible in full in the first year of production against income derived from the mining activities. Subsequent development expenditure is written off in the year expended.

- Assessed losses

  There is no restriction on carryover of tax losses; these can be carried forward for an indefinite period. These tax deductible expenditures are over and above the other deductible expenditure such as administration costs.

- Royalty rebate

  There is full rebate of royalty in respect of all minerals or mineral-bearing products used wholly within Zimbabwe.

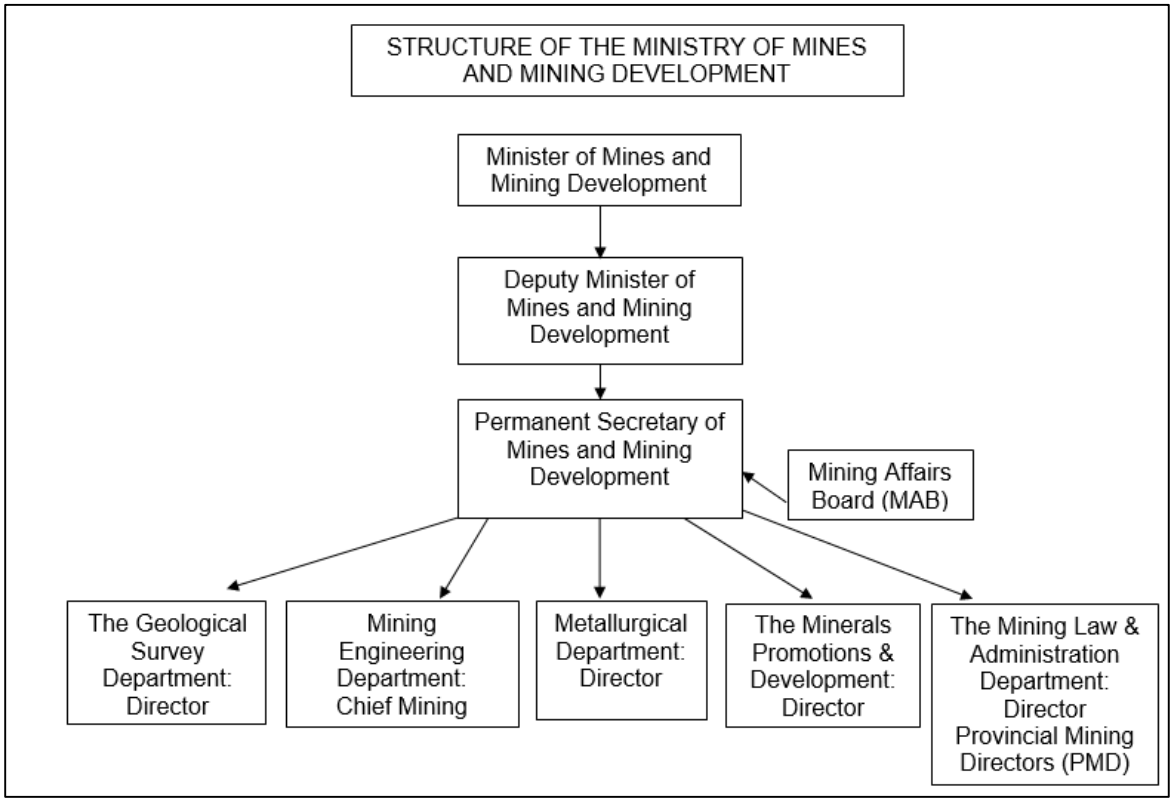


Figure 25: The Structure of the administration of mineral resources in Zimbabwe (Adapted from Government of Zimbabwe, 2018a).

Table 8: Zimbabwe's mining fiscal regime
(Ministry of Mines and Mining development, 2020 & Zimbabwe Revenue Authority, 2020).

Category	Rate	Comments
Corporate tax	15 - 25%	15% for Special Mining Lease Holders and 25% for other mining title holders
Additional profit tax (APT)	Based on the level of profitability	Levied on holders of Special Mining Leases over and above the normal income tax as compensation for the generous fiscal incentives granted exclusively to holders of a Special Mining Lease
Withholding tax	10 - 15%	15% for tax on fees for services of a technical, managerial, administrative or consultative nature paid to a non-resident. 15% for tax on remittances 10% -15% for dividends depending on whether the company paying out the dividend is listed on the Zimbabwe Stock Exchange or not
Royalty (as at 1 January 2020)	1 - 10%	Diamonds 10%, Other precious stones 10%, Gold-Small Scale Miners (< 0.5kgs) 2%, Gold other Miners (> 0.5kgs) (if price is below US$1,200 per ounce 3%, if price is above US$1,200 per ounce 5%), Platinum 5%, Other Precious Metals 4%, Base Metals 2%, Industrial Metals 2%, Coalbed Methane 2%, Coal 1%, Black granite 2%, Other cut and uncut dimensional stones 2%. Royalty is determined as a percentage of the gross fair market value of minerals produced and not quantity
State equity		No legal requirement for state equity participation, the state can participate in mining activities through ZMDC and joint ventures and in diamond mining through Zimbabwe Consolidated Diamond Company (ZCDC)

4.3.2 Economic Policies

Many economic policies that have been adopted in Zimbabwe since independence (1980) have not resulted in significant economic growth and development (Bonga, 2014). Table 9 shows a summary of these policies.

Table 9: A summary of economic policies adopted in Zimbabwe (Bonga, 2014 & Government of Zimbabwe, 2018c).

Policy	Period	Objectives	Results
Economic Structural Adjustment Programme (ESAP)	1991-1995	Transformation of Zimbabwe's controlled economy to a market-driven economy	Objectives not met
Zimbabwe Programme for Economic and Social Transformation (ZIMPREST)	1996-2000	Correct the mistakes of ESAP and create a stable macro-economic environment	Objectives not met
Millennium Economic Recovery Programme (MERP)	2001	Address the persistent economic decline through price and exchange rate stabilisation	Economic decline continued
The National, Economic Revival (NERP)	2003	Centered on land reform and redistribution programme and to provide drought assistance	No significant agricultural output
Short Term Emergency Recovery Programme (STERP) – Implemented under the Inclusive Government	February to December 2009	To stabilize the economy and lay the foundation for a mid to long term programme intended to turn Zimbabwe into a developmental State.	Modest increase in GDP (Figure 9)
Zimbabwe Medium Term Plan (MTP) - Implemented under the Inclusive Government	2011-2015	To consolidate and advance the gains achieved under the STERP	Abandoned after two years at the end of the Inclusive Government
Zimbabwe Agenda For Sustainable Socio-Economic Transformation (ZIMASSET)	2013-2018	To achieve sustainable development and social equity based on indigenisation, empowerment and employment creation	Economic decline
Transitional Stabilisation Programme (TSP)	2018-2020	To stabilise the macro-economy and the financial sector, transform to a private sector led economy and to address infrastructure gaps	Current

According to Hollaway (1997), the following describes mineral sector policy evolution in Zimbabwe since independence:

- State participation in mineral exploitation and supervision in marketing and sales of minerals, influenced by the socialist belief of the new leadership;
- Specific arrangements to regulate artisanal mining as it became an important sector to the economy;
- Ad hoc legal and financial arrangements of major mining companies; and
- The removal of mineral sector-specific tax concessions.

Public state entities like the Minerals Marketing Corporation of Zimbabwe (MMCZ) and the Zimbabwe Mining and Development Corporation (ZMDC) were created to spearhead resource-based development. Controlling shareholding was acquired by the government in Wankie Colliery and in the Zimbabwe Iron and Steel Company in 1983 (Hollaway, 1997). These policies inhibited investment in the mining sector.

The ZIMPREST programme provided incentives to encourage local beneficiation and a review of the existing tax and regulatory environments to attract large scale mining investments (Government of Zimbabwe, 1998). In the mining sector, the MERP programme intended to reduce input costs to the sector through elimination of duties and tariffs on major inputs. Measures to reduce leakages in the sector were put in place and a mining industry loan fund was established (Government of Zimbabwe, 2001). Unfortunately, these policies under ZIMPREST and MERP failed to stimulate development in the mineral sector.

Most economic policies (ZIMPREST, STERP, MTP, ZIMASSET) emphasised on beneficiation and value addition for all major minerals. This was in line with the Southern African Development Community (SADC) and Africa Mining Vision’s policy thrust of industrialisation through beneficiation.

According to Eunomix (2015: 19), the government defined beneficiation as “refining of minerals into metals, and therefore beneficiation is an activity to be conducted by miners” and “therefore different from the one prevalent in South Africa, where government sees beneficiation as the inclusion of mining output into manufacturing products and where beneficiation refers to manufacturing”. If Zimbabwe is going to diversify and industrialise, there is need to develop competencies in the manufacturing sector as well, like what South Africa is doing.

The beneficiation policy has been implemented through regulation and legislation, for example, the ban in 2011 of export of chrome ore and imposition of 15% tax on export of unbeneficiated diamonds in 2014 and unbeneficiated platinum in 2015 (Eunomix, 2015). However, these policies have since been reversed as they have failed to produce the intended results.

Several beneficiation facilities including the Empress nickel refinery, Bindura Nickel Corporation refinery, Fidelity printers and refinery for gold and Zimbabwe Platinum Mines (Zimplats) smelters for Platinum group elements (PGMs) have been built over the years. Most of these are now in a dilapidated state due to lack of working capital and recapitalisation (Chamber of Mines of Zimbabwe, 2014). Mineral beneficiation has remained very low with the country exporting largely raw materials or mineral concentrates. The beneficiation policy has generally failed due to an unattractive investment climate, inadequate infrastructure, energy constraints, deficiencies in the knowledge economy and lack of good governance (Eunomix, 2015).

The objectives of the MTP programme on the mineral sector were:

- To finalise the Zimbabwe mineral policy by end of 2011;
- To finalise the amendment of the Mines and Minerals Act by end of 2011, which was proposed in 2007;

- To adopt and implement the Extractive Industries Transparency Initiative (EITI) by end of 2011; and
- To establish a Sovereign Wealth Fund to manage natural resource rents (Government of Zimbabwe, 2011).

The Mines and Minerals amendment bill is intended to replace the old Mines and Minerals Act of 1961. The old Act has no provisions for sustainable development, lacks transparency and accountability and only acknowledges the role of the state and the large mining companies in the mineral sector, leaving out other stakeholders (Artisanal and Small Scale Miners, Civil Society Organisations) (Zimbabwe Environmental Law Association, 2014). The new envisaged Mines and Minerals Act seeks to address all these issues and spearhead resource based re-industrialisation in Zimbabwe. However, the draft Minerals policy of Zimbabwe, which is going to give direction to the new Act has not been finalised by the time of writing this report (December 2020), eight years later.

In 2014, the government established the Sovereign Wealth Fund to capture and manage natural resource rents for economic development and for the benefit of future generations. The fund was going to be financed from 25% of mining royalties on all minerals (Zimbabwe Environmental Law Association, 2014). Many scholars argued on the rationale of establishing such a Fund in Zimbabwe given its huge external debt and the collapse of education and other social services infrastructure. The fund ultimately collapsed as Zimbabwe did not have surplus money for such a Fund.

By the end of 2018, the objective of adoption and implementation of the Extractive Industries Transparency Initiative (EITI) had not been met. The government is still making efforts to achieve this as indicated in the 2019 budget presentation, “In order to move along with international best practices on achieving transparency in management of natural resources, Government would want to be a member of the Extractive Industries

Transparency Initiative (EITI) as soon as possible" (Government of Zimbabwe, 2018b: 62).

4.3.3 Mineral production and contribution to the economy

During the post-colonial period, there has been significant mineral output as shown in Figures 26 to 31. The main minerals being gold, platinum, nickel, chromite, coal, diamonds, asbestos, iron ore, copper, graphite and lithium. The most important mineral in terms of revenue generation is gold. In the 1990s, gold production peaked at 27 tonnes in 1999, which was followed by a drastic decline in production reaching a low of 3.6 tonnes in 2008 (Figure 26). However, since 2009, gold production has been on an upward trend reaching 35 tonnes in 2018, thereby surpassing the colonial peak production of 29 tonnes. Zimbabwe was among the largest exporters of ferrochromium, lithium minerals and asbestos by 1996 (Matsika, 2010 as cited in Malinga, 2018). Significant diamond production started in 2008 after the discovery of the Marange diamond field in eastern Zimbabwe (Malinga, 2018).

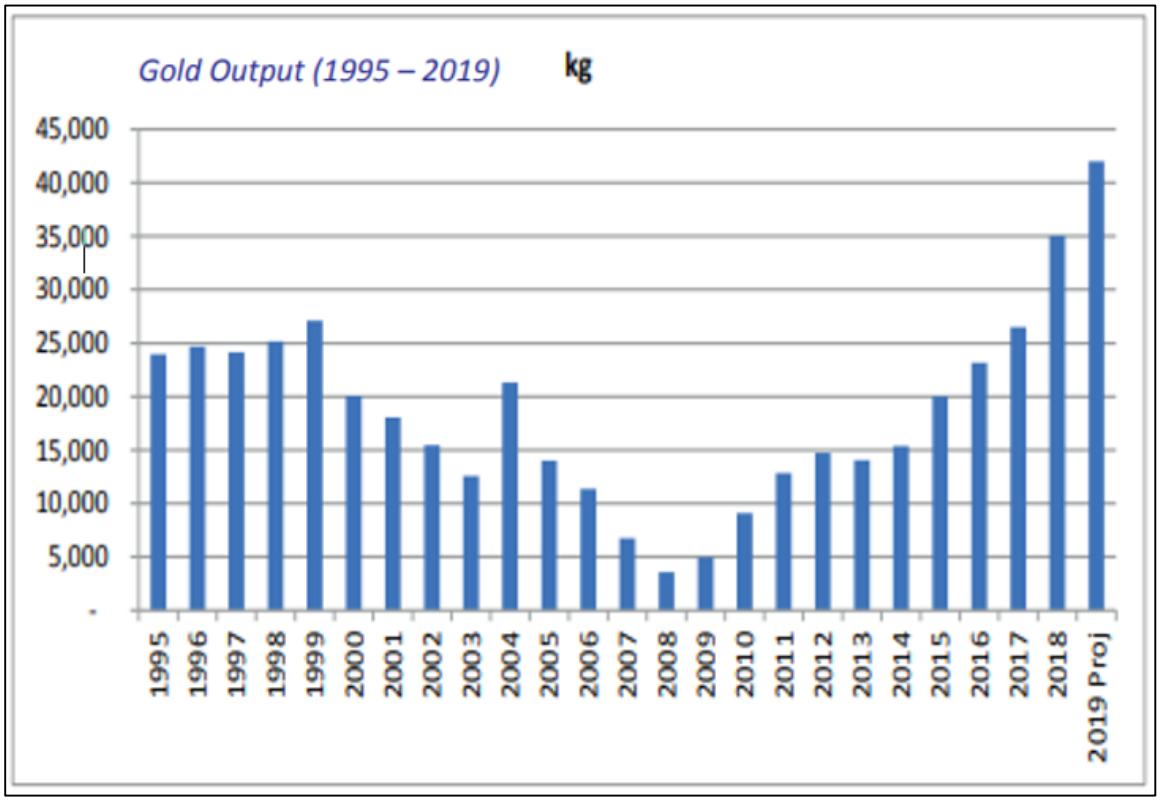


Figure 26: Gold production in Zimbabwe in kilograms (kg) (1995-2019) (Chamber of Mines of Zimbabwe, 2018).

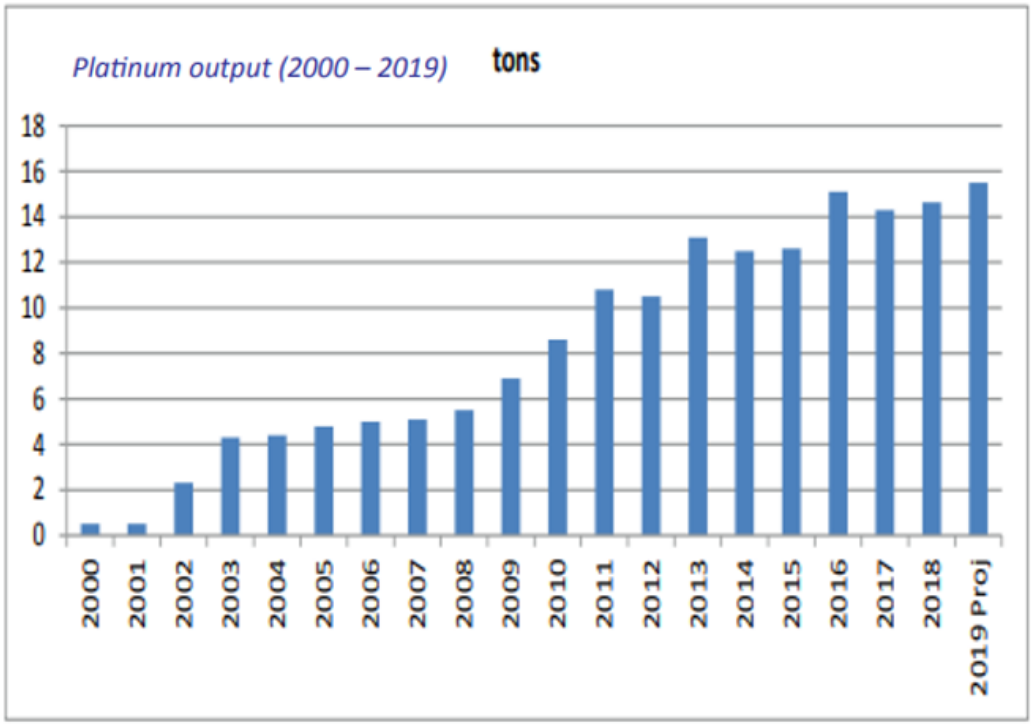


Figure 27: Platinum production in Zimbabwe (tonnes-tons) (2000-2019) (Chamber of Mines of Zimbabwe, 2018).

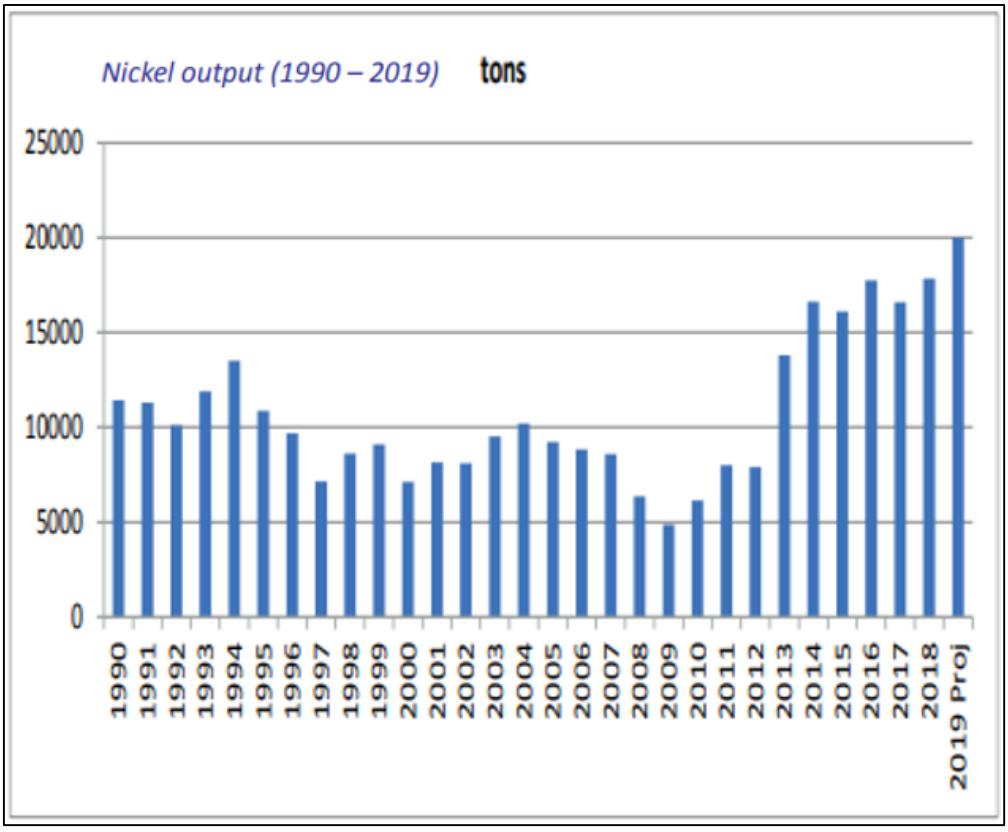


Figure 28: Nickel production in Zimbabwe (1990-2019) (Chamber of Mines of Zimbabwe, 2018).

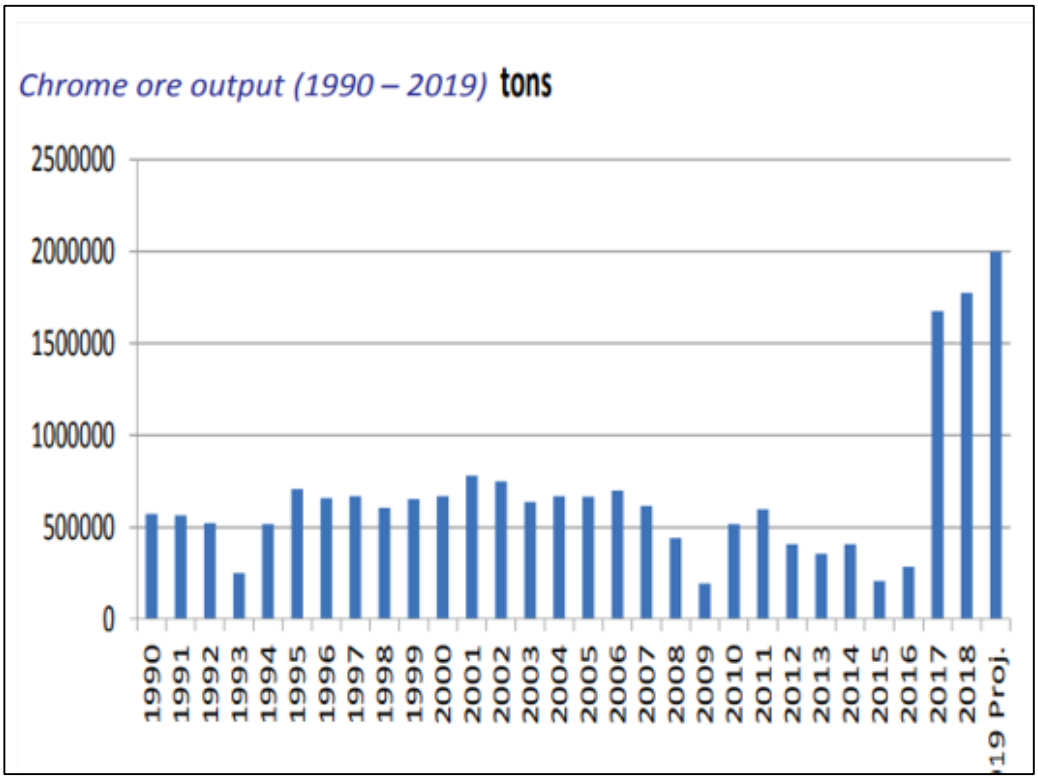


Figure 29: Chrome production in Zimbabwe (1990-2019) (Chamber of Mines of Zimbabwe, 2018).

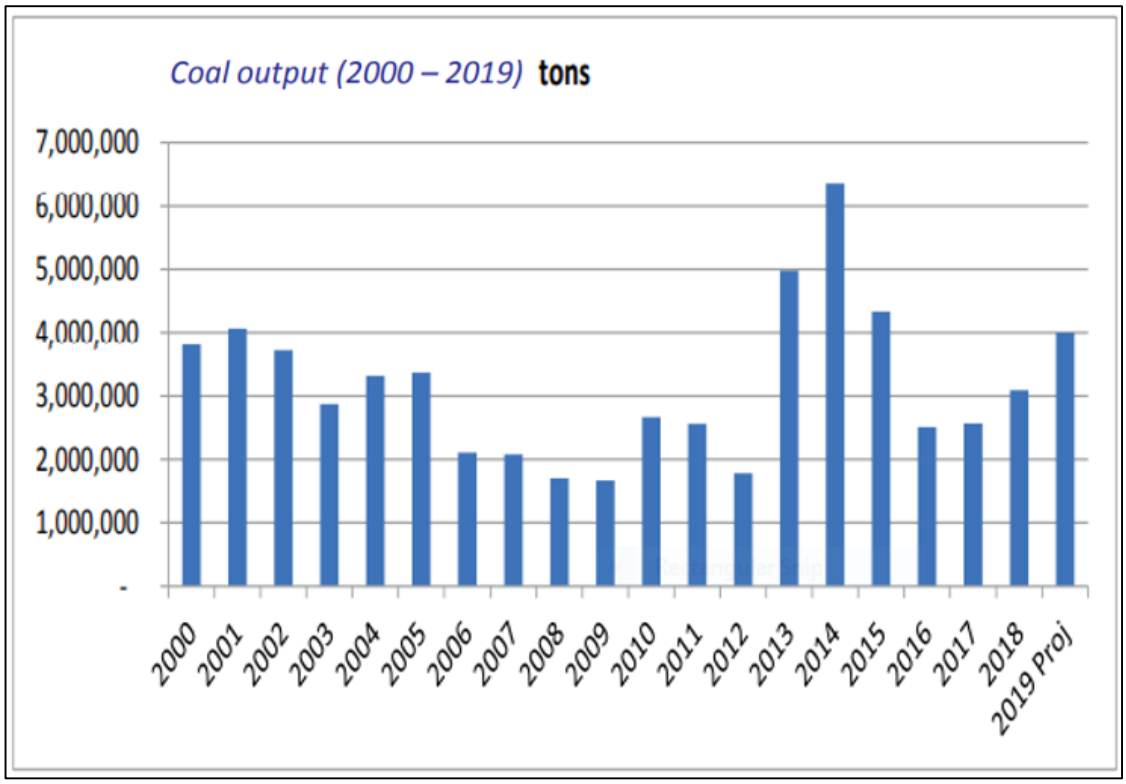


Figure 30: Coal production in Zimbabwe (2000-2019) (Chamber of Mines of Zimbabwe, 2018).

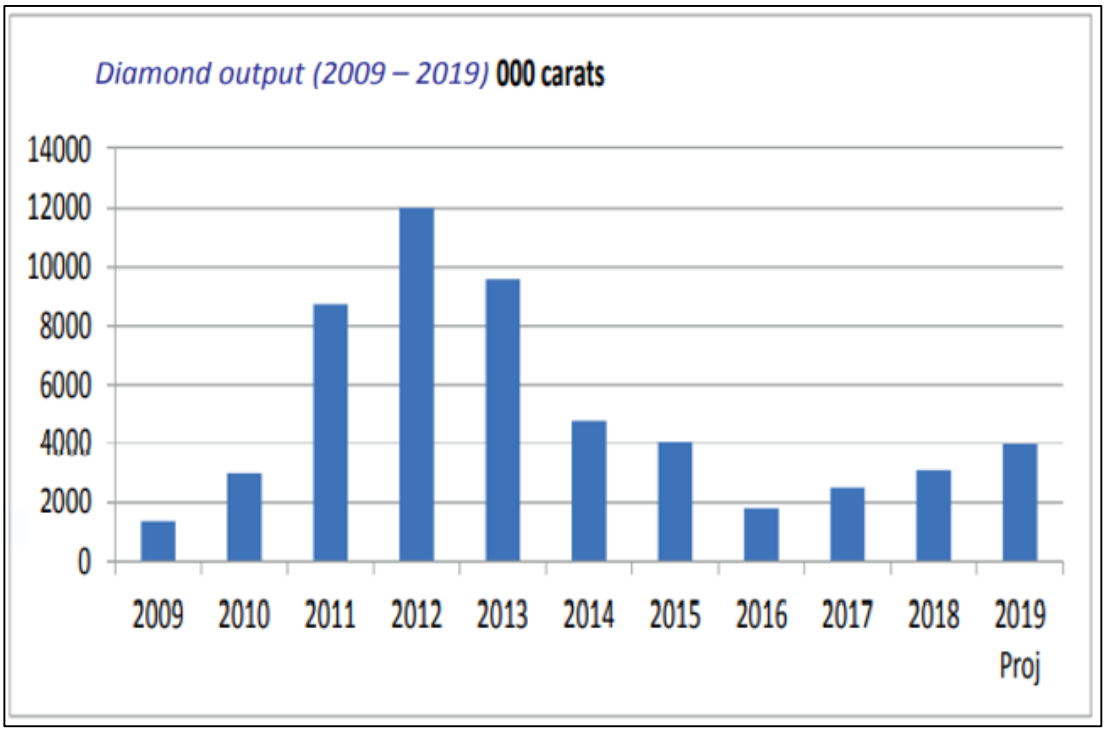


Figure 31: Diamond production in Zimbabwe (2009-2019) (Chamber of Mines of Zimbabwe, 2018).

Figure 32 shows that gold and platinum are the major contributors of mineral revenue and 95% of mineral revenue is only accounted to six minerals (gold, platinum, nickel, diamond, coal, chrome) (Mamina, Maganga & Dzwiti, 2020). Total mineral revenue has generally been on an upward trend for the past nine years (2009-2018) with a slight dip from 2014 to 2016 and reaching about US$2.8 billion in 2018 as shown in Figure 33. Over the years (1980-2012), mining exports accounted for between 40 to 50% of total exports (Figure 34). Contribution to GDP averaged about 4% in the 1990s and rose to an average of about 12% in the 2000s (Figure 35). These statistics indicate that mining played a very significant role in the Zimbabwean economy and that the economy depended on mineral resource exports.

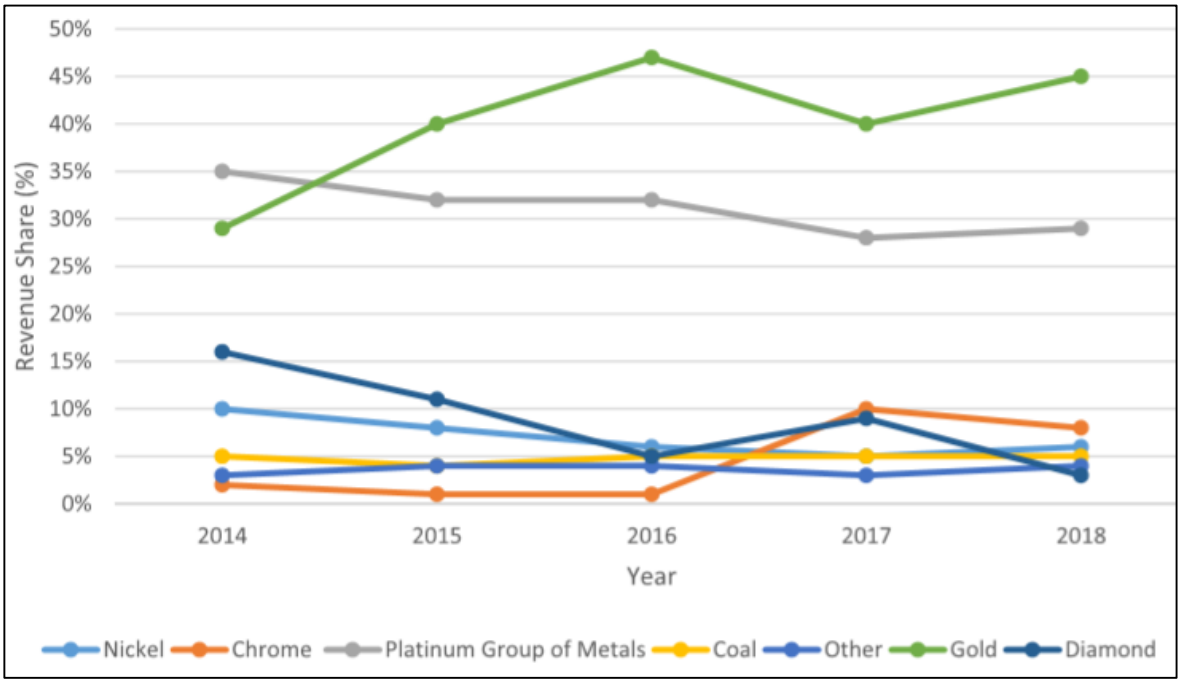


Figure 32: Mineral revenue share (Mamina, Maganga & Dzwiti, 2020).

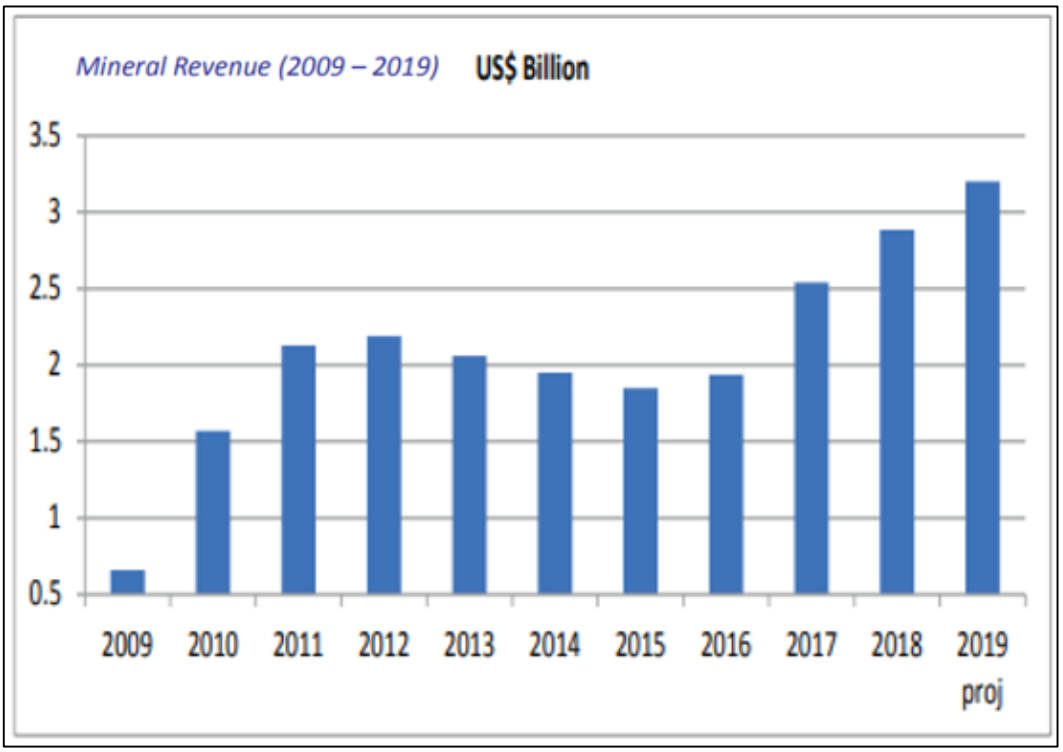


Figure 33: Total Mineral revenues per year (2009-2019) (Chamber of Mines of Zimbabwe, 2018).

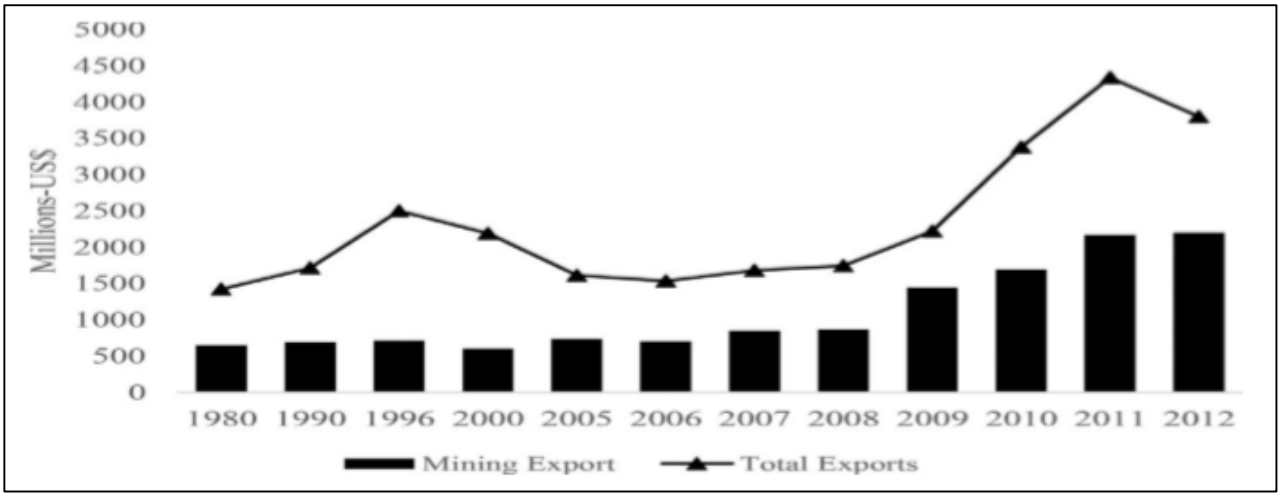


Figure 34: Mineral exports and total exports (Kwaramba, Mahonye & Mandishara, 2016).

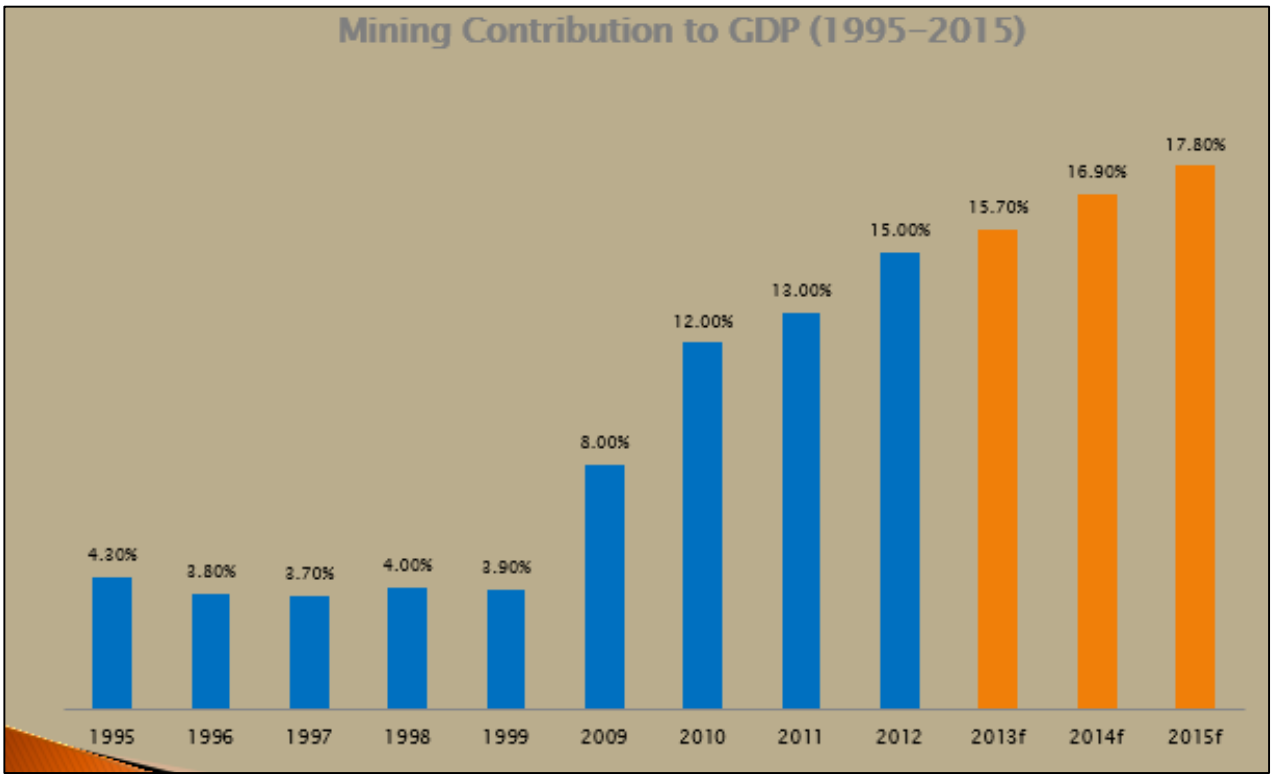


Figure 35: Mining Contribution to GDP (Chamber of Mines of Zimbabwe, 2013).

In the first two years of independence, Zimbabwe registered splendid GDP growth (Figure 36) and overall, the growth rate was positive in the first decade (1980-1989) with an average growth rate of 5%, which was above the global average of 3.1% (Parsons, 2002). This was under the Growth with Equity development plan and Zimbabwe had inherited one of the strongest economies from the colonial era (Kwaramba, Mahonye & Mandishara, 2016). During the second decade (1990-1998) of independence under ESAP (1991-1995) and ZIMPREST (1996-2000) development plans, the growth rate declined though it was still overall positive, averaging 3% from 1990 to 1996 (Abel, Mhaka & Roux, 2019). Drastic economic decline started in 1997 when the Zimbabwe dollar lost 71.5% of its value to the United States dollar on the 14th of November, known as the “Black Friday” (Marawanyika, 2007 as cited in Sibanda and Makwata, 2017).

Cumulative negative GDP growth was witnessed during the third decade (1999-2008) (Figure 66), a period associated with:

- Policy reversal;
- The land reform program that resulted in revoking of commercial farmland property titles in 2000;
- The Look East policy of 2003 that involved strengthening of ties with the Asian countries like China and adopting their model of economic growth;
- The indigenisation policy of 2007 that required 51% to be ceded to locals; and
- International isolation and capital flight (Kwaramba, Mahonye & Mandishara, 2016).

According to Abel, Mhaka and Roux (2019), the period was characterised by hyperinflation, high poverty and unemployment rates, food insecurity, deteriorating social service delivery and infrastructure and low capacity utilisation in all sectors of the economy. Most of the mining and manufacturing capabilities that were developed during the colonial period and the 1980s and 1990s were eroded during this economic crisis (Fessehaie & Rustomjee, 2018).

Figure 36 shows a short-period of high GDP growth (>5%) from 2009 to 2012 under the STERP (2009) and MTP (2010-2012) development plans. This was the period of the Government of National Unity (GNU) between the two main political parties in the country, namely the Movement for Democratic Change (MDC) and Zimbabwe African National Union– Patriotic Front (ZANU-PF). The introduction of a multi-currency system stabilised the macro economy with a significant reduction in inflation (230 million percent in July 2008 to -7% by December 2009) (Sibanda & Makwata, 2017). This high growth was short-lived and ended with the

disbandment of the GNU in 2013 after ZANU PF won the elections (Sibanda & Makwata, 2017). From 2013 under the ZIMASSET (2013-2018) development plan, GDP growth declined drastically reaching negative values in 2016 (Figure 36) and 2016 was also associated with the introduction of a surrogate currency called bond notes and an importation ban on several products (Sibanda & Makwata, 2017). Economic decline continued under the TSP (2018-2020) development plan.

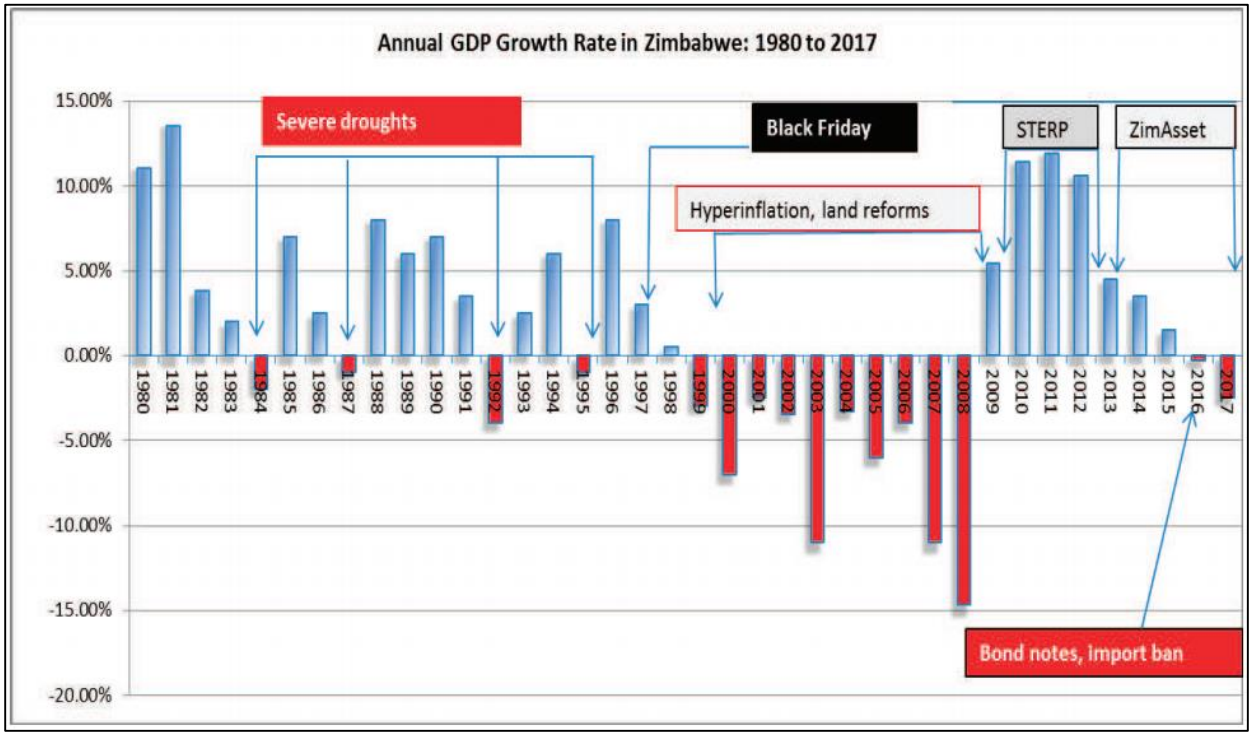


Figure 36: Zimbabwe's GDP growth rate (1980-2017) (Zimstats, Ministry of Finance as cited in Sibanda & Makwata, 2017).

4.4 Resource Curse in Zimbabwe

The fact that Zimbabwe is a resource-abundant and resource-dependent nation has been illustrated in sections 1.1.3 and 4.3.3. Symptoms of a resource-cursed nation has been described in detail in sections 1.1.1 and 3.2.3. The experiences of Zimbabwe will be measured against these symptoms indicative of resource curse.

As discussed in section 4.3.3, Zimbabwe's GDP growth showed a generally downward trend in the first two decades (1980-1998) of independence, although it was positive. From 1999 onwards, GDP growth was generally negative with a short-lived period of positive growth. In 2018, Zimbabwe ranked at the bottom ten (10^{th} out of 178) nations in the Fragile states index (published by the Fund for Peace) that assess a state's vulnerability to collapse (Krawczyk, 2019). Thus, Zimbabwe's experience conforms to the basic definition of the resource curse by Sachs and Warner in which they used a cross section of international data (1970-1989), to show a negative relationship between economic growth and resource abundance as detailed in section 3.2.2.

Details of the numerous national and mineral sector economic policies implemented in Zimbabwe since independence were described in section 4.3.2. There has been policy inconsistency throughout the years, the 1980s were characterised by state interventionist policies, the 1990s saw policy change towards market-led and in the 2000s, there was a policy reversal to a command economy. These policies failed to stimulate economic growth and development and this is consistent with the literature in which failures of government policies is one of the channels of the resource curse. However, contrary to the resource curse literature that natural resources crowd out human capital, at independence, Zimbabwe adopted an education-for-all policy for primary, secondary and tertiary education, "by the early 1990s, Zimbabwe had one of the best education systems in Africa and had already attained most of the Education for All/Education Millennium Development Goals (MDGs) when they were set in the year 2000" (Abel, Mhaka & Roux, 2019:4).

The continued and increasing dependence of the Zimbabwean economy on mineral exports as shown in Figure 34, is consistent with Innis's "Staple trap" model. Innis (as cited in Wellstead, 2007), noted that resource-rich nations may fail to develop linkages with other sectors of the economy and

fall into perpetual dependence on natural resources. The Staple trap model has been used to explain the resource curse.

There are high levels of poverty in Zimbabwe with a very high unemployment rate of 95%, with 60% of the population lacking electricity, 23.1% lacking access to drinking water, 63.2% with no adequate sanitation facilities, and a high infant mortality rate of 33 deaths per 1,000 live births (United Nations Development Programme - UNDP, 2018, as cited in Krawczyk, 2019). Table 10 shows that there is not much improvement in human development in Zimbabwe since 1980. These economic indicators show that the majority of the Zimbabwean population have not benefited from the extraction of natural resources.

Table 10: Zimbabwe's Human Development Index (HDI) trends (1980-2012) (Bonga, 2014).

Year	1980	1990	2000	2005	2007	2010	2011	2012
HDI	0.367	0.427	0.376	0.352	0.355	0.374	0.387	0.397

Resource curse literature suggests that high levels of corruption and rent-seeking hinder economic growth and development in resource-rich nations. Figures 33 and 34 show that Zimbabwe gets a large portion of its revenues from mineral resources, hence, can be classified as a rentier state. Table 11 shows that Zimbabwe consistently ranks low on the Corruption Perceptions Index (CPI) (published by Transparency International) with a 2017 ranking of 157 out of 180 nations (22/100 score, with a score of 100 meaning no corruption. This is despite a number of internal legal frameworks that have been crafted to control corruption. Zimbabwe is a signatory to the Southern African Development Community (SADC) Protocol, the African Union Convention and the United Nations Convention on combating Corruption (Chêne, 2015 as cited in Krawczyk, 2019).

Table 11: Zimbabwe's Corruption Perceptions Index (CPI) ranking out of 180 nations (Krawczyk, 2019).

Zimbabwe in CPI 2006–2017	
Year CPI	Rank
2006	130
2007	150
2008	166
2009	146
2010	134
2011	154
2012	163
2013	157
2014	156
2015	150
2016	154
2017	157

There is lack of transparency and accountability in the collection of mineral rents in Zimbabwe. Makoshori (2015) (as cited in Malinga, 2018) argued that "the government has failed to collect revenue meant to fill up its coffers due to dodgy and shady dealings by several individuals and mining companies to avoid paying taxes. This has resulted in the government losing as much as US$1 billion in potential revenue". Mahonye and Mandishara (2015) added that the minerals sector is also affected by rent seeking and rampant smuggling of minerals across the border.

The current mining law (Mines and Minerals Act of 1961) does not have provisions on transparency and accountability although these provisions have been included in a number of new policies (Draft Mines and Minerals Amendment Bill, Diamond Policy, Zimbabwe's Draft Minerals Policy) and

these policies are not yet backed by laws (Murombo, 2016). Other international and Civil Society organisation (CSO) initiatives to promote transparency and accountability in the mineral sector include the Kimberly Process Certification Scheme (KPCS), the Extractive Industries Transparency Initiative (EITI), the Global Reporting Initiative and the Publish What You Pay (PWYP) (Murombo, 2016). But all these are still relatively new to Zimbabwe and have not been fully embraced or complied with, the exception is the KPCS. As discussed in detail in section 4.3.2, the Sovereign Wealth Fund established in 2014 collapsed leaving the country with no emergency fund and no savings for the future generation. All these are symptoms of a resource-cursed nation.

The resource curse literature showed that the prevalence of corruption, poor policy choices, rent-seeking behavior, lack of transparency and accountability and lack of protection for property rights as is the case with Zimbabwe indicate the existence of weak institutions. According to Bucuane and Mulder (2007:23), “countries with weak institutions that start to explore their natural resources suffer from a double resource curse: weak institutions that impede economic development are further weakened by natural resource exploration as a result of which economic development is even more hampered”.

4.5 Summary

The experiences of Zimbabwe show many of the symptoms of a resource-cursed nation that include:

- Relatively slow and negative GDP growth rates;
- Failure of government policies;
- Existence of a rentier state and is caught in a staples trap;

- High levels of poverty, unemployment and deteriorating infrastructure and social services;
- High levels of corruption and lack of transparency and accountability in mineral revenue collection; and
- The existence of weak institutions.

From this, it can be concluded that Zimbabwe is a resource-cursed nation and it is imperative to find ways to overcome the curse. This is what motivated this study. Zimbabwe can learn from the experiences of other resource-rich nations that have managed to escape the resource curse. The next chapter describes the methodology of the research.

5 RESEARCH METHODOLOGY

5.1 Methodology

Overall, the research will use both qualitative and quantitative methods. Qualitative research relies on descriptive data and the case study research methodology will be used. The study will also use quantitative analysis of published official data from government departments and other institutions.

A qualitative case study research methodology is defined as a “qualitative approach in which the investigator explores a real-life, contemporary bounded system (a case) or multiple bound systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information, and reports a case description and case themes” (Kristine & Evans, 2019). In this study, a descriptive analysis of the international experience of 16 resource-based nations who have either succumbed or avoided the resource curse will be conducted in an attempt to meet the research objectives. The descriptive method, although it is subjective, it was chosen as it addresses the “how and why” questions of the research.

Case studies from a total number of 12 resource-rich developing countries from Africa (Botswana, Ghana, Nigeria), South America (Chile, Brazil, Venezuela), Middle East (Saudi Arabia, Qatar, Yemen) and Asia (China, Malaysia, Indonesia) and four developed countries (Australia, Norway, Canada, United States of America) were identified for the study. Regional groupings will be used as different regions will have different experiences due to different cultural, economic, social and political factors.

Each case study will involve a review of the country’s mineral resource abundance, economic growth experience and how mineral resources have been managed. Lessons will be drawn from such country experiences and policy reccomendations will be proposed for Zimbabwe to overcome the resource curse.

5.2 Data Sources

The research will mainly rely on secondary data sources (from scholarly journals, articles, books) as it provides a large pool of peer-reviewed dataset from which to draw global experiences. Also secondary data was used as it allows the study to cover a long period of time from which new insights can be generated. The information can be found in the University of the Witwatersrand libraries, online journals, internet, reports from organisations and governments and presented documents and papers. Limitations of secondary data are that, the researcher has no control over data quality and the data may be out of date as it was collected in the past for other reasons. However the peer-review process enable datasets to be evaluated and certified for quality.

The next chapter presents an analysis of case studies of global experiences of “what to do” and “what not to do” to escape the resource curse.

6 GLOBAL EXPERIENCES OF AVOIDING THE RESOURCE CURSE

6.1 Introduction

Several studies have been carried out on resource-rich nations that have managed to tame the resource curse and successfully implemented resource-based industrialisation strategies. Other studies have focused on resource-rich nations that performed badly in managing natural resources. This study will identify case studies of global experiences of “what to do” and “what not to do” to escape the resource curse.

6.2 Developing Countries - Africa

6.2.1 Botswana

Resource abundance and economic growth

Botswana holds about 25% of the world diamond reserves (Kaznacheev, 2013). According to Statistics Botswana (as cited in World Bank Group, 2016) 89.9% of export revenue comes from diamond sales and the mineral sector accounts for 24.5% of GDP. Figure 37 shows that Botswana’s real GDP per capita has been rising steeply since the start of diamond production in 1971 and it surpassed the world average from the late 1980s. The GDP has been growing at a rate of about 7% per annum and Botswana has attained an upper middle-income status (World Bank Group, 2016). This indicates that Botswana has managed to utilise its diamond resources for economic growth. However, Botswana has failed to diversify its economy and still has some political, economic (unemployment) and social (poverty, HIV/AIDS) challenges (Sebudubudu & Mooketsane, 2016).

According to Limi (2007), Botswana’s economic growth has been driven by good leadership, good governance, transparent political process, strong

fiscal system and less corruption in the public sector. Botswana's good institutions emanated from the historical Tswana tribes, where a culture of accountability, public participation and consultation was embedded and this continued after independence with a multiparty democratic system of governance (Martin, 2008). Botswana adopted the orthodox theory of market efficiency for economic growth and development, hence, it embraced an open trade policy, property rights and restricted the development of state-owned enterprises (Stevens, 2006). This differed from the import substitution and state interventionist policies adopted by most developing resource-rich nations in Africa and Latin America (Auty, 2009).

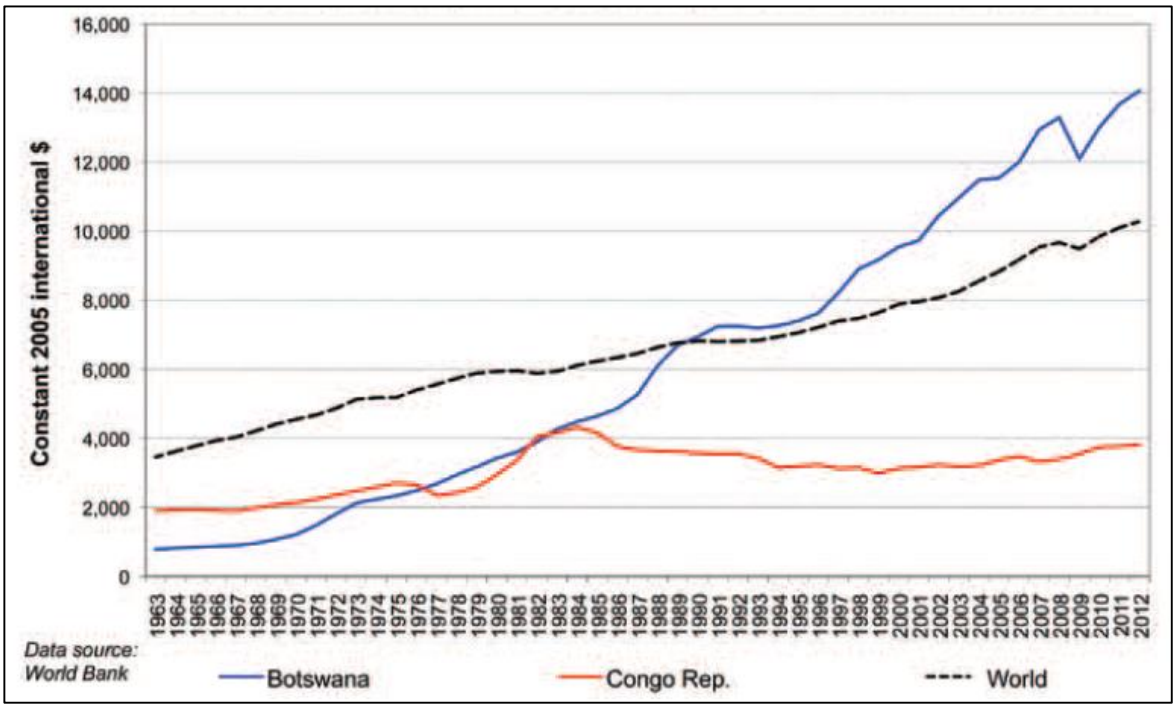


Figure 37: Real GDP per capita for Botswana compared to the World average from 1963 to 2012 (World Bank as cited in Kaznacheev, 2013).

Management of mineral resources

The regulatory framework governing mineral development in Botswana is the Mines and Minerals Act of 1999, managed by the Department of Mines, which falls under the Ministry of Minerals, Energy and Water Resources. According to the Act, mineral ownership is vested in the state. Mining

licences are allocated for a period of 25 years and renewable for a further period not exceeding 25 years (Government of Botswana, 1999). Table 12 shows a summary of Botswana's investment environment, which is generally market friendly and the mineral policy.

Government shareholding in diamond operations is negotiated, whilst in other mining projects, the government is entitled to a 15% paid-up shareholding in projects of its choice, contributes to the working capital and the management of the company is left to the private partner (Matshediso, 2005). Botswana's largest diamond company, Debswana is a 50-50% joint venture between the Government of the Republic of Botswana (GRB) and De Beers Consolidated Mines. This long-term partnership between the private sector and the state was important in the management of mineral resources as it curtailed rent-seeking behaviour from politicians (Meijia & Castel, 2012). The beneficiation of Botswana's diamonds was relocated from London to Gaborone in 2013 "to facilitate citizen involvement and skills transference, and diversification within the minerals sector" (Sebudubudu & Mooketsane, 2016: 91).

Table 12: Botswana's investment environment and mineral policy (Matshediso, 2005:204 & Country Watch, 2019).

Category	Rate	Comments
Investment Environment		
Political risk	Low and insignificant	Member of the Multilateral Investment Guarantee Agency. Both the Political and Security Risk in the country are rated as low and insignificant respectively. Scored 7 on the Political Risk index on scale of 0 -10 with a score of 0 marking the highest political risk and score of 10 the lowest (Country Watch, 2019)
Political stability	High	Botswana offers a democratic and stable political framework. Scored 8.5 on Political Stability index on a scale of 1-10 with 0 marking the lowest level of political stability and 10 marking the highest level of political stability (Country Watch, 2019)
Corruption	Low	Low corruption levels. Scored 5.6 on the Corruption Perceptions Index with 10 representing the highest level of transparency (Country Watch, 2019)
Political Rights (PR) and Civil Liberties (CL)	Free	Scored 3 on PR and 2 on CL on a scale of 1-7 with 1 representing the most free countries and 7 the least free (Country Watch, 2019)
Economic Performance	Moderate to high	Economic performance Index is as follows; Bank stability risk - 68, Monetary/ Currency stability - 58, Government Finances - 76. Scores are assessed from 0 to 100 with 0 representing the lowest and 100 the highest (Country Watch, 2019)
Foreign Investment	High	Scored 8 on the Foreign Investment Index on a scale of 0-10 with 0 marking the lowest level of foreign investment viability and 10 representing the highest (Country Watch, 2019)
Business Competitiveness	Medium	Ranked 76th out of 139 countries on the 2010 Global Competitiveness Index (GCI) which considers the macroeconomic environment, financial market development, institutions, technological readiness and innovation, infrastructure, labour and goods market efficiency, market size, health and primary education and higher education and training (Country Watch, 2019)
Human Development	Medium	Ranked 98th out of 169 countries on the Human Development Index (HDI) (Country Watch, 2019)
Mining policy		The key objective is to maximize the mineral sectors benefit to the country
Fiscal regime		
Corporate tax	25–35%	There is a two-tier tax system for company tax. Companies pay at the rate of 35% of their taxable income but this is broken down as company tax 25% of taxable income; additional company tax 10% of taxable income, linked to withholding tax; non-resident company tax 35% of taxable income
Royalty	3–10%	Royalty is payable on building and industrial minerals - 3%; coal - 5%; precious stones - 10%; semi-precious stones - 5%; precious metals - 5%; and 3% for other minerals. Royalty is determined as a percentage of the gross market value
State equity	15–50%	The level of equity participation is a function of the specific nature of a project
Infrastructure		The country has good infrastructure including all weather roads, railway and telecommunication system

Revenues from the mining industry include taxes on profits, royalties, dividends, and withholding taxes. Mineral revenues have been largely used to accumulate other assets (financial, human, physical) instead of recurrent expenditure as "the revenues derived from the exploitation of non-renewable resources need to be reinvested in other assets that will generate future income when the non-renewable resource is exhausted" (Jefferis, 2016:14). Table 13 shows a summary of Botswana's total revenues and spending for the period 1983/84 to 2014/15, at 2012 prices. During this period, mineral revenues were invested in health, education, other development spending and savings (Jefferis, 2016).

Table 13: A summary of Botswana's total revenues and spending for the period 1983/84 to 2014/15, at real 2012 prices (*Jefferis, 2016:16).*

Category	**Pula (billion)**
Mineral revenues	409.8
Total investment (physical and human capital)	476.5
of which: Education spending	186.4
Health spending	66.6
Other development (investment) spending	223.6
Net financial savings (March 2015, at 2012 prices)	38.6
Recurrent revenues, excluding grants and sale of property	474.2
Recurrent spending, excluding health and education	382.6
Recurrent budget balance	91.2

Botswana's surplus diamond revenues are deposited into the Botswana foreign reserve fund called the Pula Fund. The Pula Fund, which is managed by the Bank of Botswana (BoB) was re-established in 1996 under the Bank of Botswana Act (1996). Figure 38 shows that mineral revenues in Botswana are split into Liquid Assets (cover day to day transactions) and the Pula Fund (long-term investments overseas) (Kojo, 2010). The Pula fund serves as both a stabilisation fund and a savings fund. Interest payments from the Government Investment Account fund are used to

cushion against commodity downturns and the BoB portion acts as a savings fund for future generations (Meijia & Castel, 2012).

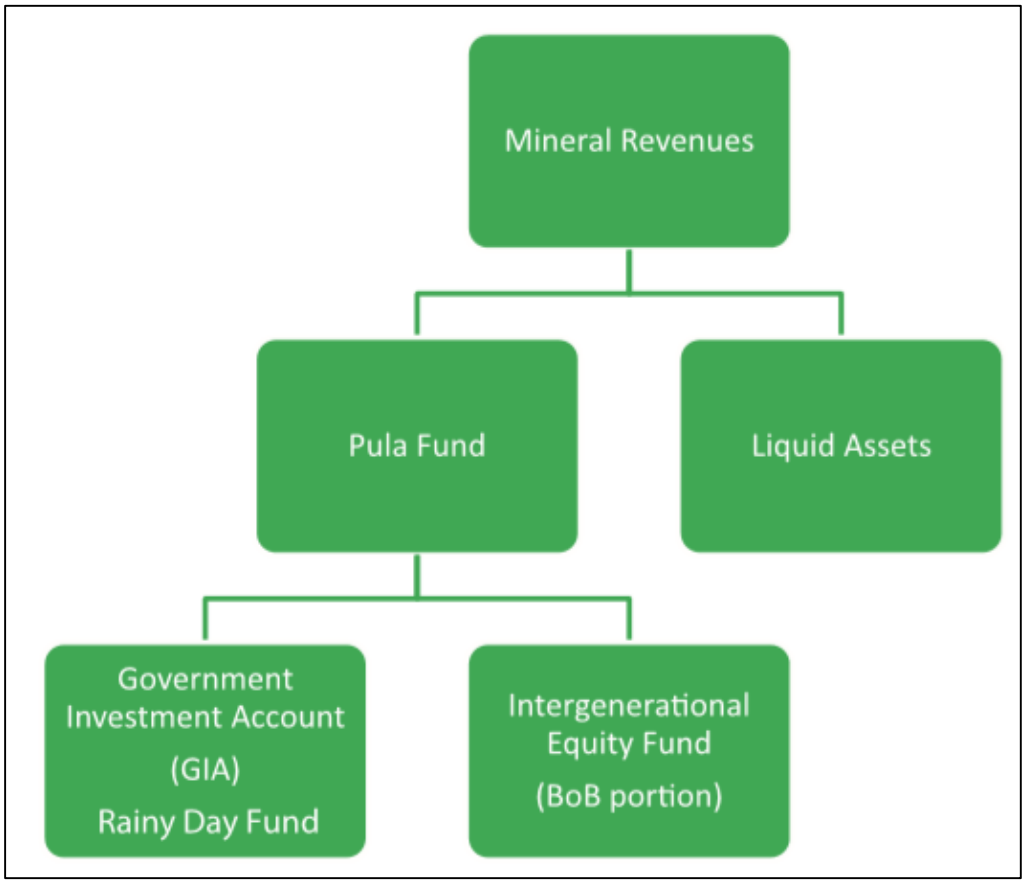


Figure 38: Administration of mineral revenues in Botswana (Meijia & Castel, 2012).

Botswana has been successful in managing the Pula Fund due to its strong institutions and good governance (Meijia & Castel, 2012). Several aspects of governance that include voice and accountability, government effectiveness, rule of law, quality of regulation, political stability and anti-corruption policies, are important for natural resource management (Meijia & Castel, 2012). Table 14 shows that Botswana scored highly on these aspects. Thus the narrative of Botswana illustrates a resource-rich nation that has managed to escape the resource curse.

Table 14: Botswana's Governance Research Indicators in comparison to other countries, 2002 (Kaufmann, Kraay & Mastruzzi, 2003 as cited in Iimi, 2007).

	Botswana	Lesotho	Namibia	South Africa	Swaziland	Sub-Saharan Africa	Low-Income Countries	Middle-Income Countries	High-Income Countries
Voice and accountability	0.75	0.53	0.66	0.75	0.28	0.42	0.38	0.57	0.82
Political stability	0.78	0.57	0.69	0.52	0.64	0.45	0.40	0.59	0.82
Government effectiveness	0.66	0.40	0.48	0.59	0.36	0.30	0.27	0.42	0.77
Quality of regulation	0.72	0.44	0.59	0.66	0.50	0.38	0.34	0.51	0.85
Rule of law	0.67	0.48	0.60	0.53	0.34	0.33	0.29	0.47	0.84
Control of corruption	0.62	0.39	0.47	0.51	0.36	0.29	0.25	0.39	0.76

Note: Zero represents the lowest governance indicator and one the highest governance indicator

6.2.2 Ghana

Resource abundance and economic growth

Ghana is endowed with a variety and abundant mineral resources that include gold, oil, diamonds, bauxite, manganese, salt and limestone (Abdulai, 2017). It is the 47th largest oil exporter in the world and the 11th in Africa and the largest gold producer in Africa (D. Adams, Ullah, Akhtar, K. Adams & Saidi, 2019). Oil production in Ghana commenced in 2010 from the offshore Jubilee field, with an estimated resource of 700 million barrels of oil and 800 billion cubic feet (ft^3) of gas and additional production commenced in 2016 from other projects (Skaten, 2018). In 2014, the mineral sector in Ghana accounted for about 0.8% of total GDP, contributed about 16% to government revenue and US$4.516 billion in export revenues came from the mineral sector (Ghana Ministry of Finance, 2015). Hence, the mineral sector of Ghana is very important to its economy.

Figure 39 shows that Ghana's GDP growth rate averaged 5% from 2002 to 2010, at the onset of oil production in 2011, it shot to 14.4% and went down to 4% in 2014 (Siakwah, 2017). Bawumia and Halland (2017) argued that

the GDP growth rate declined due to increase in current expenditure, increasing debt burden and poor macroeconomic policies. However, since 2011, there was improvement in the standard of living, health and education in Ghana as indicated by the United Nations Development Programme (UNDP) Human Development Index (Table 15). Ghana attained a lower middle income status in 2010 (Siakwah, 2017).

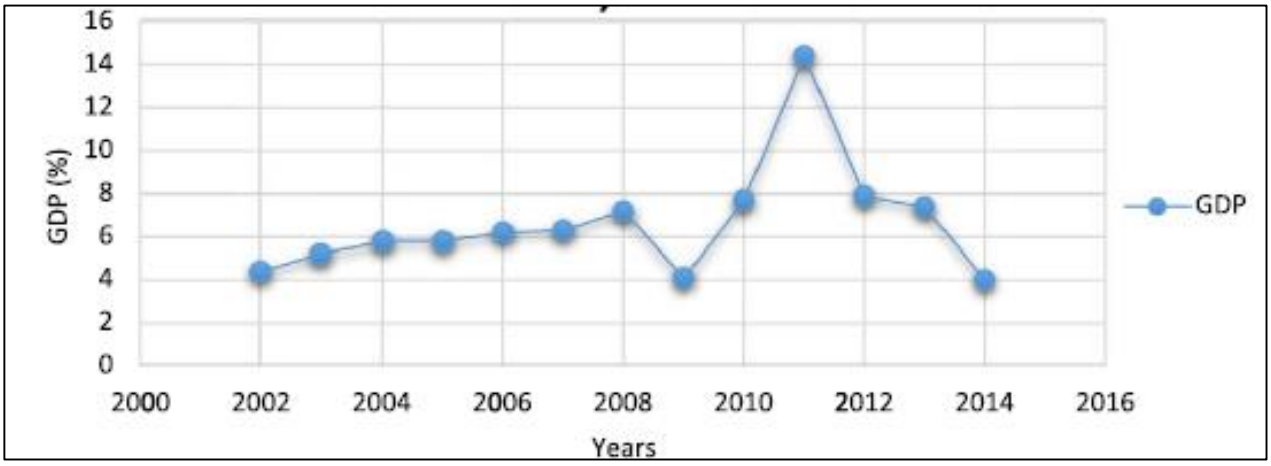


Figure 39: Ghana's GDP growth rate from 2002 to 2014 (Siakwah, 2017).

Table 15: Ghana's Human Development Index (HDI), 1980–2015 (Human Development Report, as cited in Siakwah, 2017).

Year	1980	1985	1990	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
HDI	0.423	0.433	0.502	0.487	0.511	0.521	0.532	0.544	0.549	0.556	0.566	0.571	0.573	**0.579**	**0.579**

Management of petroleum and mineral resources

Since independence in 1957 to the mid-1980s, Ghana adopted state-controlled economic development strategies characterised by threats of expropriation and policy inconsistence, which created an unfavourable environment for FDI and resulted in economic decline (Aubynn, 2017). The

continued decline in the economy made the government of Ghana to change the strategy in 1983 and adopt the IMF and the World Bank's Structural adjustment programmes informed by the free market ideology (Aubynn, 2017). The government assumed a regulatory role and this led to the drafting of new mining codes.

The management of mineral resources is now governed by the Minerals and Mining Act of 2006 and all petroleum and mineral resources are owned by the state. Private investors are granted reconnaissance, prospecting and mining licenses to operate through an application process on a first-come, first-served basis as opposed to bidding (Ayee, Søreide, Shukla, Minh Le, 2011). On the other hand, the Petroleum Exploration and Production Act of 2016, which governs the petroleum industry provides for competitive bidding in the allocation of petroleum licenses (Skaten, 2018). The government acquires a mandatory 10 percent free-carried equity interest in all mining companies (Government of Ghana, 2006). In order to improve foreign investment conditions, Ghana introduced special concessions and a favourable tax regime to the minerals sector. The new tax regime is shown in Table 16 and the special concessions include the following:

- Mining companies are exempted from payment of import duty on equipment (plant, machinery) imported for the purposes of the mining operations;
- Mining employees are exempted from paying income tax on furnished mine site accommodation and also expatriate employees remittances are exempted from taxation; and
- Concessionary tax rates are applied to overtime on mineral sector employees (Government of Ghana, 2006).

Table 16: Ghana's Mining Fiscal regime (Ghana Ministry of Finance, 2015).

Items	2006	2012	2014	Remarks
Incentives and Taxes				
Mineral Right(Mining lease)	One-time payment	Annual payment		*Minerals & Mining Licences Regulations 2012; LI 2176; Effective September 2013.*
Initial Capital Allowance	80%	20% ; Straight line	20% ; Straight line	*Act 839; Third schedule to IRA, Act 592 amended.*
Upliftment Allowance	5%	0%		
Carried forward Losses for purposes of taxation	5yrs	5yrs	*5yrs*	
Corporate Income Tax Rate	25%	35%	*35%*	
Mineral Royalty	3%-6%	5%	*5%*	*On Gross Revenue*
Gov't Equity Participation	10% free carried interest.	10% free carried interest.		

Revenue from the mineral sector is collected in the form of dividends, royalties at a rate of 5% of total revenue and profit taxes at a rate of 35% (Ayee, Søreide, Shukla, Minh Le, 2011). A 15-year stabilisation clause in the mining contracts protects private investors from arbitrary changes in the mining regulations and increases in taxes (Government of Ghana, 2006).

Two legal and regulatory instruments namely the Petroleum Commission Act 812 of 2011 and the Petroleum Revenue Management Act 815 of 2011 were promulgated to promote transparency and accountability in the management of oil rents (Ayelazuno, 2014). Oil rents are deposited into three funds, the Petroleum Holding Fund, where most of the revenue is deposited, the Ghana Stabilisation Fund, which is a savings account to

mitigate against future decline in revenues and the Ghana Heritage Fund, where savings for future generations are kept (Balma & Ncube, 2019).

Even though Ghana has established a robust institutional framework for the management of oil and gas revenues, it lacks the power to stop the government from borrowing (Ali-Nakyea, Amoh & Mohammed, 2019). The government of Ghana has been borrowing against expected large oil revenues (collateralisation of future oil revenues). Under the Heavily Indebted Poor Countries (HIPC) debt relief initiative, Ghana's debt reduced to GH₵9.5 billion in 2008 but by the end of 2014, it had increased to GH₵76.1 billion (Bawumia & Halland, 2017). Bawumia and Halland (2017:28) observed that the Ghana's history of fiscal management is characterised by alternating periods of fiscal discipline and fiscal indiscipline.

There has been an improvement in Ghana's good governance since 1993 with the holding of periodic democratic elections and peaceful handover of power among political parties (Siakwah, 2017). Corruption has been declining since oil production begun in 2011, as shown in Table 17. Freedom of Media and Civil society groups (Extractive Industry Transparency Initiative (EITI), Revenue Watch Institute, the Institute of Economic Affairs (IEA)) has enabled the promotion of transparency and accountability in the management of oil and mineral resource revenues (Ayelazuno, 2014). Ghana became a member of the EITI in 2003 and has established a local chapter called the Ghana Extractive Industries Transparency Initiative (GHEITI), which became compliant in 2011 (Bawumia & Halland, 2017). Onditi (2019) argued that the GHEITI "has enabled the creation of the Public Interest and Accountability Committee (PIAC) as part of a process of democratising and institutionalising the oil industry".

Table 17: Ghana's Corruption perception index 2008 (*as cited in Siakwah, 2017*).

Year	Score	Rank
2008	39	67/180
2009		69/180
2010	41	62/178
2011	39	69/182
2012	45	64/174
2013	46	63/175
2014	48	61/174
2015	47	56/180

However, challenges in Ghana's democracy still remain and include political intimidation, monetisation of politics, vote manipulation, and neopatrimonialism (Ayee, Søreide, Shukla & Minh Le, 2011). These challenges are due to the highly competitive and antagonistic nature of Ghanaian politics, which incentivises those in power to focus on short-term objectives of political survival, instead of long-term development objectives (Abdulai, 2017:22-23).

Thus, Ghana's experiences are mixed and the country does not fit into a classic example of a resource cursed nation, although the discovery of natural resources (petroleum and minerals) has brought some challenges. The chance of Ghana escaping the resource-curse lies in its membership of EITI, good governance and quality institutions and corruption mitigation strategies as illustrated in Figure 40 (D. Adams, Ullah, Akhtar, K. Adams & Saidi, 2019).

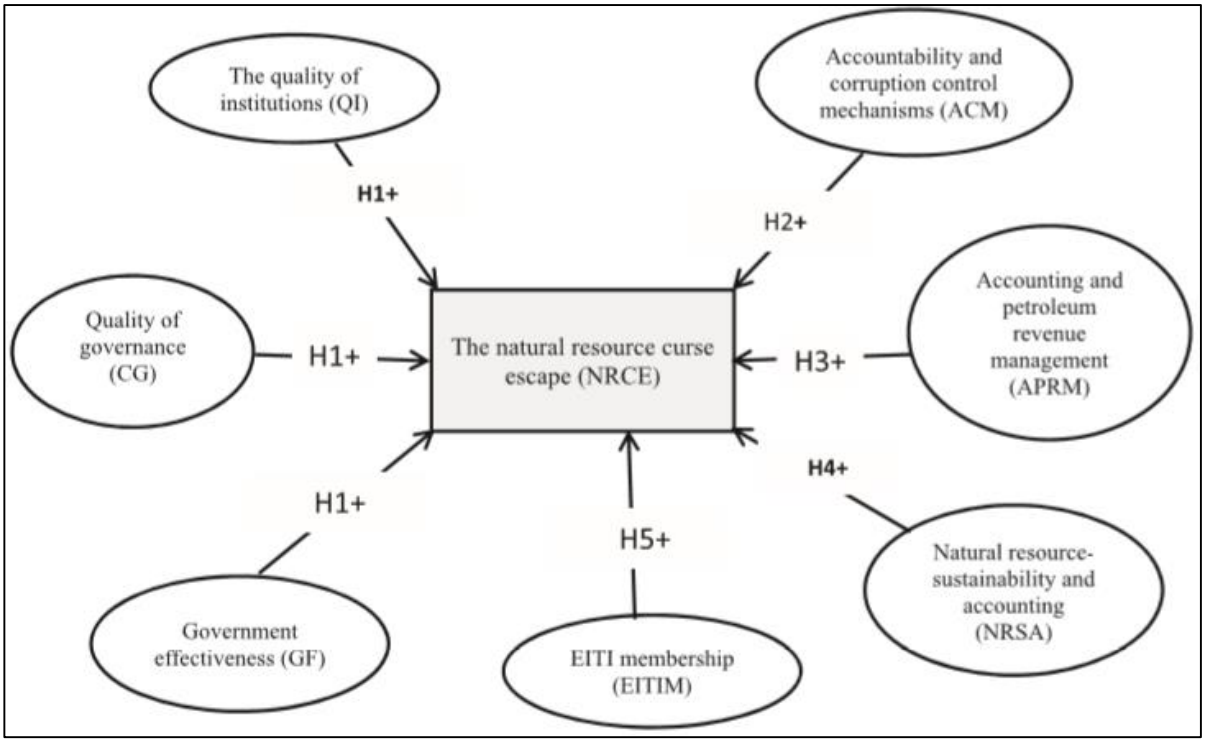


Figure 40: Framework for avoiding the resource curse in Ghana (D. Adams, Ullah, Akhtar, K. Adams & Saidi, 2019).

6.2.3 Nigeria

Resource abundance and economic growth

Nigeria has huge and diverse resources of solid minerals (iron ore, gold, manganese, coal, gypsum, zinc, magnesite, granite, phosphate, clay, bentonite, marble, limestone, silver, lead, bitumen, talc, diatomite) and oil and gas. The estimated reserves of iron ore are over three billion tonnes, of bitumen about 42 billion tonnes, about one billion tonnes of gypsum and over 100 million tonnes of talc (Adangor, 2018). According to the British Petroleum Statistical Review of World Energy (2016) (as cited in Olayungbo, 2019), Nigeria's oil reserves are estimated at 37.2 billion barrels, which is 3.1% of global reserves and natural gas reserve at 187 trillion standard cubic feet (scf). Nigeria commenced oil production in 1958; it is the largest producer in Africa and the 11th in the world (Adangor, 2018).

According to Gylfason (2001) (as cited in Larsen, 2005), Nigeria's gross national product had not changed for over 40 years despite its abundant oil

resources. Figure 41 shows real GDP per capita of Nigeria as a percent of world average (compared with four other resource-rich nations) from 1963 to 2012, which has been constantly low. On the failed state index, Nigeria has been sliding, from 54th position in the world in 2005, 22nd position in 2006, and 15th position in 2009 and from 2010 to 2012, it has been on 14th position (Titus & Hansi, 2013). Nigeria is still a low-income country with a poverty-rate of 62.6% (National Human Development Report, 2016, as cited in Olayungbo, 2019). Therefore, Nigeria has failed to translate its abundant oil and mineral resources to the benefit of its population, with the majority living on less than US$1.25 a day (Omeje, 2013).

Three bad governance regime types are found in Nigeria, namely autocracy (1970s-1990s), predatory state and a dysfunctional democracy, all these result in a resource curse (Omeje, 2013). The root cause is the dysfunctional political and economic institutions in Nigeria that has repeatedly created bad leadership dominated by dictatorial military rule, from 1960 to 1999 (Idemudia, 2012).

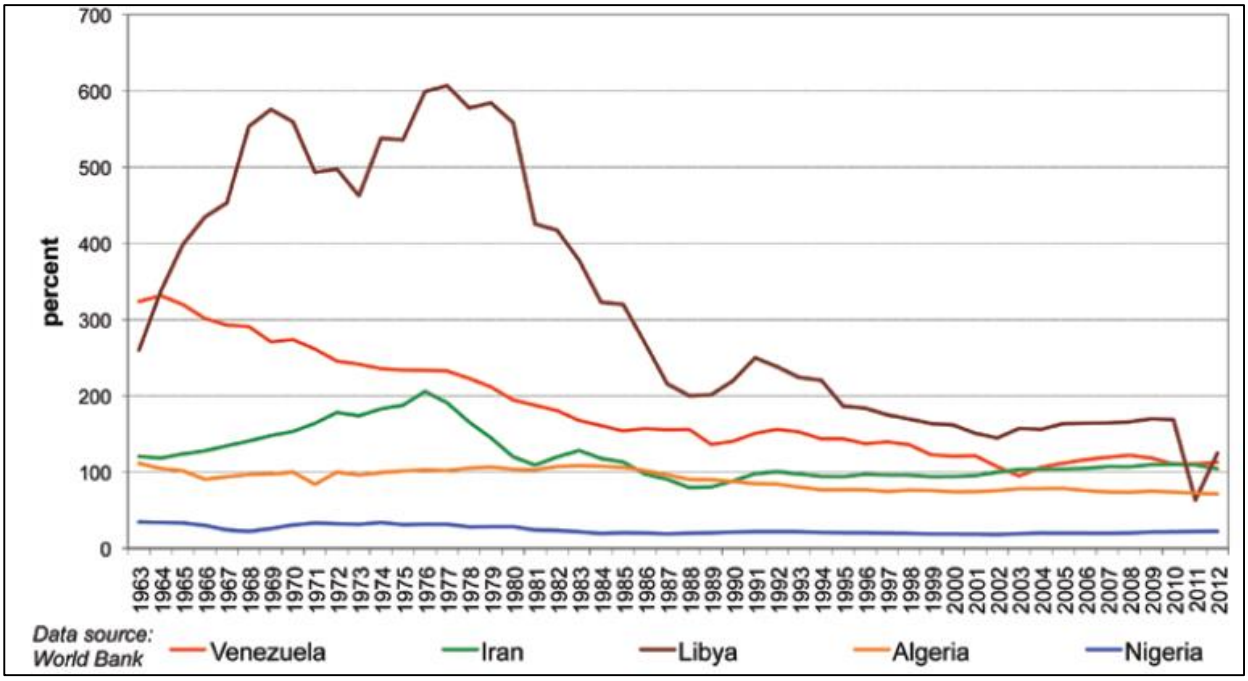


Figure 41: Real GDP per capita as percent of world average for five resource-rich economies, 1963 to 2012 (World Bank as cited in Kaznacheev, 2013).

Management of petroleum and mineral resources

The Nigerian federal government owns all mineral and oil resources and authorises mining licences as promulgated in the Nigerian Minerals and Mining Act of 2007 and the Petroleum Act of 1969 (Adangor, 2018). In joint-venture partnerships with multinational companies, the federal government dominates crude oil production and the state-owned company, the Nigerian National Petroleum Corporation (NNPC) dominates oil processing and refining (Omeje, 2013).

The federating states including the oil-rich states of the Niger Delta are excluded from the management of natural resources and the mining legislations and policies are biased towards the state and oil companies (Omeje, 2013). Communities in the oil-rich Niger Delta have been

marginalised, derive little benefit from oil extraction, live in poverty and exploitation of oil that has left a trail of environmental damage (Onditi, 2019). This has led to oil theft, community protests and violence against the government, which responded by establishing federal controlled development commissions (Niger Delta Development Board 1961, Oil Mineral Producing Areas Development 1992, Niger Delta Development Commission 2000) and state government controlled oil commissions mandated with redirecting more oil revenue to these communities (Idemudia, 2012). The different commissions failed to stimulate development in the oil-rich Niger Delta region due to the politicisation of the initiatives, bureaucratic inefficiencies, corruption, poor management and lack of performance evaluation guidelines (Frynas, 2000; Omotola, 2007 as cited in Idemudia, 2012). These communities continue to live in poverty and the protests have turned into militancy, oil theft and development of an underground economy (Naanen, 2019).

Revenues from the oil and gas sector include petroleum profit tax, royalties and dividends (Ejiogu, A, Ejiogu, C & Ambituuni, 2019). Oil revenues contribute 90% to total government revenue and account for 25% of GDP (Olayungbo, 2019). Thus the Nigerian economy is highly dependent on rents from the extraction of oil resources. The huge public sector in Nigeria consumes most of the revenue from the oil sector (Titus & Hansi, 2013). In 2011, Nigeria established a Sovereign Wealth Fund, however, corruption and lack of institutional reforms have undermined its performance (Sovereign Wealth Fund Institute 2015, as cited in Onditi, 2019).

Corruption is rampant in the management of oil revenues in Nigeria. The 2016 Transparency International's Corruption Perception Index ranked Nigeria 136 out of 174 countries with a score of 28 out of 100 (Ejiogu, A, Ejiogu, C & Ambituuni, 2019). In order to increase transparency and accountability and reduce corruption in the extractive sector, Nigeria joined the EITI in 2004 and established the local chapter called the Nigeria

Extractive Industries Transparency Initiative (NEITI). However, due to lack of institutional reforms, corrupt tendencies also infiltrated the NEITI and the NEITI "has moved from being a solution to the problems of transparency, accountability and corruption in Nigeria to being part of the problem" (Ejiogu, A, Ejiogu, C & Ambituuni, 2019:12). Figure 42 shows NEITI's transparency process and the unintended consequences in the case of Nigeria.

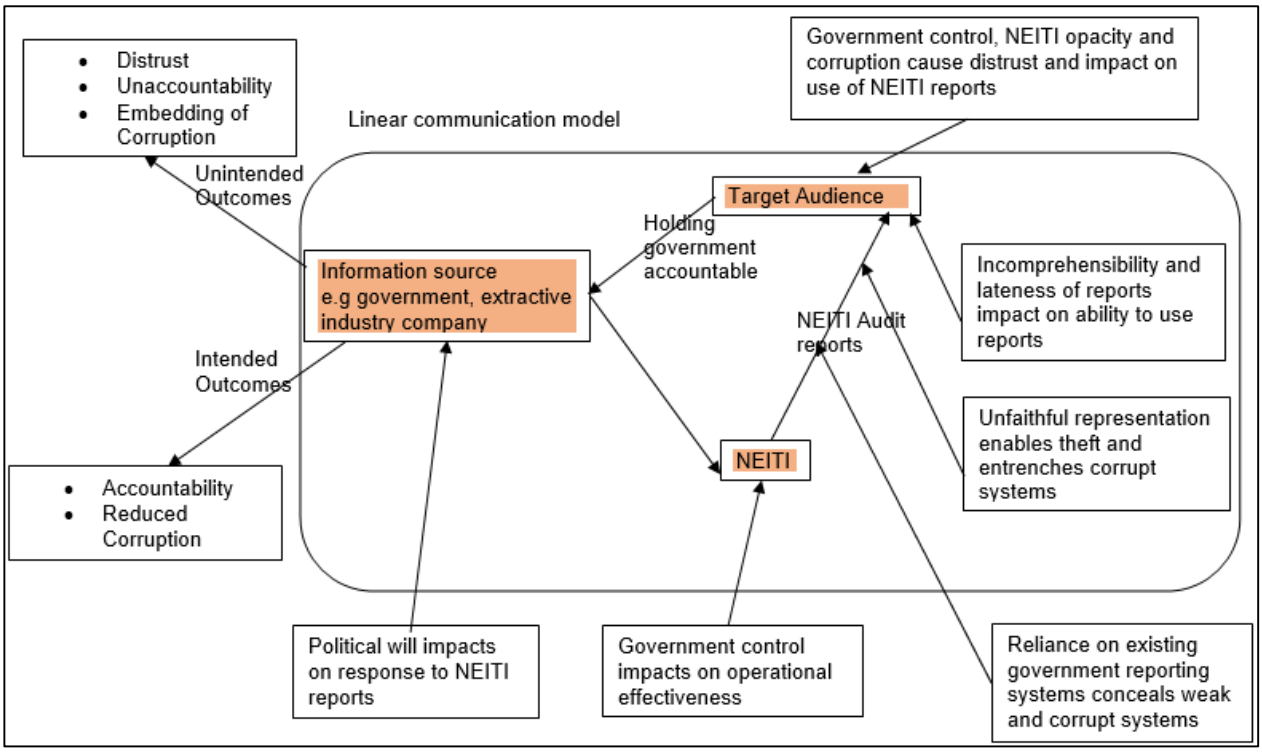


Figure 42: NEITI transparency process and the unintended consequences (Ejiogu, A, Ejiogu, C & Ambituuni, 2019).

Figure 43 shows that Nigeria performed badly on all measures of good governance in 2014 (government effectiveness, rule of law, control of corruption, regulatory quality, political stability) despite the presence of NEITI. These measures are important for economic growth and development. Thus, the experiences of Nigeria qualify it as a classic example of a resource cursed nation.

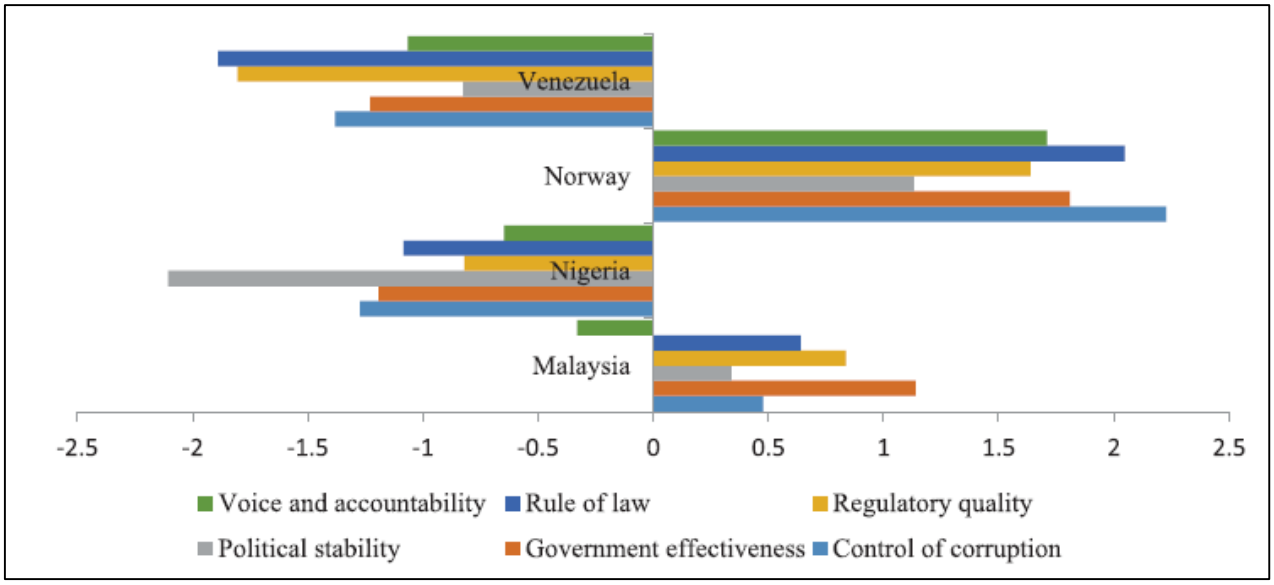


Figure 43: Comparison of quality of institutions in Nigeria with other nations (Malaysia, Norway, Venezuela), 2014 (Onditi, 2019).

6.3 Developing Countries - South America

6.3.1 Chile

Resource abundance and economic growth

Chile has the largest reserves of copper in the world, which account for 29.2% of total world reserves and is also the world's largest copper producer with a production of 30.5% of world output (2015) (Leiva, 2019). In 2015, copper exports were US$30.371 billion, which constitute 47.9% of total exports (Larraín & Perelló, 2019). Figure 44 shows Chile's overall mining exports, copper exports and its share of the copper world market from 2001 to 2015.

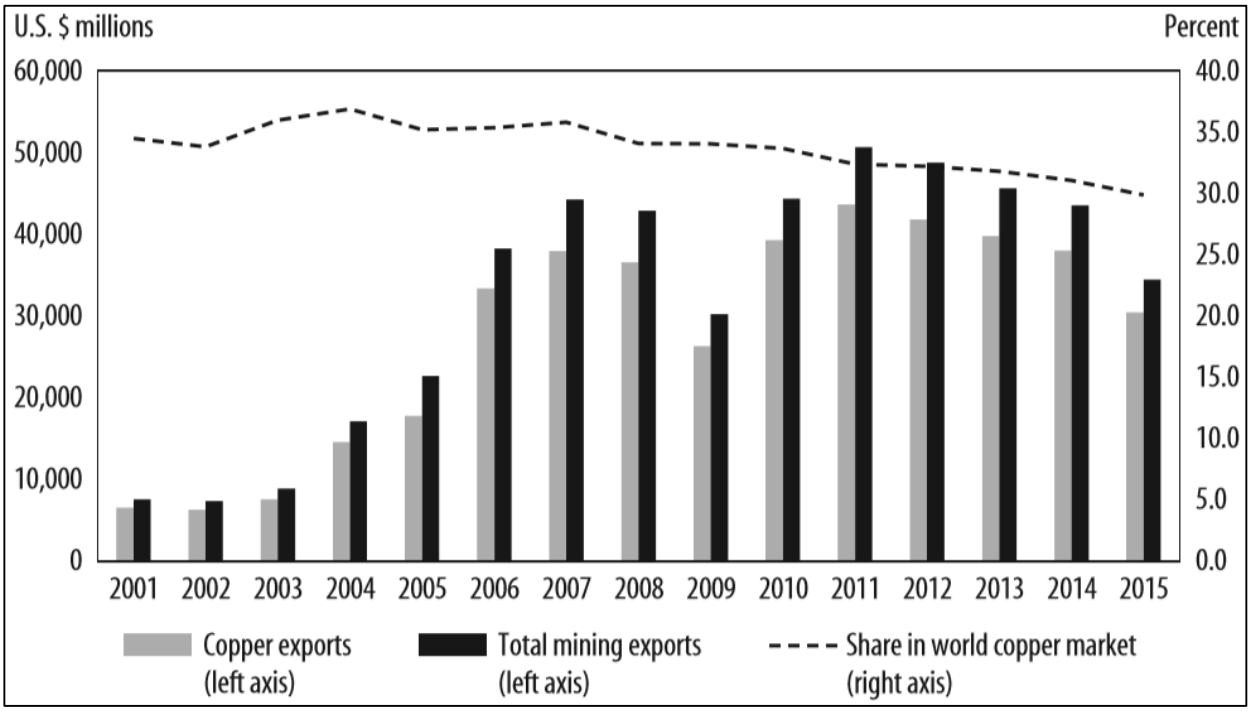
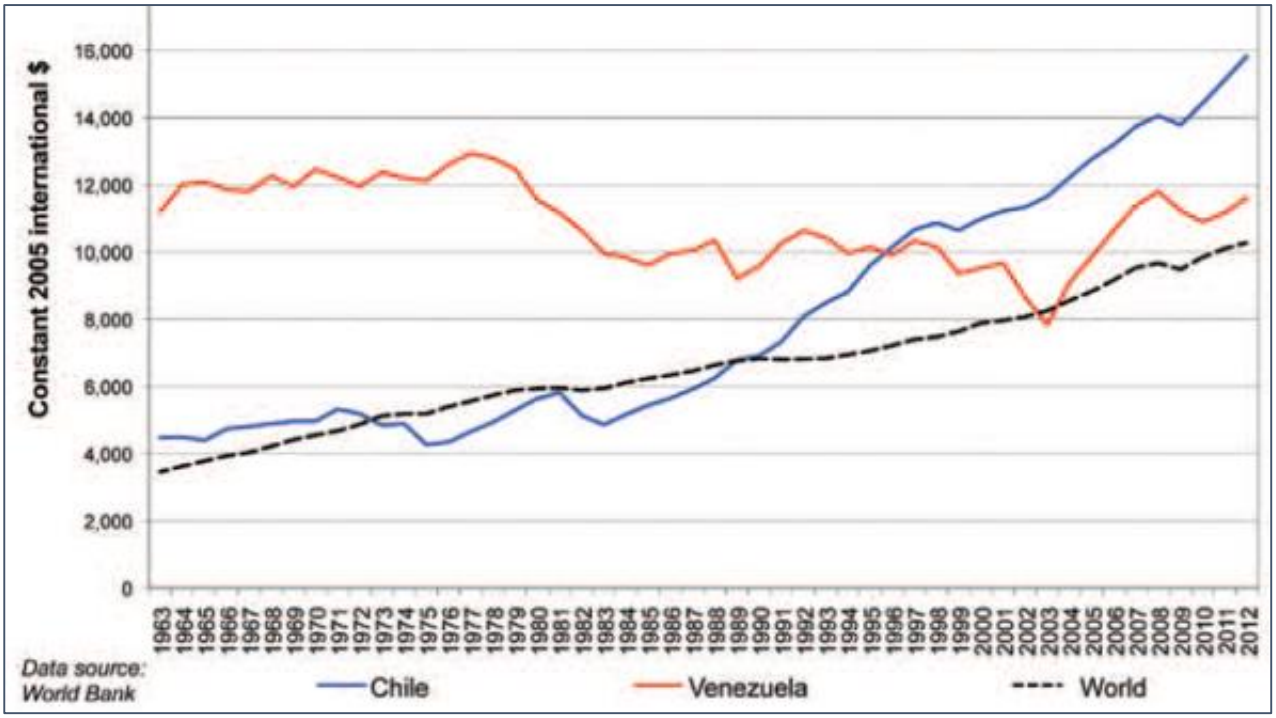


Figure 44: Chile's overall mining exports, copper exports and its share of the copper world market from 2001-2015 (Chilean Copper Commission as cited in Larraín & Perelló, 2019).

From 2001 to 2015, Chile's GDP growth averaged 4.1% and was much higher in the previous years where it grew by 5% annually in the 1980s (Larraín & Perelló, 2019). Copper production accounts for 10% of GDP (Leiva, 2019). Figure 45 shows Chile's Real GDP per capita (Purchasing Power Parity - PPP) from 1963 to 2012 and it has attained a high income status. From 1998 to 2013, Chile experienced a significant decrease in the national poverty rate of 6.4% (Álvarez, García-Marín & Ilabaca, 2018). Thus, Chile's impressive growth indicates that it has managed to avoid the resource curse.



Management of mineral resources

Chile adopted state intervention policies prior to 1973, which resulted in economic decline. From 1973, the autocratic government that took over embarked on free market reforms of economic institutions and policies and Chile started to function as a developmental state (Stevens, 2006). However, during these reforms, the copper sector was not privatised (Barton, Gwynne & Murray, 2008). The reforms gave rise to domestic entrepreneurship and phenomenal growth driven by the export sector (Stevens, 2006).

Chile's 1981 mining law, introduced the private concession system where mineral concessions were treated as private properties (Kaznacheev, 2013). According to Wright and Czelusta (2003), the legislation safeguarded against expropriations, however, Codelco, the state mining entity held onto more than 50% of Chile's copper production. In addition, Chile has a favourable mining fiscal regime with low tax and royalty concessions and all

these together with the state's mining partnerships, both domestic and abroad, have increased private sector participation in the mining sector (Ebert & Menza, 2015). Thus, Chile's good economic institutions and favourable regulatory framework increased the international competitiveness of the Chilean mining industry.

Revenues from the mineral sector include profits from Codelco, royalties and taxes on profits of private mining enterprises. Chile has successfully managed the revenues through strict fiscal discipline, control of levels of public and private debt, prudent exchange rate management and establishment of transparent offshore sovereign wealth funds (Kaznacheev, 2013). Two sovereign wealth funds were established in 2006, the Economic and Social Stabilisation Fund was established to cushion against economic downturns and also, to absorb the surplus and the Pension Reserve Fund is a savings fund for future generations (Ebert & Menza, 2015).

According to Kolstad and Søreide (2009) (as cited in Ebert & Menza, 2015), there are low levels of corruption in Chile, as indicated by the World Bank index where Chile ranked 1.37 (ranges from -2.5 to +2.5, higher means less corruption) close to countries like Norway. Moreover, in 2018, it ranked 27th worldwide in the Corruption Perceptions Index by Transparency International (Larraín & Perelló, 2019). Although Chile has been under dictatorship rule for a long time (1973-1990), it has strong political institutions at national level that compare well to some OECD member countries (Larraín & Perelló, 2019). Table 18 shows that Chile performed well on world rankings of macro and institutional development indicators (Schmidt-Hebbel, 2009). Chile's success story under autocratic rule for 17 years may indicate that the type of governance regime (autocratic or democratic) is not important in achieving economic development.

Table 18: Chile's world ranking of macro and institutional development indicators, 2006 (Schmidt-Hebbel, 2009).

Index	Highest ranked emerging country	Position of Chile	Number of countries	Source
Competitiveness	Chile	27	125	The Global Competitiveness Report
Ease of doing business	Lithuania	28	175	Doing Business—The World Bank Group
Quality of institutions	Chile	11	30	World Bank
Rule of law	Chile	12	30	World Bank
Macroeconomic management	Algeria	6	125	World Economic Forum
Banking system strength	Chile	9	30	Based on Moody's Financial Strength Ranking
Contribution of monetary policy to macroeconomic performance	Chile	1	61	Institute for Management Development
Corporate tax rate	Hungary	3	30	Price Waterhouse Coopers
Labor market rigidity	Brazil	18	21	Heckman and Pagés (2003)

6.3.2 Brazil

Natural resource abundance and economic growth

According to the British Petroleum Company (BP)'s Statistical Review of World Energy (as cited in Chauhan, Mourik & Florencio, 2014), the proved oil reserves of Brazil stood at 15.6 billion barrels in 2014 and had the second largest reserves in Latin America. Brazil is one of the top ten nations with the greatest shale gas reservoirs (6.9 trillion cubic metres (m^3) recoverable, 0.4 trillion m^3 proved) in the world (Lenhard, Andersen & Coimbra-Araújo, 2018). Historically, it has been dependent on other natural resources such as iron ore, coffee and rubber (Tolentino & Singh, 2014).

From 1930 to 1989, Brazil adopted an import-substitution industrialisation strategy as its development model, however, the country was open to FDI. There was harmonisation between industrial and trade policies and a stable macroeconomic environment, which resulted in a diversified manufacturing sector over time (Nassif, Morandi, Araújo & Feijó, 2020). This was largely under a military government (1964–85) (Tolentino & Singh, 2014). Brazil liberalised its economy including the mineral and oil sectors in 1990 under the Washington Consensus recommendations as a solution to control the external debt crisis (which increased from 24% of GDP to 40% of GDP in 1989), of the 1980s (Chauhan, Mourik & Florencio, 2014).

There has been sustained economic growth in Brazil from 1950 to 1979 with an average real GDP growth of 7.3% per year, which was followed by a slow growth of 2.8% per year from 1980 to 2011 (Nassif, Morandi, Araújo & Feijó, 2020). The average growth rate further decreased to 1.59% per year from 2011 to 2014 (Oreiro & D'Agostini, 2017). According to Arestis and Baltar (2018:1), "Brazilian economic growth became unstable and relatively low because the trade and financial liberalisation made the country's interest rates increase and investment rate reduced".

Management of the mineral and oil resources

Mineral assets were nationalised in Brazil under the 1934 Mining Code in which the state controlled the oil and mining sectors (Tolentino & Singh, 2014). After liberalisation, the oil and gas sector, which was dominated by the national oil company (Petróleo Brasileiro SA, Petrobras) was opened to the private sector in 1995, a system of concession regime was implemented in 1997 and in 2013, the production sharing contract (PSC) system was introduced for strategic areas (Araujo & Leoneti, 2019). Figure 46 shows the management of the oil and gas sector under the new Oil law (1997). An advisory body (National Council for Energy Policy, "Conselho Nacional de Política Energética" – CNPE) lead by the Minister of Energy and Mines was

established mandated with the crafting of national policies for the sector. The new Oil law also introduced auctions for hydrocarbons concessions annually and created an independent regulatory agency (National Oil Agency, “Agência Nacional do Petróleo” – ANP) for the licensing, promotion, regulation, contracting and monitoring of concessions (Alves, 2013).

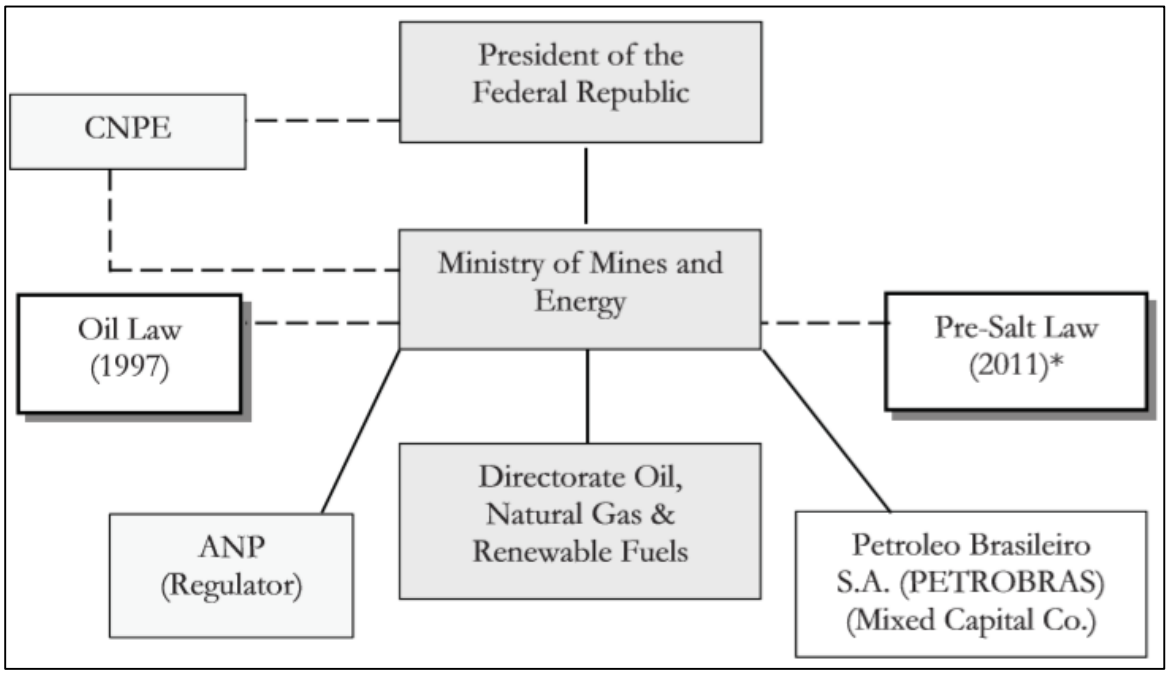


Figure 46: The institutional structure of the management of Brazil’s oil sector (Alves, 2013).

Revenue from the oil sector is mainly in the form of royalties (5 to 10%), retention payments and a special participation tax for productive areas (Chauhan, Mourik & Florencio, 2014). The oil law of 1997 resulted in more distribution of oil revenues to municipalities (Nishijima, Sarti & Canuto, 2018). An oil stabilisation fund was established in 1980 and the new Oil law created a social fund to finance social and educational projects, both funds cushion the country from oil price volatility (Chauhan, Mourik & Florencio, 2014). However, the corruption scandal in 2014 of misappropriation of billions of dollars in Petrobras involving senior government officials has

portrayed Brazil as an unattractive investment destination (Waterworth & Bradshaw, 2018).

The Brazilian experiences are mixed, with the economy generating higher economic growth rates (1950-1979) under authoritarian rule with import-substitution policies. The adoption of trade liberalisation policies and the change in the type of governance model to democratic was largely associated with economic decline. Like Chile, an autocratic governance in Brazil seems to have not negatively affected economic growth. On the whole, Brazil seems to have managed to mitigate the effects of the resource curse.

6.3.3 Venezuela

Natural resource abundance and economic growth

Venezuela has a long history of oil production. Since 1928, it was the 3rd largest oil producer in the world for the next 40 years (Portillo, 2016). In 2014, oil exports accounted for 30% of GDP and contributed more than 90% to total exports (Gregorio, 2015). Thus, the Venezuelan economy is dependent on oil exports.

The Venezuelan democracy, which was established in 1958 after a military ruler was overthrown has been co-existing with the state-led development strategy for 30 years (1958-1988) (Crisp, 1998). During the period from the 1950s to late 1970s, Venezuela kept low inflation, strong currency and a dominant role of the state, which led to high GDP growth (Levine & Crisp, 1999). In the 1950s, Venezuela had one of the highest GDP growth in Latin America and worldwide (Kaznacheev, 2013). Figure 45 above shows Venezuela's high real GDP per capita (annual average of US$12000) from the early 1960s to the late 1970s. Oil revenues were spent on infrastructure

building, schools and health facilities that transformed a once peasant society into a literate urban nation (Levine & Crisp, 1999).

In the decades that followed from the early 1980s, Venezuela experienced an economic meltdown, which started with the collapse of the currency in 1983 leading to depreciation and rise in inflation (Levine & Crisp, 1999). The commodity price bust of the 1980s plunged Venezuela into a huge debt as it had been borrowing against future oil revenues (Crisp, 1998). The ensued economic decline resulted in the adoption of neoliberal reforms in 1989, which involved removal of price controls, subsidies and tariff barriers, floating exchange rate, privatisation of state enterprises and opening up to foreign investment (Crisp, 1998). Despite the abundance of oil resources, real income per capita plunged by 25% between 1980 and 2002 and by 1998, 18.5% of Venezuelans were living below the poverty line (Kaznacheev, 2013).

The continued economic crisis after the implementation of the neoliberal reforms gave rise to popular uprisings, which led to the democratic election of Hugo Chávez in 1998 and the return to the state-led development model (Rosales, 2013). Chávez's era was characterised by nationalisations across all sectors, currency and price controls and a steep decline in democracy with no checks and balances on Presidential decisions (Corrales, Hernandez & Salgado, 2020). In 2014, Venezuela performed badly on measures of good governance such as political stability, rule of law, voice and accountability, control of corruption, government effectiveness and regulatory quality, as shown in Figure 43 above. The collapse of the oil prices from 2013 to 2016, prompted Venezuela to make adjustments in fiscal spending and imports, which further plunged Venezuela into an economic crisis characterised by accelerating inflation (2013–2017), hyperinflation (2018–2020) and shortages of basic commodities (Corrales, Hernandez & Salgado, 2020). Figure 47 shows the plunge in GDP growth rates from 2012 to 2018.

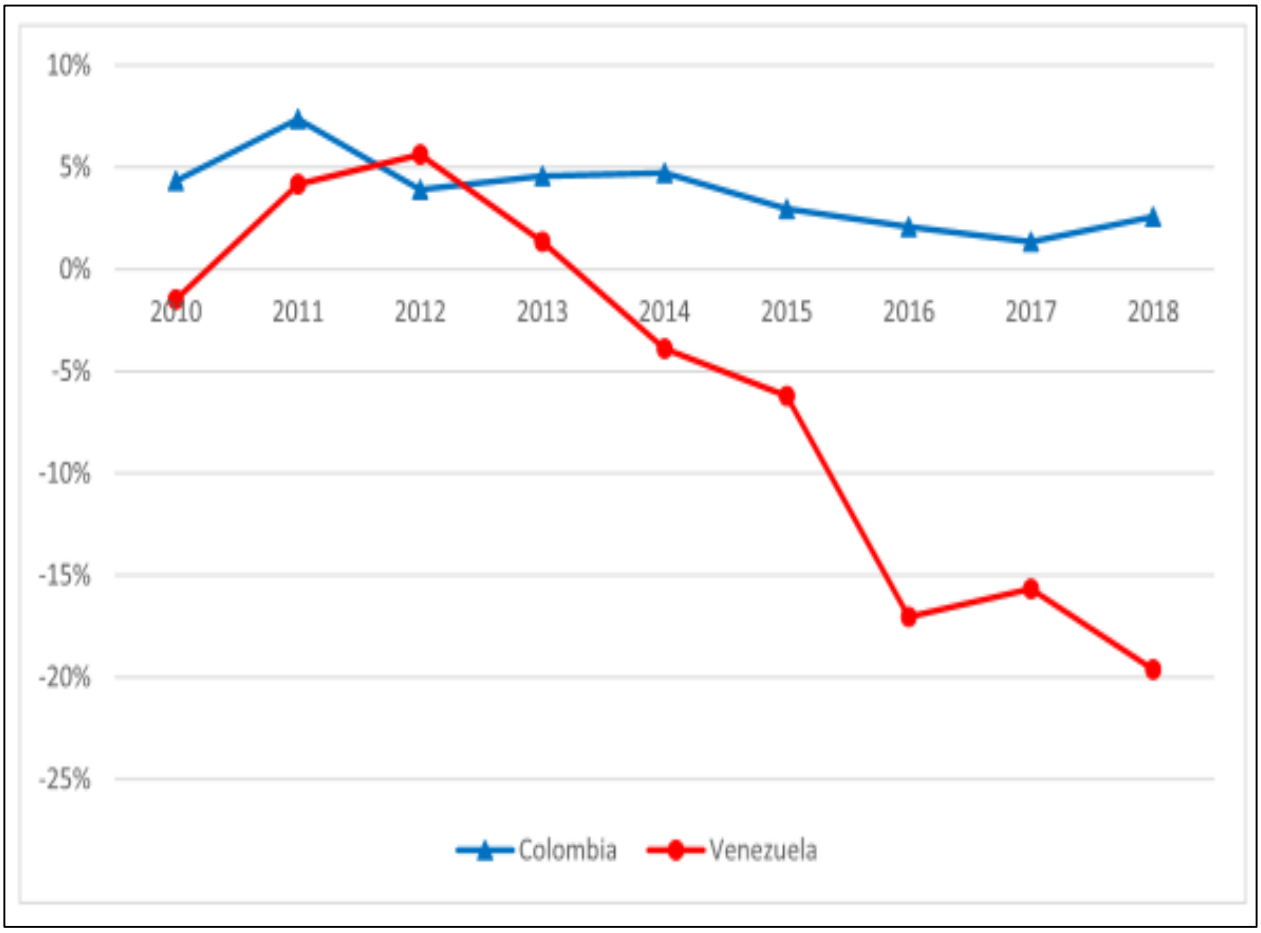


Figure 47: Venezuela's GDP growth rates from 2010 to 2018 (Corrales, Hernandez & Salgado, 2020).

Management of oil resources

In the Venezuelan Mining law promulgated in 1909, the state had exclusive rights over all minerals and private companies developed the oil industry under 40-year lease contracts with the government receiving tax on profits, fee per hectare on leases and royalty (Portillo, 2016). Threats of nationalisation of the oil industry started as early as 1958, when the leasing of new fields for exploration was stopped and the state national oil company (the Corporacion Venezolana the Petroleo) was established in 1960 but the final transfer of oil assets to the state was completed in 1975 (Portillo, 2016). Table 19 shows the evolution of the regulatory and fiscal regimes in

Venezuela under nationalisation (1976-1988, 1999-current) and neoliberal policies (1989-1998) (Rosales, 2018).

Table 19: Evolution of the regulatory and fiscal regimes in Venezuela (Rosales, 2018).

Period/round of auctions	**Type of contract**	**Regulatory features**	**Financial features**
1976–1991	-National monopoly -Association contracts for Technical assistance	-Petróleos de Venezuela sa (PDVSA) merged into a holding with three major operators: Maraven, Lagoven and Corpoven and other affiliates. -Managerial autonomy was preserved	-67% income tax, reduced to 59% initially -16.6% royalty -10% exemption in income tax for export profits
1991 First round of auctions, apertura	-3 Service contracts, Operating Service Agreements (OSAs)	-International arbitration was introduced in case of controversies -PDVSA's debts and assets abroad were collateral for investments -A control committee between PDVSA controlled ventures	-Service fee raged between 54% and 70% of oil price -PDVSA covered the royalty -Income tax lowered to 34%
1992 Second round of auctions	-13 OSAs -4 joint ventures for enhancing extra-heavy crude	-Regulatory features remained -PDVSA held minority shares in joint ventures	-Join-ventures had a 1% royalty for the first 10 years and a 34% income tax
1996 Third round of auctions	-18 OSAs -Risk exploration (RE) agreements, revenue sharing schemes	-Up to 39-year contracts and joint ventures for new discoveries under RE agreements	-1% royalty for low rate of return and 16.6% for higher rates of return -67% income tax and up to 50% profit sharing
2007 Full oil sovereignty campaign	-Contracts last 20 years -Joint-ventures with 60% assets for the Corporacion Venezolana the Petroleo (CVP)	-All companies were forced to migrate to joint-ventures	-Royalty 30% -Income tax for the oil sector 50% -Royalty for extra heavy oil projects 16.3% -U.S. $ 400 million compensation for fiscal burden foregone

After the dismantling of neoliberal reforms in 1998, Venezuela re-wrote the national constitution (1999) and together with the Hydrocarbons' Law (2001) restricted privatisation of the oil sector (Rosales, 2018). Such reforms were through Presidential decree. The Venezuelan oil company Petróleos de Venezuela sa (PDVSA) was the major player in the sector with private enterprises only allowed minority shares in joint ventures with PDVSA (Rosales, 2013). Thus a new form of nationalisation emerged and joint-ventures was the new preferred policy. "For Chávez nationalisation really meant having majority partnership in investments" (Rosales, 2018:459). PDVSA was under political control with Board members appointed by presidential decree and employment of non-competent ruling party loyalists (Corrales, Hernandez & Salgado, 2020).

Large oil revenues (US$23 billion, 2013) were spent on social programmes under the direct supervision of the President and any windfall revenues would go towards increasing public expenditure and social spending (40% of GDP in 2006) (Rosales, 2013). Social and educational programs funded through oil revenues were not very successful due to rent-seeking behaviour (Mugerwa & Suzman, 2015). A Fund of National Development was established in 2005 to save the surplus foreign reserves from export of oil and use of this money was entirely at the president's discretion (Rosales, 2013). The experiences of Venezuela are consistent with a resource-cursed nation like Nigeria.

6.4 Developing Countries - Middle East

6.4.1 Saudi Arabia

Natural resource abundance and economic growth

The world's largest oil exporter is Saudi Arabia, with proven oil reserves of 266.4 billion barrels constituting 22% of world oil reserves and large reserves of gas (8,588 billion m^3) (Anser, Yousaf, Nassani, Vinh Vo &

Zaman, 2020). Saudi Arabia's other mineral resources include gold, iron, copper, chromium, manganese, zinc, lead, aluminium, tungsten, silver and tin (Anser, Yousaf, Nassani, Vinh Vo & Zaman, 2020). According to Aker and Aghaei (2019), the petroleum sector (oil and gas) accounts for 85% of total export revenues and 50% of GDP. This implies that the Saudi Arabian economy is poorly diversified and dependent on oil and gas revenues. The main challenges to diversification in Saud Arabia include:

- Weak legislative environment;
- Poor human capital, 83% of the private sector employees in Saudi Arabia are low skilled non-Saudi Arabians;
- No value addition in the private sector;
- The Saudi economy needs to be changed from a directive role to an indicative role through change in the education system and research and innovation;
- The private sector is provided with poor logistic service compared with the neighbouring countries;
- The private sector is dependent on government subsidies, generous contracts and free loans; and
- The government is not effectively providing funds for private sector, it owns most of the big companies and semi-government funds (Banafea & Ibnrubbian, 2018).

However, the government of Saud Arabia has embarked on re-structuring of its economy through privatisation of key government services, membership of the World Trade Organisation and FDI (Ramady & Saee, 2007). From 1980 to 1989, Saudi Arabia registered a negative growth rate of 0.6%, which can be attributed to a decline in oil prices, however, the growth rate improved to a yearly average of 3% from 1990 to 1999, as shown in Figure 48 (Kandil & Nandwa, 2015). Oil revenues have brought massive growth and development in Saudi

Arabia, with a GDP of US$748.4 billion, a per capita income of US$26,000 and a Human Development Index of 0.836 (Farhan, Brevetti & Laditan, 2016). This indicates that Saudi Arabia managed to escape the resource curse.

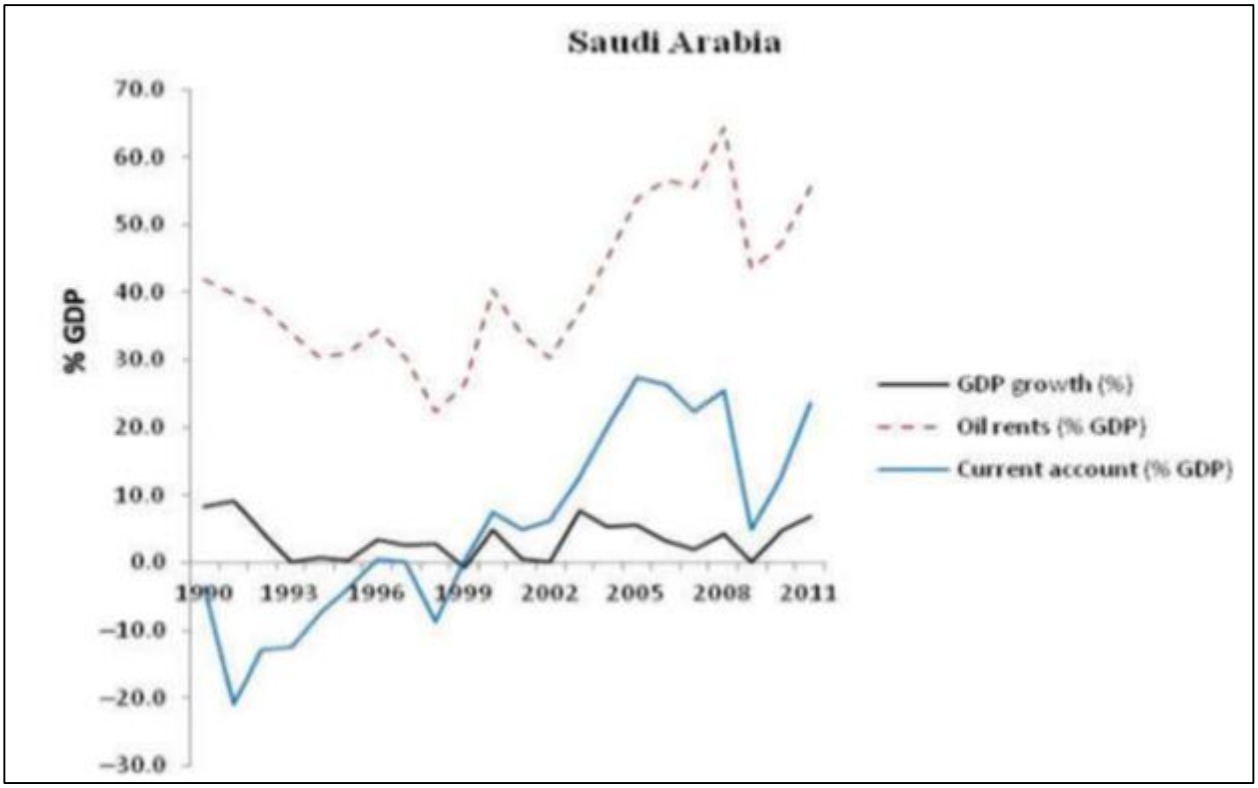


Figure 48: Saudi Arabia's GDP growth, oil rents and current account balances as a percentage of GDP (Kandil & Nandwa, 2015).

Management of petroleum resources

The form of governance in Saudi Arabia is an absolute monarchy, the King and members of his royal family make all the decisions (Farhan, Brevetti & Laditan, 2016). The Saudi Arabian economy has been classified as "a patrimonial market economy, a country classification closely linked to rentier and semi-rentier economies and their potential to distribute rents amongst

the members of the networks, clans and families" (Bradshaw, Graaf & Connolly, 2019:4).

In view of promoting diversification from dependence on oil revenues, in 2000, Saud Arabia enacted a new law (the Foreign Investment Law) and formed the Saudi Arabian General Investment Authority (SAGIA) with the mandate to license and incorporate new foreign and joint venture companies (Ramady & Saee, 2007). Table 20 summarises the main changes in the new law and the associated benefits. However, the petroleum industry is dominated by the state-owned oil company (Saudi Aramco), exploration, drilling and production of petroleum is still not open to foreigner investors (Ramady & Saee, 2007).

Table 20: Summary of the new Saudi Arabian Foreign Investment Law compared to the old law (Ramady & Saee, 2007). Note: SR-Saudi riyal

Feature	New Law	Previous Law
Tax Holiday	• No reference is made to tax holidays and dividends taxes. This and many other details need to be clarified.	• If Saudi share in company is greater or equal to 25% , foreign investors will not pay taxes during the first: - ten years for industrial projects. - five years for services and agricultural projects
Taxing Scheme	• If the corporate profits of a company are less than SR100,000, they are taxed at the rate of 25%; the rate rises to 30% if corporate profits are more than SR100,000 - The new law reduced the tax brackets from four to only two	• If the corporate profits of a joint venture company are: - Less than SR100,000, the tax rate is 25% - More that SR100,000 but less than SR500,000, the tax rate is 35% - More than SR500,000 but less than SR1,000,000, the tax rate is 40%. - More than SR1,000,000, the tax rate is 45%
Financial Losses	• No limitation on the number of future years that financial losses can be allocated to	• Financial losses can only be allocated to next year's operations.
Loans from the Saudi Industrial Development Fund (SIDF)	• Companies fully or partially owned by foreigners can apply for subsidized loans from the SIDF.	• For company to apply for SIDF loans, the Saudi share in equity has to be at least 25%.
Ownership	• Full ownership of the project is granted to the licensed firm (including land, buildings, and housing for employees).	• There must be a Saudi partner/sponsor who would own the land.
Sponsorship	• No Saudi sponsor is needed for the foreign investor. The licensed company will be the sponsor for the expatriate workers.	• The Saudi partner will be the sponsor for the foreign investor and expatriates working in the joint venture company.

The government established the Saudi Arabian Monetary Authority (SAMA) in 1952 to deposit and reserve oil revenues to cushion from fluctuations of commodity prices (AlKathiri, Atalla, Murphy & Pierru, 2020). A sovereign wealth Fund (the Public Investment Fund) was established in 2008 (El-Kharouf, Al-Qudsi & Obeid, 2010).

Saudi Arabia generally performed poorly on governance indicators and ease of doing business, as shown in Tables 21 and 22. Voice and accountability is the worst governance indicator with a very low score of 8% in 1996 dropping to 3% in 2014 with the other indicators like Rule of law, Regulatory quality, Control of corruption and Government effectiveness, being generally poor (Biygautane, Hodge & Gerber, 2018). The World Bank's ranking on ease of doing business indicates that it is very risky to conduct business in Saudi Arabia with Resolving Insolvency indicator ranking worst (189/189) (Biygautane, Hodge & Gerber, 2018).

Table 21: Indicators of governance for Kuwait, Saudi Arabia (KSA) and Qatar (World Bank data 2015 as cited in Biygautane, Hodge & Gerber, 2018).

	Voice and Accountability			Government Effectiveness			Regulatory Quality			Rule of Law			Control of Corruption		
Country	1996	2004	2014	1996	2004	2014	1996	2004	2014	1996	2004	2014	1996	2004	2014
Kuwait	44	39	29	60	61	47	55	69	48	65	65	60	78	82	50
KSA	8	10	3	46	45	62	47	56	53	59	57	65	28	46	59
Qatar	31	37	22	68	71	78	50	59	70	55	63	81	56	73	82

Note: 1% = worst, 100% = best.

Table 22: Ease of doing business ranking of Kuwait, Saudi Arabia and Qatar (World Bank Group Doing Business Database 2015 as cited in Biygautane, Hodge & Gerber, 2018).

	Starting a Business	Getting Credit	Enforcing Contracts	Resolving Insolvency	Legal Rights
Kuwait	148	109	58	122	106
Saudi Arabia	130	79	86	189	106
Qatar	109	133	112	51	129

Note: 1 = best, 189 = worst, except legal rights where 1 = best and 140 = worst.

6.4.2 Qatar

Natural resource abundance and economic growth

Qatar has abundant natural resources that include natural gas, crude oil and helium (Rystad Energy, 2018 as cited in Tok, Koç & D'Alessandro, 2020). The single largest natural gas field in the world is found in Qatar, it holds 35% of the global market share and Qatar is the world's largest exporter of liquefied natural gas (LNG) (Ritz, 2019). Figure 49 shows that from 2012 to 2016, revenue from oil and gas exports varied between 81.2%-90% of total exports, government revenue from oil and gas varied between 78.8%-85.5% of total revenue and oil and gas share in GDP varied between 23.26%-45.73%. These figures indicate an economy highly dependent on oil and gas.

Qatar has embarked on a diversification strategy, business reforms and infrastructural investment that has made it one of the most competitive Gulf States (Aker & Aghaei, 2019). Figure 50 shows Qatar's phenomenal GDP growth since mid-2000s and "Qatar has become the richest nation on earth in terms of per capita GDP with a large amount of revenue particularly from LNG sales" (Tok, Koç & D'Alessandro, 2020:6). As such Qatar is able to provide to its citizens' free health care, free public education, housing and subsidised water, zero taxation, high salaries and unemployment benefits and subsidised electricity and gas (Tok, Koç & D'Alessandro, 2020). However, these economic benefits have been used for exchange of lack of representation in decision making and political rights (Tok, Koç & D'Alessandro, 2020).

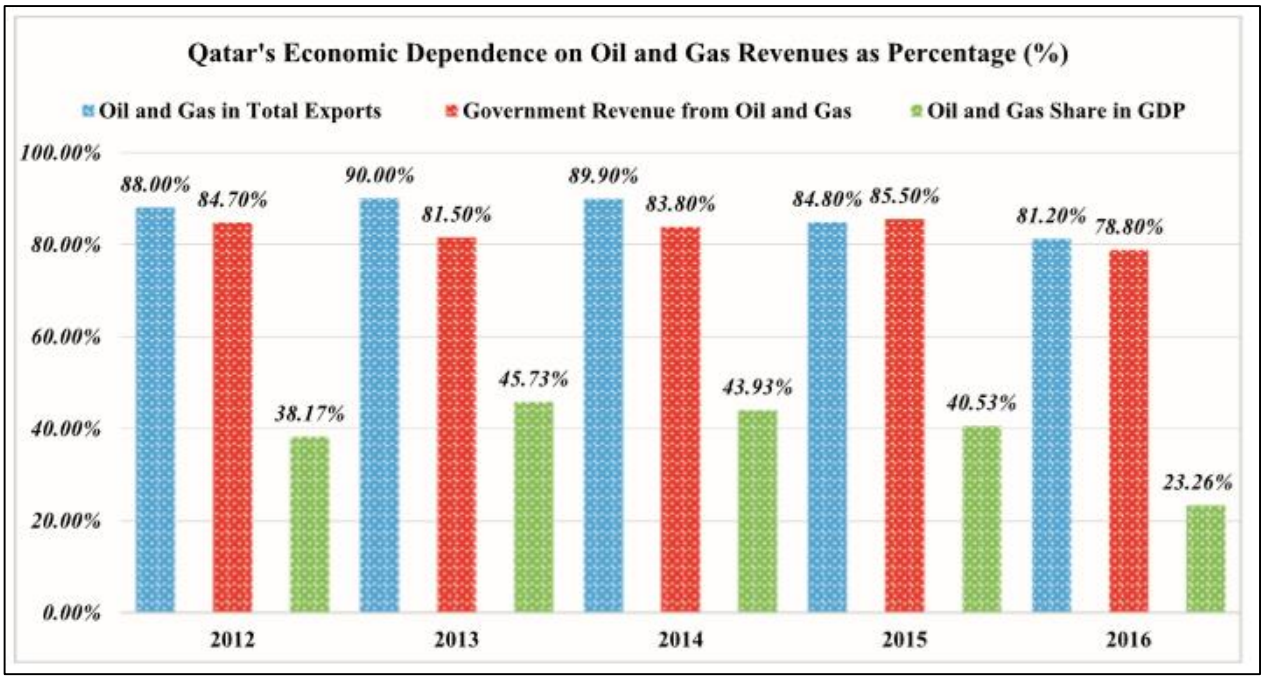


Figure 49: Qatar's sectoral breakdown of GDP (IMF, 2018 as cited in Tok, Koç & D'Alessandro, 2020).

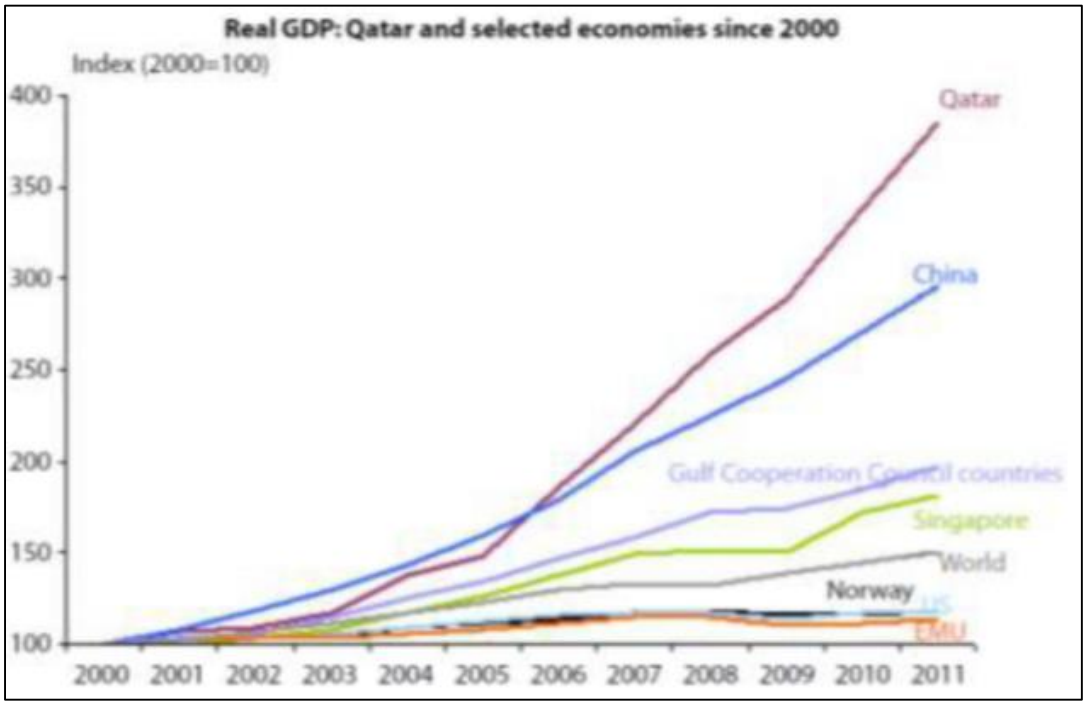


Figure 50: Real GDP growth of Qatar compared to selected countries (Ibrahim & Harrigan, 2012 as cited in Tok, Koç & D'Alessandro, 2020).

Management of oil and gas resources

Qatar is ruled by a tribal monarch which holds absolute power (Biygautane, Hodge & Gerber, 2018). The state-controlled Qatar Petroleum's Qatargas and Rasgas subsidiaries manage the LNG sector and also engage in joint ventures with international partners (Ritz, 2019). According to the Investment Law 13/2000, foreign investment is limited to 49% of capital with a local partner holding 51%, however, there can be 100% foreign ownership in certain sectors (Biygautane, Hodge & Gerber, 2018).

Oil and gas revenues have been invested in both the international and domestic assets outside the energy sector (Tok, Koç & D'Alessandro, 2020). Rents are invested in the Qatar's sovereign wealth fund, which is controlled by the Qatar Investment Authority (QIA) and worth in excess of US$100 billion as of February 2014 (Crist, 2014). The Qatar sovereign wealth fund is thought to be the world's largest with the objective of achieving revenue diversification in the next 10-15 years (El-Kharouf, Al-Qudsi & Obeid, 2010).

On indicators of governance, Qatar ranked poorly on voice and accountability but is one of the highest-ranking Gulf States in terms of Rule of law, Regulatory quality, Control on corruption and Government effectiveness, as shown in Table 21 (Biygautane, Hodge & Gerber, 2018). On the World Bank's ranking on ease of doing business (Table 22), Qatar ranked high on the Resolving Insolvency indicator (51/189), however, it ranked low on Starting a business (109/189), Enforcing contracts (112/189), Getting credit (133/189) and on Legal rights (129/140) (Biygautane, Hodge & Gerber, 2018). Although Qatar ranked highly on most indicators of good governance, generally, the Qatari environment is not easy to do business.

Despite the abundance and dependence on oil and gas, Qatar has seen exceptional economic growth and development thereby defying the

resource curse thesis. Nevertheless, it still needs to improve on its governance model and business environment.

6.4.3 Yemen

Natural resource abundance and economic growth

Oil reserves in Yemen stood at about three billion barrels as of 2012 and production commenced in 1984. Production of natural gas commenced in 1993 with a proven reserve of 16.9 trillion cubic feet (Al-Iriani, 2012). Oil rents contribute the largest share to GDP than manufacturing and agriculture, as shown in Figure 51 indicating an economy dependent on oil resources.

Yemen is among the poorest countries in the Arab region, only slightly ahead of war-torn Somalia, with the majority of the population living below the poverty datum line and in 2010, per capita GDP was about US$1,283 (Al-Iriani, 2012). Figure 52 shows that Yemen's Real GDP per capita growth has been declining and the adjusted national saving rate (ANSR) was mainly negative from 1990 to 2012 despite the large oil reserves. These indicators together with the low Human development index also shown in Figure 52, indicates that Yemen is resource cursed (Ansari, 2016).

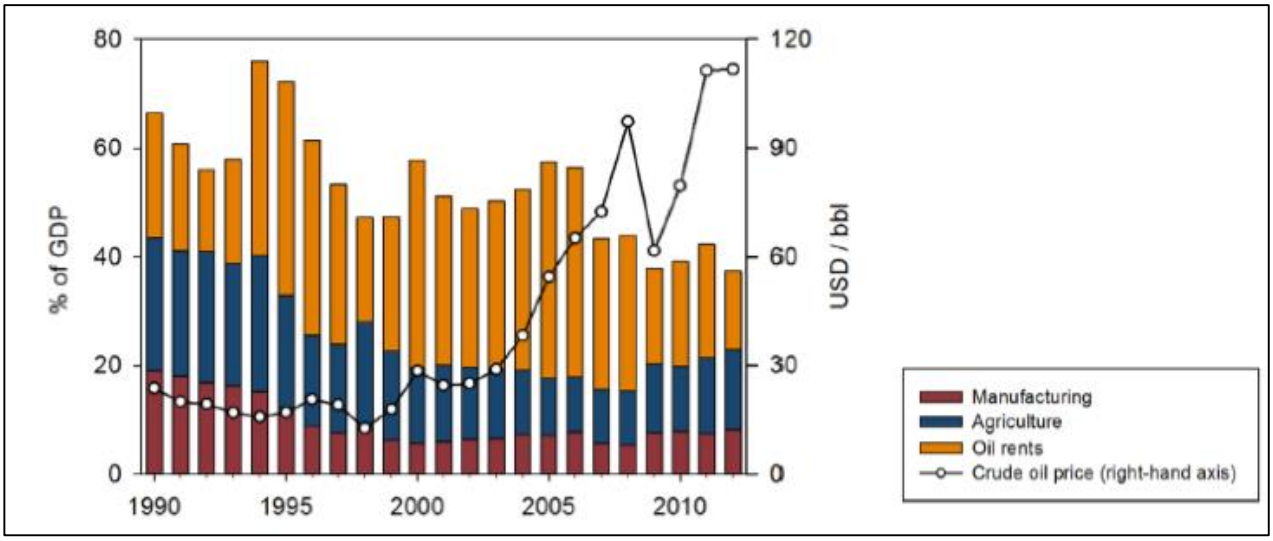


Figure 51: Sectoral contribution to GDP in reunited Yemen and the crude oil price (USD/ barrel (bbl), 1990–2012 (Ansari, 2016).

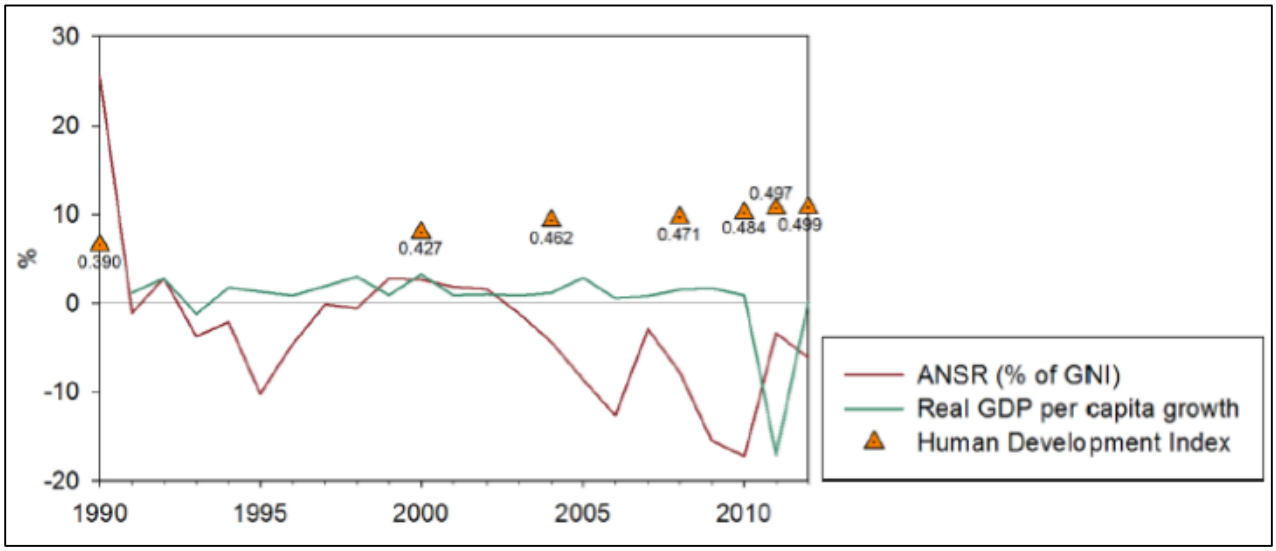


Figure 52: Real GDP per capita growth, the Human Development Index and the adjusted national saving rate (ANSR) in reunited Yemen, 1990–2012 (Ansari, 2016).

Management of oil and gas resources

Constitutional problems and institutional weaknesses in Yemen started well before the discovery and production of oil. Although a constitution based on liberal democratic principles was adopted in 1970, the political system has

been characterised by coups d'état, presidential assassinations, civil wars and increasingly autocratic and corrupt governance (Ghafarzade, 2016:939).

The oil and gas sector is managed and regulated by the state through ministries of Oil and Minerals (bidding process of exploration rights, production sharing agreements) and Finance (collection of royalties and taxes) (World Bank, 2015). Figure 53 shows the various state-owned companies in Yemen involved in upstream (Safer, PetroMasila) and downstream (Yemen Oil and Gas Company) activities (World Bank, 2015). The oil distribution is controlled by the Yemen Petroleum Company, which "is an important instrument for corruption, especially through the allocation of monopoly privileges to allies of the former president" (Ansari, 2016:451). A private international joint venture (Yemen Liquefied Natural Gas) manages the transport and liquefaction of gas with the government holding a 22% share. Through the Yemen Company for Investment in Oil and Minerals, the government also holds a 15% carried share in most private concessions (World Bank, 2015).

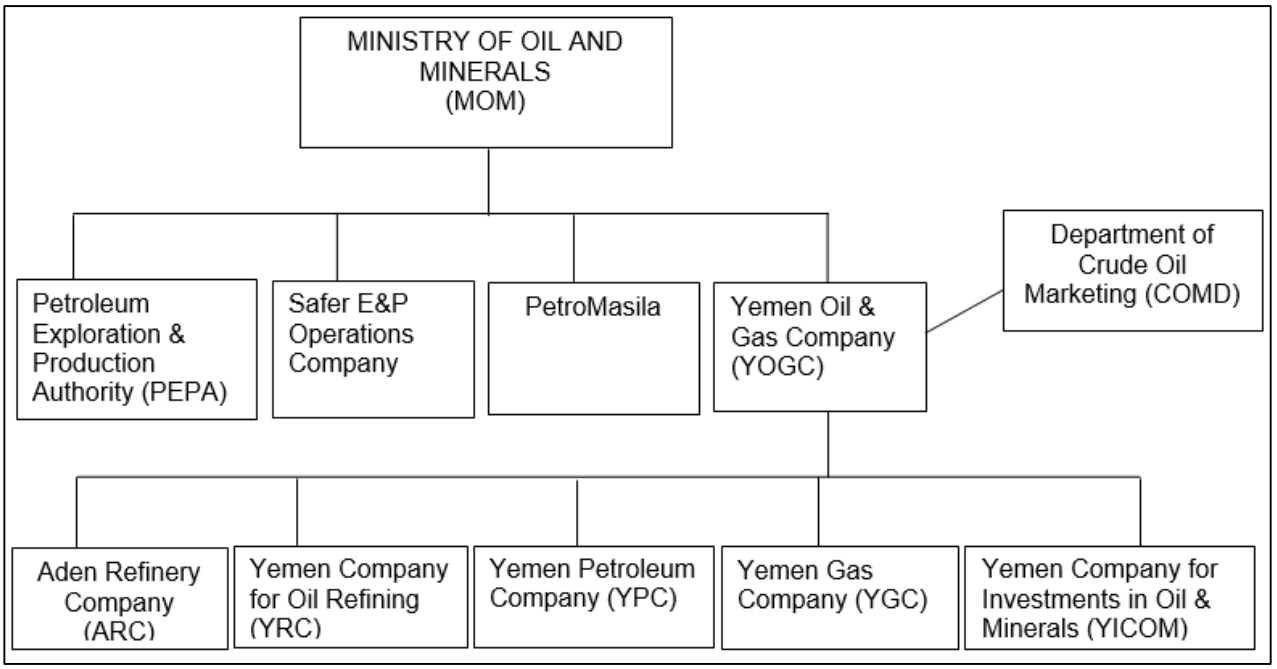


Figure 53: Yemen's Oil and Natural gas institutional structure (World Bank, 2015).

Resource rents have been used by the government to engage in corrupt tendencies, suppression of any opposition and to expand its political influence. This has fueled more conflicts and civil wars in Yemen, the breakdown of institutions and ultimately to a failed state (Ansari, 2016). Table 23 shows that Yemen ranked very low in the corruption perception index, the open budget index and the global competitiveness index in the year 2015, 2012 and 2014 respectively. This dysfunctionality in the government of Yemen (GoY) has affected the economy as a whole as shown in Figure 54 and is another classic example of a resource-cursed nation.

Table 23: Indicators of corruption and institutional quality in Yemen (Ansari, 2016).

Index	Explanation	Year	Score	Rank	Source
Corruption Perceptions Index	Rises in a corruption-free public sector	2015	18/100	154/168	Transparency International (2016)
Open Budget Index	Rises in the availability of information	2012	11/100	87/98	Open Budget Initiative (2012)
Global Competitiveness Index	Rises in a more competitive environment for development	2014	3.0/7.0	142/144	Schwab (2014)

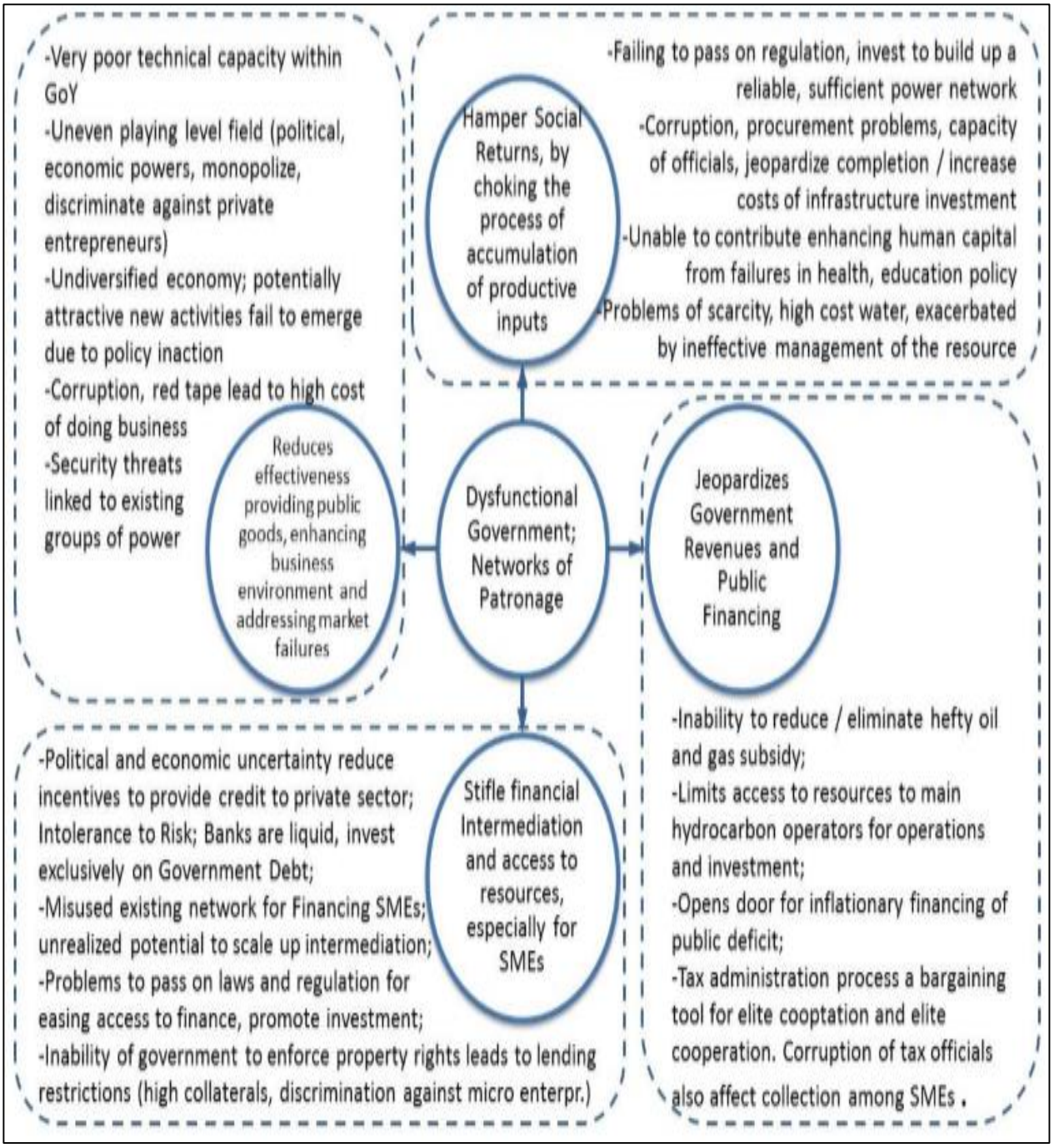


Figure 54: A summary of Yemen's dysfunctional government and effects on economy (World Bank, 2015).

6.5 Developing Countries – Asia

6.5.1 China

Natural resource abundance and economic growth

Figure 55 shows China's production of energy natural resources (Oil, Coal, Natural gas) since 1990 and it became the largest producer of energy in the world in 2005 (Zuo & Zhong, 2020). China is also the world's largest producer of REEs (Andersson, 2020).

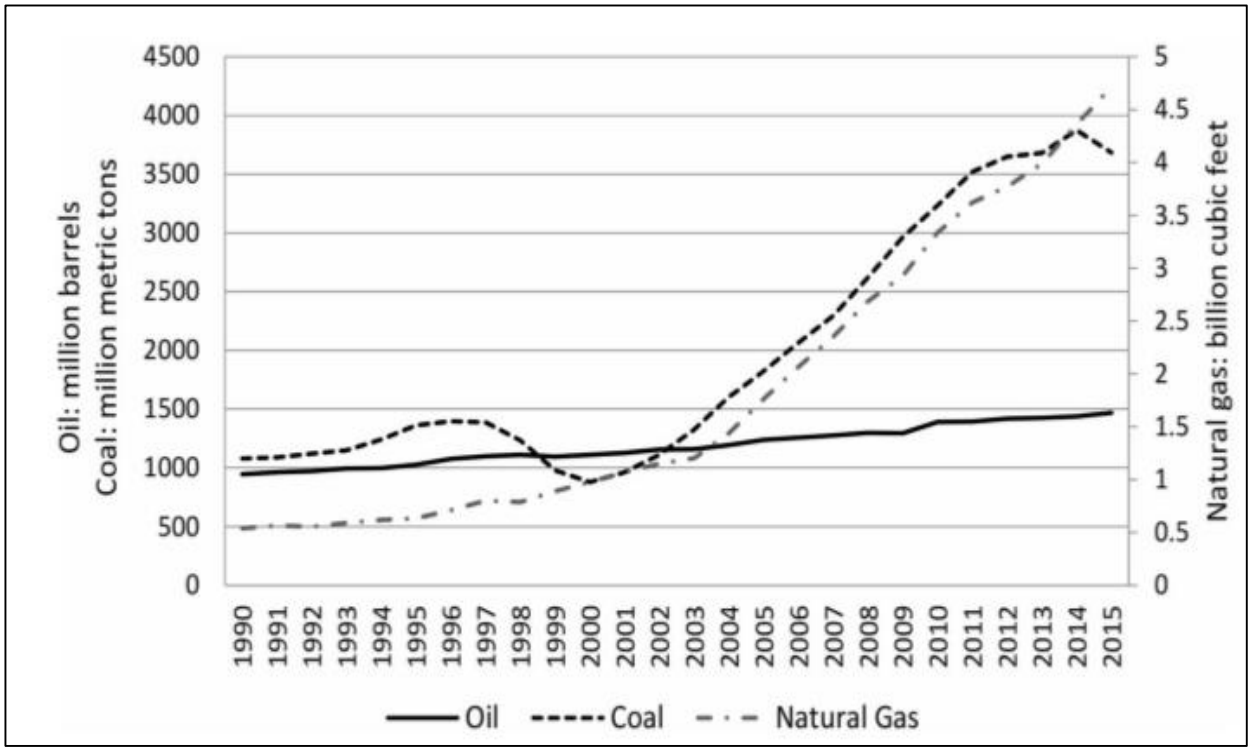


Figure 55: China's production of Oil, Coal and Natural gas from 1990-2015 (Zuo & Zhong, 2020).

China has a one-party-rule and a state-led market economy with the market reforms, which commenced in the late 1970s (Zhan, 2017). Figure 56 shows that since the introduction of economic reforms in 1979, China's economic growth rate averaged 9.6% up to 2016, however, growth started declining during the 2008 financial crisis and reached 6.8% in 2017 (Mbah & Ojo,

2018). According to Morrison (2018) (as cited in Mbah & Ojo, 2018:29), the Chinese phenomenal growth was due to “large-scale capital investment (financed by large domestic savings and foreign investment) and rapid productivity growth”. China’s success story under its authoritarian one-party rule and unique development model of a combination of elements of the neo-liberal and socialist policies has posed a challenge to the views of the relationship between governance type and economic development (Kamwengo, 2017).

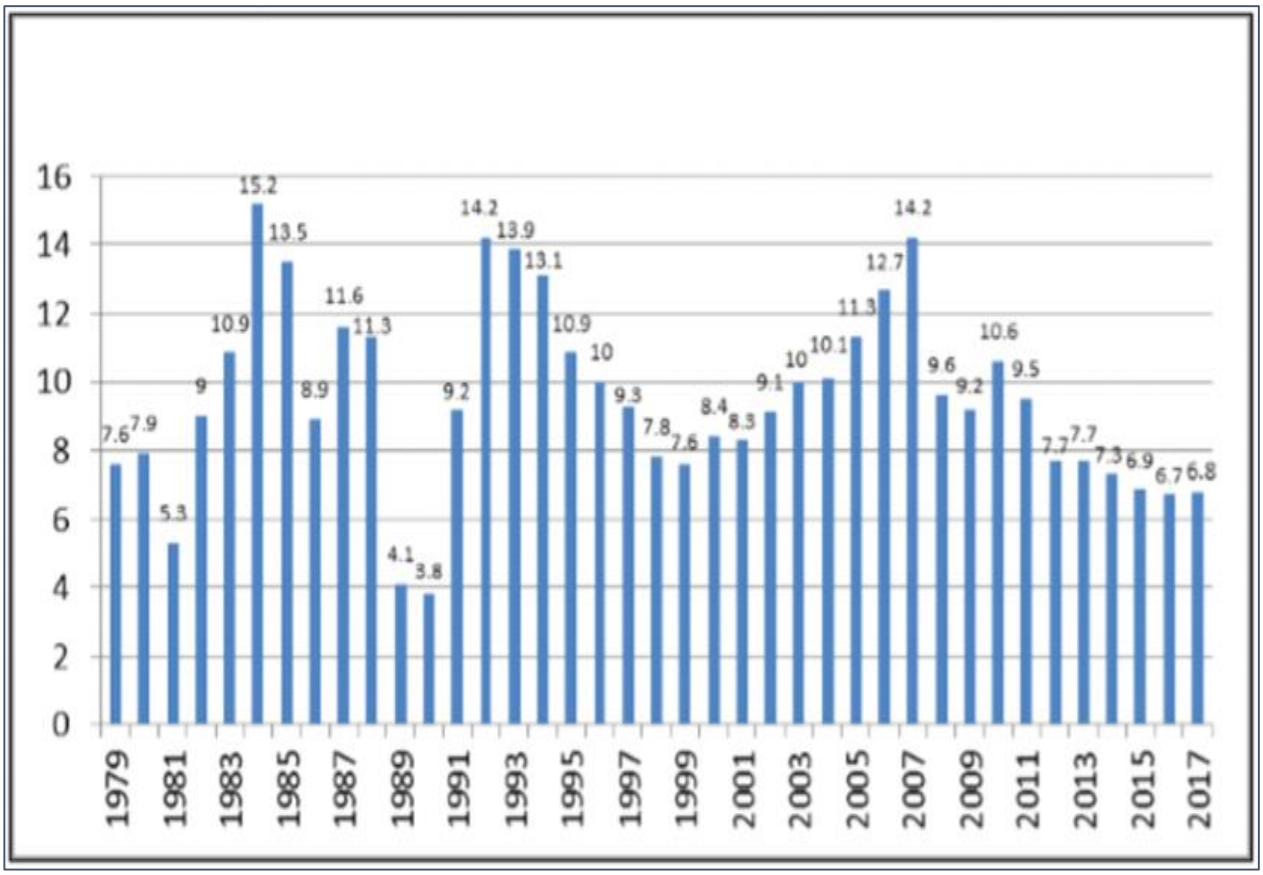


Figure 56: China’s Real GDP growth rate as a percentage (1979-2017) (Mbah & Ojo, 2018).

Management of natural resources

China has unclearly defined property rights in the resource sector and the state has monopoly on the ownership of resources and allocation of mining

rights (Zhan, 2017). The energy sector is largely managed by state-owned enterprises (SOEs) due to its strategic importance. The oil industry is dominated by two SOEs (China Petroleum and Chemical Corporation, China National Petroleum Corporation) and the coal sector by seven large SOEs (Hong, 2018).

Table 24 shows policies that were implemented in the resources sector since 1990, which include a regional policy, market price and fiscal reforms. The market price reforms involved a gradual shift from state-controlled prices to market determined prices of coal and oil with natural gas prices still being determined by the state (Zuo & Zhong, 2020). Fiscal reforms were aimed at redistribution of resource revenues between the Central and Provincial governments, as shown in Table 25, where corporate income tax is shared at a ratio of 60:40 and VAT at a ratio of 75:25 (Hong, 2018). The regional development policy of 2000, which involved large infrastructure projects in the western part of China was meant to promote exploitation of natural resources and these policy initiatives resulted in significant economic growth in China (Zuo & Zhong, 2020).

Table 24: Policies implemented in resource sector (Zuo & Zhong, 2020:2).

Time	Market Price Reform	Fiscal Reform	Regional Policy
1993	Coal price: two-track system for non-utility coal and power coal		
1994		Adopted a tax-sharing system between central and provincial government with increased share of the central government in the total government revenue; Private mining rights allowed for small- scale mines.	
1998	Crude oil price linked to the international price		
2000			Large-Scale Development Strategy for the Western Region (12 provinces or equivalent) (1) infrastructure to transfer electricity, water, and gas from western to east (2) railroad construction
2003	Coal price: abolished its guidance price for power coal and set price bands for negotiations between coal producers and electricity generators		
2010	Increase natural gas wellhead price by 230 ¥/m^3, making it as 1,150 ¥/m^3 (about 4.68 US$/$ft^3$)		
2011		Installed an ad valorem resource tax of 5% on oil and natural gas, instead of taxes levied on extracted volume since 1985	

Table 25: 1994 Fiscal Reforms in China (Zuo & Zhong, 2020:5).

	Central - Province split ration (n%: n %)	**Share over the total tax revenue from mining industry in 2015 (%)**
Value-Added Tax	75 : 25	49.27
Income Tax	60 : 40	24.33
Resource Tax	Onshore resources 0 : 100 Offshore resources 100 : 0	15.88
Resource Compensation Fee	50 : 50	

Despite the high economic growth experienced by China, it is among the highest corrupt nations in East-Asia as shown in Figure 57 and there are no political rights and civil liberties (Figure 58) (Gill & Kharas, 2007). Thus, China has managed to escape the resource curse due to its prudent policies but still needs to improve on issues of governance.



Figure 57: Corruption perceptions index of Transparency International and the Kaufmann-Kraay control of corruption index across East-Asia (Gill & Kharas, 2007).

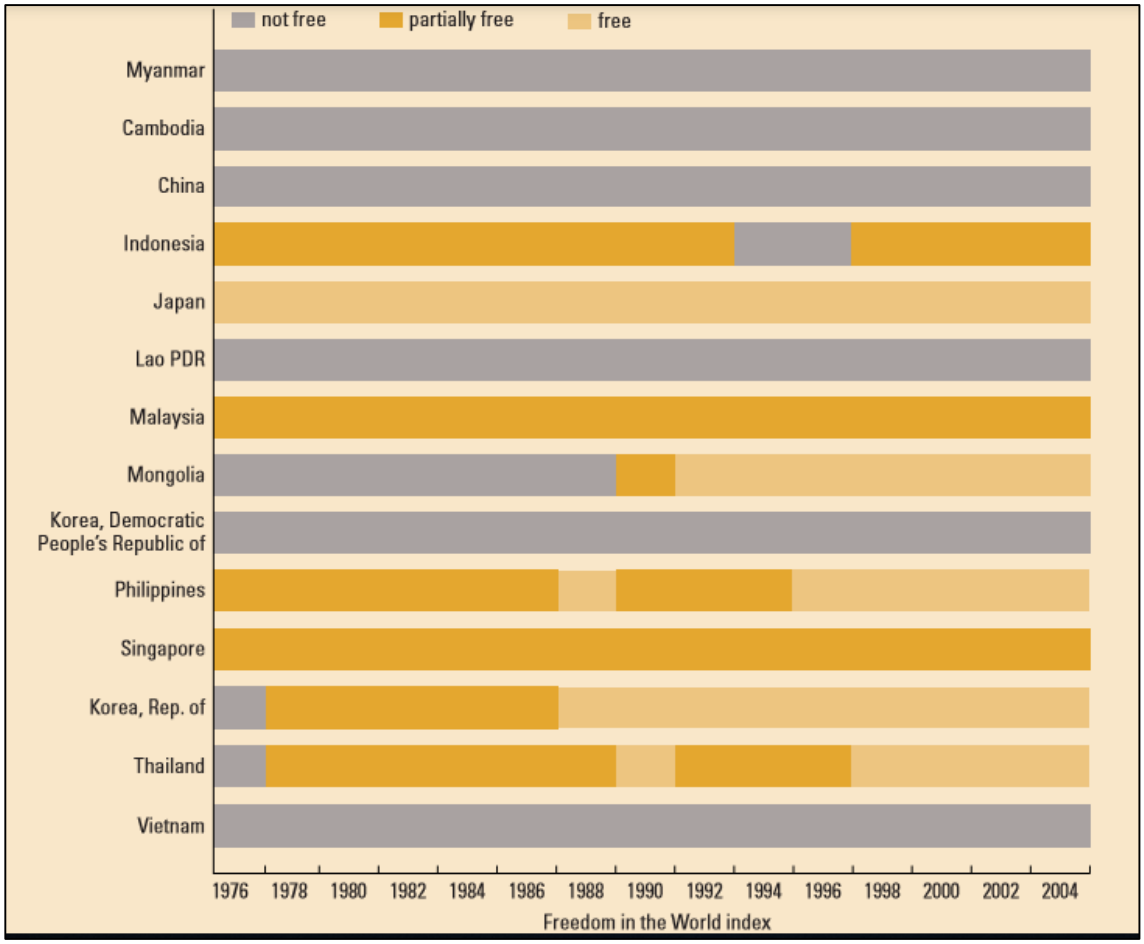


Figure 58: Political rights and Civil liberties in East Asia, 1976–2004 (Gill & Kharas, 2007).

6.5.2 Malaysia

Resource abundance and economic growth

According to Doraisami (2015), Malaysia has abundant reserves of hydrocarbons, which amount to 5.5 billion barrels of oil and 88 trillion cubic feet of natural gas. It is the second largest exporter of LNG in the world and the second largest producer of oil and gas in Southeast Asia (Badeed, Lean & Smyth, 2016). Over the years, Malaysia has promoted primary commodity export diversification resulting in it being also a major exporter of rubber, tin and palm oil (Kaznacheev, 2013).

Soon after Independence (1957), Malaysia adopted import-substitution policies, which were pursued until the late 1960s and abandoned as the

policies could not result in the desired level of industrialisation (Tan, 2014). From 1970 to 1990, Malaysia implemented a mixture of state interventionist and market-led policies under the export-oriented growth strategy guided by five-year development plans (Lee & Chew-Ging, 2017).

The government liberalised the economy, promoted diversification to cushion the economy from commodity price volatility, encouraged high savings rates, subsidised infrastructure development and provided tax incentives to attract foreign direct investment (Stevens, 2006). In addition, the government also introduced local content policies in the petroleum sector and "fiscal incentives are also provided to oil companies and suppliers if they contribute to the local economy through industrial linkages and knowledge transfer" (Lebdioui, 2020:343). The government invested heavily (between 5% and 6% of the nation's GDP) in human capital by providing education at all levels to its people (Tan, 2014).

This led to rapid economic growth as shown in Figure 59, with average annual growth rates from 1961 to 2014 ranging between 5% and 10% (Lee & Chew-Ging, 2017). In 1970, Malaysia's real GDP per capita was about US$1,160.3, by 2010, it had increased to about US$6,050 and it became a middle income country in 1992 (Tan, 2014). There was a significant reduction in poverty from 75% at independence (1957) to 49.3% in 1970 and to a mere 1.7% in 2012 (Doraisami, 2015). Due to the government's diversification efforts from primary commodities (agriculture and mining) to manufacturing, the contribution of manufactured exports to total exports increased from 11.9% in 1970 to 75.4% in 2011 (Tan, 2014).

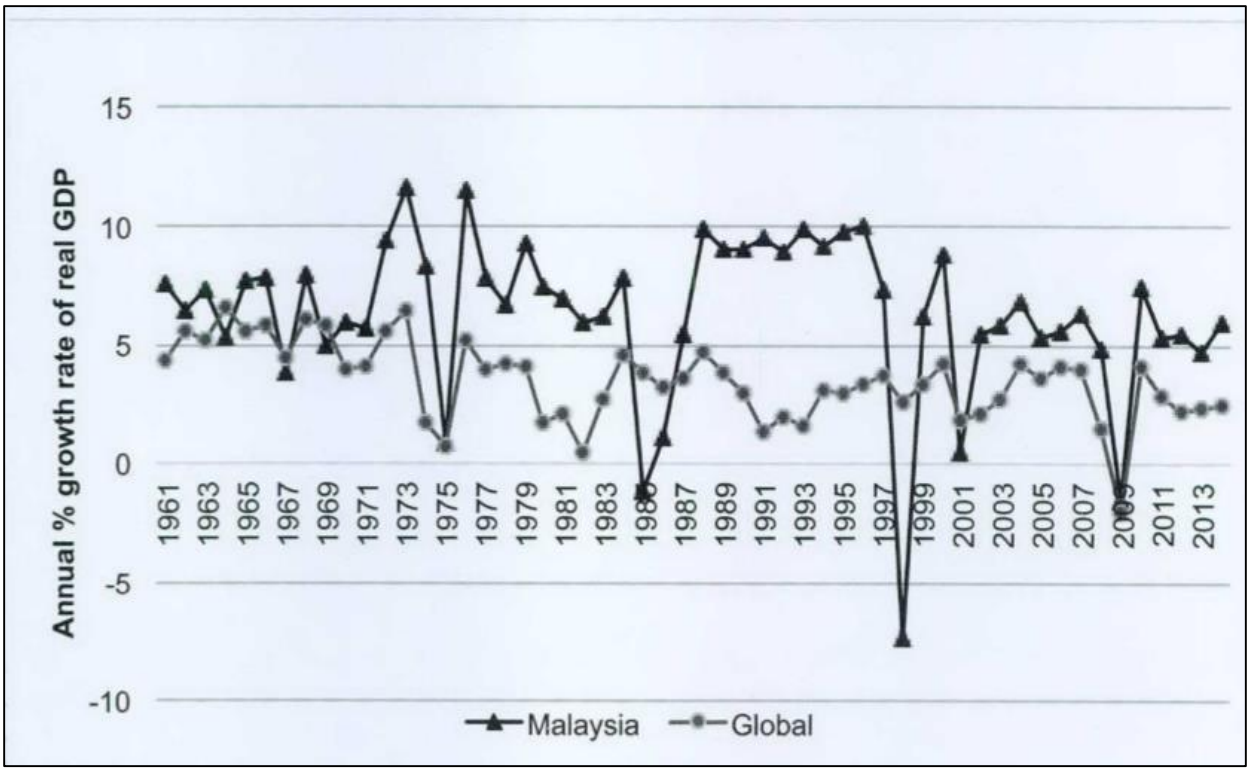


Figure 59: Malaysia's real GDP growth compared to Global economy, 1961-2014 (Lee & Chew-Ging, 2017).

Although Malaysia has attained a middle-income status, it is now showing signs of the middle-income trap. This is due to "diminishing returns to physical capital, exhaustion of cheap labor, exhaustion of imitation gains, insufficient quality of human capital, poor contract enforcement and intellectual property protection, distorted incentives, misallocation of talent, lack of advanced infrastructure, lack of access to finance and to entrepreneurial risk capital in particular" (Harrison, Scheela, Lai & Vivekarajah, 2018:970).

Management of petroleum resources

The state owns petroleum resources and controls the exploration and production through two National Oil Companies (NOC) namely Petronas (established 1974) and Malaysia Petroleum Resources Corporation (MPRC) (established 2011) (Doraisami, 2015). Apart from the regulatory role, Petronas is involved in both the upstream and downstream petroleum activities domestically and internationally and operate in 32 countries (Lebdioui, 2020). Private companies operate through production sharing

agreements, where Petronas would have a carried interest of 15-25% (Kaznacheev, 2013).

Transparency in the petroleum sector is questionable as Petronas reports directly to the Prime Minister, the utilisation of revenue and oil contracts are not disclosed to the public (Lee, 2013, as cited in Doraisami, 2015). However, according to Lopez (2012) (as cited Doraisami, 2015:102), Petronas has managed Malaysia's petroleum resources well and "can be held out as a strong model for other NOC's looking for templates on how best to manage a nation's natural resource". Figure 43 above shows that, overall Malaysia has strong institutions as measured by control of corruption, rule of law, political stability, regulatory quality and government effectiveness. However, it performed poorly on voice and accountability index (Figure 43). This mix of authoritarianism and democratic-style institutions made Malaysia to be classified as a competitive authoritarian regime with undemocratic practices during the electoral process (Pepinsky, 2007).

Resource rents are managed by Petronas and are deposited in several sovereign funds (Khazanah Nasional Berhad, Permodalan Nasional Berhad, the Employees Provident Fund) as a way of avoiding the Dutch Disease and hedge against commodity downturns (Kaznacheev, 2013). Although generally well-managed, oil revenues were often used for political mileage, suppressing the opposition, bailing out businesses of politicians and creation of high level of public employment (Doraisami, 2015).

Malaysia's narrative indicates a resource-rich nation that has defied the resource-curse thesis. However, like China it still needs to improve on some issues of governance.

6.5.3 Indonesia

Natural resource abundance and economic growth

Indonesia has the largest reserves of oil, natural gas, coal and minerals in south-east Asia with a long history of natural resource extraction, which started with oil exploration in 1871 when it was a colony of Netherlands (Hilmawan & Clark, 2019). Indonesia had an average of 5% growth rate over three decades (1965-1979) and an even higher growth rate of 7% in the late 1980s and early 1990s (Gellert, 2010). Table 26 shows Indonesia's economic growth indices. Within a period of 15 years (1990-2004), the Indonesian economy was diversified from dependency on oil to competitive manufacturing (Auty, 2009). Table 27 shows Indonesia's declining dependency on oil (Fuel) and increasing share of manufacturing as compared to Venezuela's highly dependency on oil throughout the years.

Table 26: Economic growth indices for Indonesia (1965–2004) (Auty, 2009).

	1965–1969	1970–1974	1975–1979	1980–1984	1985–1989	1990–1994	1995–1999	2000–2004
Indonesia								
Per capita GDP (US$2000)	203.5	261.3	335.3	429.0	516.9	692.7	832.1	848.1
Population growth (% per yr)	2.3	2.4	2.3	1.9	1.8	1.6	1.4	1.3
GDP (% per yr)	4.9	8.2	7.4	6.7	6.1	8.0	1.7	4.6
Per capita GDP (% per yr)	2.5	5.6	5.0	4.7	4.2	6.2	0.3	3.2

Table 27: Changing export composition (% total) for Venezuela and Indonesia (1965–2004) (Auty, 2009).

	1965–1969	1970–1974	1975–1979	1980–1984	1985–1989	1990–1994	1995–1999	2000–2004
Venezuela								
Agriculture	1.2	1.5	0.9	0.6	2.1	2.7	3.1	1.5
Fuel	92.9	92.2	93.6	94.1	81.9	79.4	77.9	83.3
Ore	4.6	4.7	3.9	3.0	7.2	6.4	5.0	3.4
Manufacturing	1.2	1.5	1.5	2.3	7.4	11.6	14.0	11.7
Indonesia								
Agriculture	50.5	43.7	31.2	15.0	21.0	16.1	22.6	15.3
Fuel	41.3	48.9	63.5	76.4	50.0	34.1	23.6	23.7
Ore	6.6	6.0	3.5	3.5	5.2	4.1	5.1	5.7
Manufacturing	1.6	1.4	1.8	5.1	23.8	45.7	48.7	55.3

Although it was under authoritarian rule, Indonesia had “all the characteristics of a developmental state”, favoured a market-based development model and used able technocrats in the management of the economy (Stevens, 2006:12). The government implemented policies for macro-economic management, control of rent seeking and rent distribution to the majority of the rural population (Auty, 2009). These successes were due to improvement in government effectiveness and in ease of doing business. According to the Economic Freedom (2018) (as cited in (Warburton, 2018), Indonesia has been classified as a moderately free country ranking 69th as the freest nation out of 180 nations and ranked 72nd on the easy of doing business survey.

Management of natural resources

Soon after independence in 1945, Indonesia nationalised its gas and oil sectors and management of the sector was by the Indonesia Oil Company (Hilmawan & Clark, 2019). From 1966 to 1998, Indonesia was under military rule (Suharto’s rule), however, foreign direct investment and liberalisation of the economy was encouraged, which resulted in significant foreign aid from western nations, Japan and the World Bank (Gellert, 2010). Under the new national oil company (PERTAMINA), oil exploration and production increased (Hilmawan & Clark, 2019). In order to promote beneficiation of minerals, Indonesia temporarily banned the export of unprocessed minerals in 2014 (Warburton 2018).

Resource revenues were used to strengthen the tradable sectors (agricultural and manufacturing) during periods of commodity price booms, so as to escape the Dutch disease and funding of social sectors (Schools, Hospitals) (Gellert, 2010). The building of primary schools saw the primary school enrolment increasing from 60% in 1973 to about 90% in 1983 (Mugerwa & Suzman, 2015).

Although Indonesia implemented policies to control rent-seeking, Figure 57 shows that Indonesia was one of the most corrupt countries in East Asia. According to Gill and Kharas (2007:315), the "president of Indonesia between 1967 and 1998, embezzled between US$15 billion and US$35 billion". After the economic decline especially after the 1997-1998 Asian financial crisis, the authoritarian rule was replaced in 1998 by a democratic, decentralised governance system of provincial and district level (Hilmawan & Clark, 2019). Fiscal decentralisation of resource rents was implemented in 2001 under the revenue sharing law (Law25/1999) in which "resource revenues were to be first collected by the central government, then redistributed to districts such that extracting districts receive a larger share of revenues" (Hilmawan & Clark, 2019:5). This was further revised in 2004 as shown in Table 28.

Table 28: Summary of resource revenue allocation under the revised revenue sharing (Law33/2004) (Hilmawan & Clark, 2019).

No	Type of Natural Resources	The Law of 33/2004		
		Central Government (%)	Province Government (%)	District Government (%)
1	Oil	85	15[a] or 15[a]	
2	Natural gas	70	30[a] or 30[a]	
3	Coal and other minerals (Land rents)	20	16	64
4	Coal and other minerals (Royalties)	20	16	32
	[a] For oil wells 4–12 miles offshore the 15% is allocated to the province, of which 5% ultimately stays with the province, and 10% goes to all districts within that province. For oil wells less than 4 miles offshore the 15% is allocated to the nearest district, of which 12% ultimately stays with the district, and 3% returns to the corresponding province. For natural gas wells 4–12 miles offshore the 30% is allocated to the province, of which 10% remains and 20% goes to all districts within the province. For gas wells less than 4 miles offshore the 30% is allocated to the nearest district, of which 24% remains with that district, and 6% goes to the corresponding province.			

Indonesia's experiences indicate a resource-rich nation that has escaped the resource curse. These experiences are similar to other developing resource-rich nations that have managed to escape the resource curse like Chile, China, Malaysia and Qatar.

6.6 Developed Countries

6.6.1 Australia

Natural resource abundance and economic growth

According to Geoscience Australia (2011) (as cited in Penney, Melanie, Stark & Sheales, 2012), Australia has the largest economic resources in the world of nickel, uranium, brown coal, zinc, lead, silver, rutile and zircon, as shown in Table 29. In addition, it is among the leading five exporters of coal, bauxite, iron ore, alumina, zinc and liquefied natural gas in the world (Parker & Cox, 2020). The discovery and the subsequent high production volumes of minerals in Australia was attributed to its policies of investment in gathering of basic geoscientific data and its accessibility to the public (Penney, Melanie, Stark & Sheales, 2012). Mineral resources contribute 12% to GDP and constitute 70% of the value of exports (Kaznacheev, 2013). Figure 60 shows Australia's real GDP growth rate, which averaged about 4% from 1994 to 2018 and driven by the resources sector.

Table 29: Australia's mineral production and economic demonstrated resources (EDR), 2009 (Penney, Melanie, Stark & Sheales, 2012).

		Australia in world EDR			Australia in world mine production			Australia's EDR to production ratio*
			Rank	Share		Rank	Share	
	Unit	EDR	No.	%	Volume	No.	%	Years
Bauxite	Mt	6200	2	23.0	65.8	1	34.1	94
Black coal	Mt	43800	5	7.0	335.2	4	5.7	131
Brown coal	Mt	37100	1	25.0	64.0	5	7.6	580
Copper	Mt	80.4	2	13.0	1.0	6	6.0	85
Gold	t	7399	2	12.3	224.0	2	8.7	33
Iron ore	Mt	28000	2	17.0	394.4	1†	24.8	71
Lead	Mt	30.8	1	36.0	0.5	2	13.6	59
Manganese	Mt	181	4	13.0	4.4	2	14.4	41
Mineral sands								
Ilmenite	Mt	200.4	2	16.0	1.6	3	15.7	129
Rutile	Mt	22.7	1	49.0	0.3	1	48.2	79
Zircon	Mt	40	1	46.0	0.4	1	39.3	96
Nickel	Mt	24	1	35.0	0.2	4	12.3	145
Silver	kt	70.3	1	16.0	1.6	4	7.8	43
Tin	kt	176	8	3.0	13.3	5	4.3	13
Uranium	kt	1223	1	46.0	8.5	3	16.7	144
Zinc	Mt	58.4	1	25.0	1.3	3	11.2	46

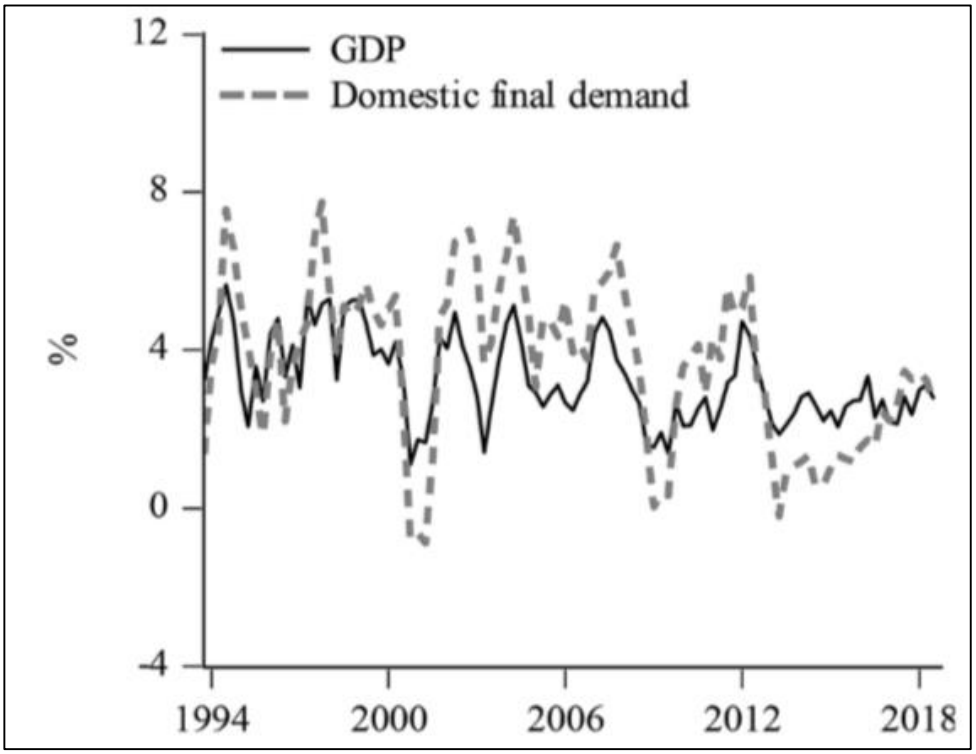


Figure 60: Australia's Real GDP (1994-2018) (Nguyen & Wang, 2019).

The resource-based economic development in Australia was consistent with the linkage theory and the resource-based diversification model as shown in Figure 23 above. Table 30 shows the development of resource-based industries in Norway and Australia (Ville & Wicken, 2012). In Australia, linkages were developed between the resource sector and other sectors of the economy where "the resource based sectors have functioned as drivers of knowledge development in other sectors, which have become enabling sectors diffusing technology to many parts of the economy. In addition, enabling sectors have supported the development of new resource based sectors" (Ville & Wicken, 2012: 13). This was mainly through capital goods and business service providers and scientific research institutions developing technologies, scientific knowledge and technical equipment for resource-based industries, which improved efficiency (Ville & Wicken, 2012). This has made Australia an innovation and technological leader in mining and exporting these technologies to the rest of the world (Kaznacheev, 2013). Kaznacheev (2013) further noted that the strong political, economic and social institutions in Australia have enabled it to sustain a highly diversified economy and avoid the resource curse.

Table 30: Development of resource-based industries in Norway and Australia (Ville & Wicken, 2012).

Period	Australia	Norway
–1850	Sealing and whaling	Fisheries
	Pastoral land boom: wool	Timber
	Coal mining	Mining
1850–1900	Gold mining	Wood processing
	Wheat	
	Sugar	
1900–1950	Refrigerated food	Electricity (from 1900)
	Sugar by-products	Metals
		Fertilisers
		Mining (1880–1920)
1950–2000	Oil (1950s)	Frozen fish (1950s)
	Rutile/ilmenite (1950s, 1960s)	Fish oil/meal (1950s)
	Aluminium (1960s)	Electricity—metals (1950s, 1960s)
	Natural Gas (1970s)	Oil (1970s)
	Uranium (1980s)	Fish farming, marine resources (1980s)
	Fish farming (1990s?)	Natural gas (1990s, 2000)
	Coal seam gas (1990s)	
	Liquid Natural Gas (2000)	

Management of natural resources

Australia has followed a neo-liberal model of development of the mining sector characterised by high levels of foreign ownership and control, strong state-resource firms alliances and high state intervention (Parker & Cox, 2020). The state provides extensive infrastructure (electricity generation, ports and harbor) as a way of de-risking of mining investment. Australia has a liberal and transparent system of mineral licensing and permits, where property rights of mineral licence-holders are secure (Kaznacheev, 2013). The establishment of organisations such as the Commonwealth Scientific and Industrial Research Organisation (CSIRO) in 1949 in Australia for carrying out scientific research and geological surveys using high-technologies resulted in increased discoveries of mineral resources (Ville & Wicken, 2012).

6.6.2 Norway

Resource abundance and economic growth

Norway is a major player in the oil and gas industry, accounts for 5% of the crude market in the world, producing about two million barrels of oil and 99.3 billion standard cubic metres (scm) of gas per day (Hunter, 2014). Norwegian petroleum resources are estimated to be 86 billion barrels of oil equivalents (Norwegian Petroleum Directorate as cited in Holden, 2013). Figure 61 shows the historical production and forecasts of oil, gas and LNG. The Petroleum industry is crucial to the Norwegian economy as it accounts for 47% of total exports, contributes 26% to state revenue and 21% to GDP (Hunter, 2014). However, despite these figures that point to a resource-dependent nation, Norway's economy is dominated by the services industry in which 60% of its GDP is contributed by tertiary activities (Larsen, 2005).

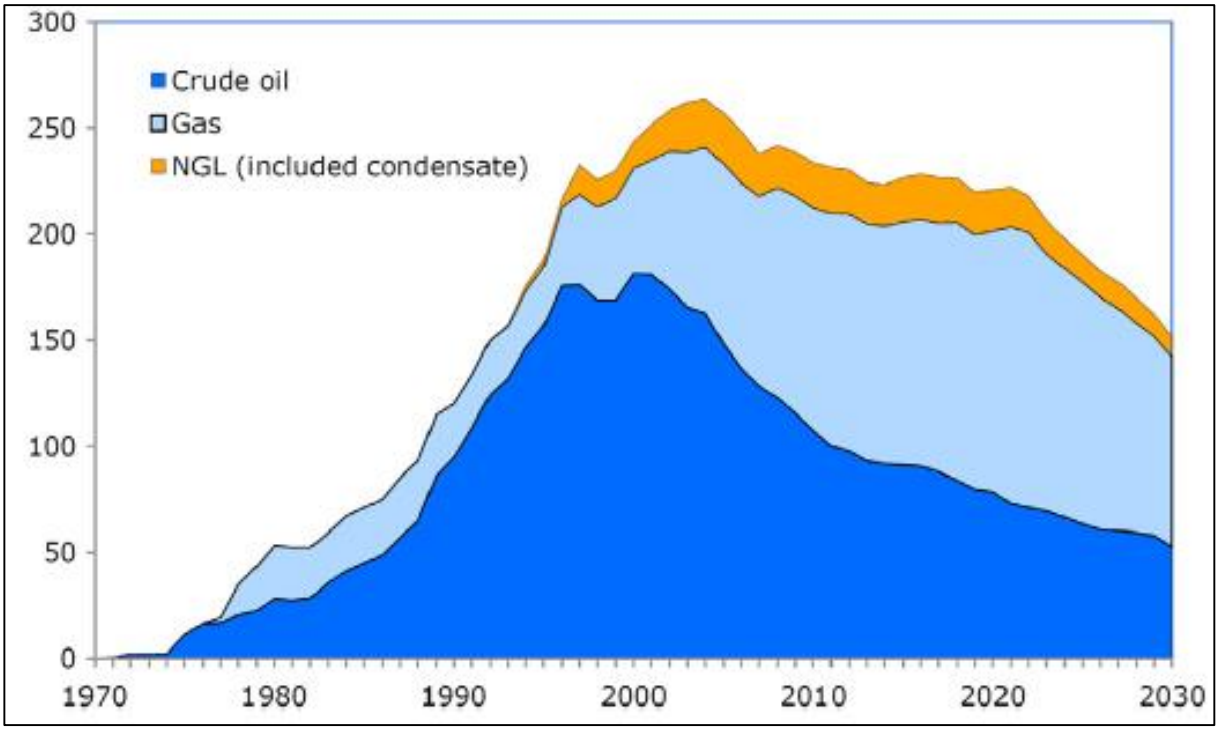


Figure 61: Historical production and forecasts of oil, gas, Natural gas liquid (NGL) in million Sm^3 o.e (standard cubic metres of oil equivalents) (as cited in Holden, 2013).

Before the discovery of oil resources in 1969, Norway's GDP per capita was lower than that of its neighbours (Denmark and Sweden). After the discovery of oil, its GDP per capita continued to rise and became higher than that of Denmark and Sweden from the early 1980s, as shown in Figure 62 (Larsen, 2005). In 2013, its Human Development Index was 0.944 (high human development), it had the lowest inequality level with a Gini coefficient at 25.8 and unemployment rate at 3.5% (Norwegian Ministry of Petroleum and Energy, 2014 as cited in Onditi, 2019). Gylfason (as cited in Larsen, 2005) considered Norway as a classic example of a country that has avoided the resource curse. If its GDP per capita had slowed or became negative after the discovery of oil, Norway would have suffered a resource curse according to Sachs and Warner's definition.

Similar to Australia, Norway was able to avoid the resource curse through development of linkages between the resource sector and other sectors of the economy. The resource sector "expanded and diversified by developing

new technologies that draw upon and contribute to learning and knowledge broadly across the economy" (Ville & Wicken, 2012:27). The Norwegian government made it a policy for the companies in the resources sector to be innovative and engage in research with collaboration with Norwegian universities and research institutions (Ville & Wicken, 2012).

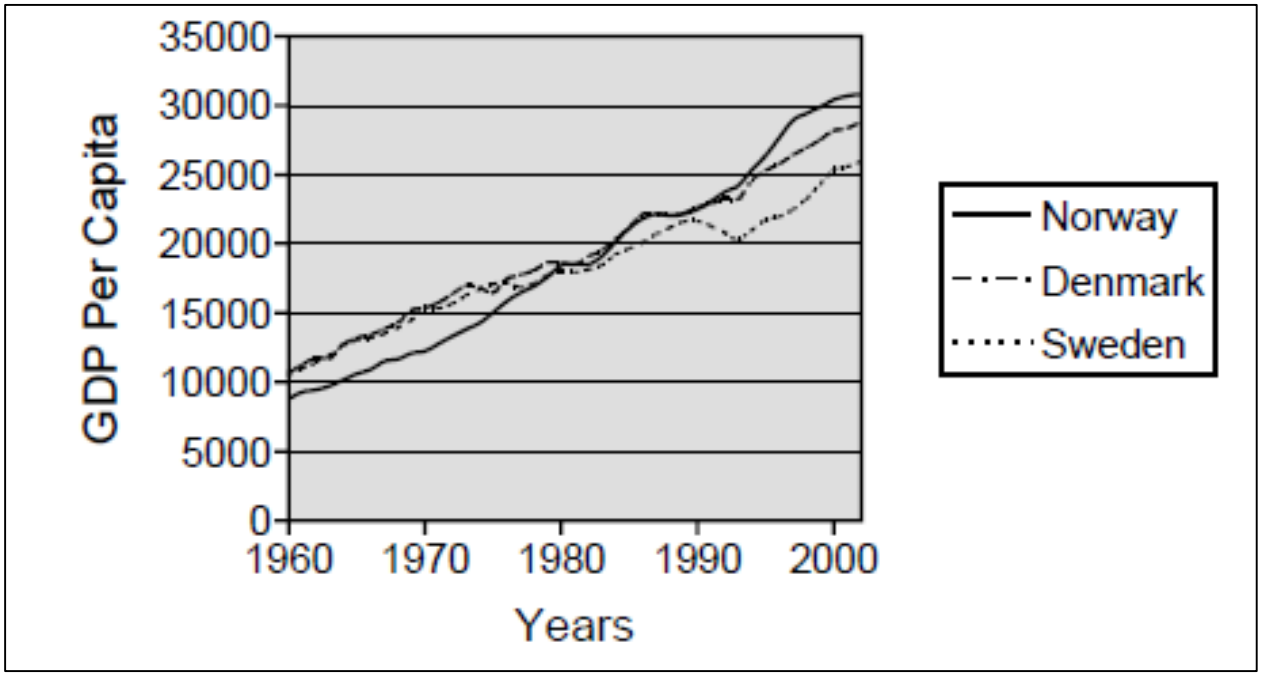


Figure 62: GDP per capita for Norway, Denmark and Sweden (1960–2002), USA 1999 dollars, PPP (Larsen, 2005).

Management of natural resources

Since the end of the World War II, Norway was considered a capitalist economy, but with high levels of state intervention with the state being the sole owner of natural resources (Ramírez-Cendrero & Wirth, 2016). The government controls about 60% of petroleum (oil and gas) production through state-owned enterprises (Statoil and Petoro) (Kaznacheev, 2013). The administration of petroleum resources is done through three entities, each with a different function to improve efficiency (Ramírez-Cendrero & Wirth, 2016):

- The commercial function is performed by Statoil, which is the national oil company;
- The Norwegian Petroleum Directorate (NPD) performs the technical and advisory roles including the granting and management of exploration and production licences;
- The executive tasks such as implementing laws approved by parliament and setting the goals of the sector are performed by the Ministry of Petroleum and Energy; and
- In addition, another entity owned by the state called State Direct Financial Interest (SDFI), is responsible for investments.

According to Torres (2015) (as cited in Onditi, 2019), the existing stable, transparent and democratic political environment in Norway before the discovery of oil helped to set up these institutions and their good quality was reinforced with the implementation of the Extractive Industry Transparency Initiative (EITI). Figure 43 above shows that Norway performed well on all measures of good governance (control of corruption, government effectiveness, rule of law, political stability, regulatory quality).

Petroleum revenue streams consist of corporate tax (27%), special tax (51%), Statoil dividends, royalties, SDFI net income and environmental taxes as shown in Figure 63. A system of tax deductions and amortisations are provided as incentives to encourage investment in the extractive industry. All collected revenues are invested offshore in the Government Pension Fund Global, which was established in 1990 and functions both as a sovereign wealth fund and a revenue stabilisation fund (Ramírez-Cendrero & Wirth, 2016). An additional policy called the “4% fiscal rule” was implemented to limit public spending only to profits from the fund that are estimated at 4% per year (Larsen, 2005). The Fund controls about one percent of the world’s publicly traded shares and is about 1.5 times the GDP of Norway (Kaznacheev, 2013:61).

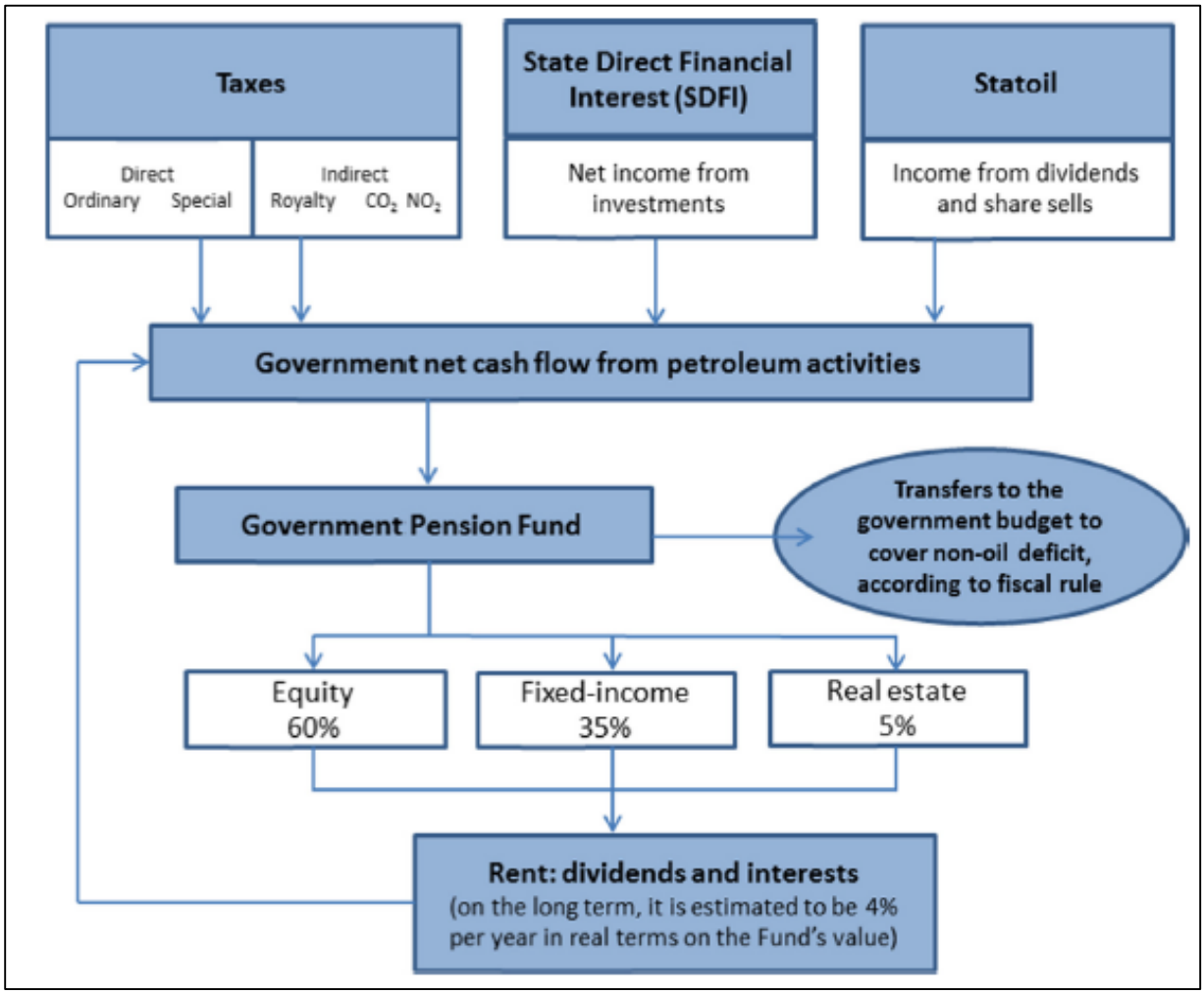


Figure 63: Norwegian sources of petroleum rent and utilisation of the rents (Ramírez-Cendrero & Wirth, 2016).

6.6.3 Canada

Resource abundance and economic growth

Canada has abundant mineral resources. Table 31 shows Canada's top commodity exports by value, which include crude oil, gold, petroleum gases, aluminum and potash (Olewiler, 2017). Mineral exports contribute about 35% to total exports and around 10% to GDP as shown in Table 32 (Zubikova, 2018).

Table 31: Leading Canadian commodity exports, 2015 (Olewiler, 2017:929).

Commodity	**Export Value (US$ billion)**
Crude oil	64.1
Gold	15.9
Petroleum gases	11.7
Lumber	9.0
Wheat	7.9
Potash	6.9
Aluminum	6.6
Chemical wood pulp	5.8
Canola	5.0
Value of all exports	**523.4**

Table 32: Canada's export of natural resources (million United States Dollars - mil. USD) (Zubikova, 2018).

Year	Export of merchandise, (mil. USD)	Export of natural resources, (mil. USD)	Share of natural resources in export of merchandise, (%)	GDP (current prices, mil. USD)	Export of natural resources/GDP, (%)
2000	277420	67290	24.26	742319	9.06
2001	261059	65088	24.93	736425	8.84
2002	252584	60376	23.90	757981	7.97
2003	272230	74621	27.41	892498	8.36
2004	317161	94258	29.72	1023170	9.21
2005	360552	118837	32.96	1169467	10.16
2006	388179	133302	34.34	1315515	10.13
2007	419882	149541	35.62	1464978	10.21
2008	455632	187570	41.16	1549073	12.11
2009	315177	112578	35.72	1371152	8.21
2010	386580	149956	38.79	1613463	9.29
2011	450430	261228	58.00	1788647	14.60
2012	454099	183462	40.40	1824289	10.06
2013	456598	188324	41.25	1842627	10.22
2014	473603	197377	41.68	1792883	11.01
2015	408804	140952	34.48	1552808	9.08
2016	388911	120419	30.96	1529224	7.87

Economic growth in Canada has been largely driven by the resources sector with the real GDP growing at an average rate of 2.9% per year from 1981 to 2007, punctuated with higher growth periods from 1981 to 1995 at 5% per year and from 1995 to 2000 at 4.4% year (Tang & Wang, 2015).

According to Kaznacheev (2013), Canada's GDP per capita is the 9th highest in the world. The Canadian state has gone through four forms in its evolution as described below:

- The minimalist state (pre-20th century) characterised by a classic staples political economy with minimal state intervention;
- The emergent state (1900-1945) characterised by state intervention, capitalism and industrialisation centered on natural resource exploitation like agriculture development and oil and gas extraction;
- The Keynesian Welfare State (1946-1990) characterised by policies aimed at diversifying the economy from staples dependence. This marked the decline of the staples political economy and growth in exports of manufactured goods; and
- The competitive state characterised by policies of transforming the economy from an industrial or staples-based to a knowledge and innovation based (Wellstead, 2007).

Management of mineral resources

The federal or provincial governments own mineral resources in the ground with the exception of individuals and private companies, who acquired land prior to 1887, who also have mineral rights on the land they own (Kaznacheev, 2013). Although the federal or provincial governments own mineral resources, the mineral industry in Canada is private, competitive with no state-owned enterprises, mineral licences have security of tenure and the licensing process is transparent (Kaznacheev, 2013).

The mineral tax regime is competitive and profit-based (Kaznacheev, 2013). Resource rents are deposited into sovereign wealth funds. The Alberta Heritage Savings Trust is the largest and it was established in 1976 to act as a savings fund for the future generation, to cushion the economy against

commodity price volatility and as a vehicle for diversifying the economy (Baena, Sevi & Warrack, 2012).

Table 33 shows that Canada ranked favourably in terms of efficiency of natural resources management, the corruption perception index, human development index (HDI) and the environmental performance index (Zubikova, 2018). Canada has developed a strong framework of political, economic and social institutions, which has enabled it to develop the world's leading financial hub in the extractive industries, the Toronto Stock Exchange (Kaznacheev, 2013).

Table 33: Efficiency of government policies for Canada compared to other countries (Zubikova, 2018).

Country	Nigeria	Botswana	Canada	Norway
Corruption Perception Index (2016)	136.	35.	9.	6.
Resource Governance Index (2016)	40.	30.	7.	1.
Environmental Performance Index (2016)	133.	79.	25.	17.
Human Development Index (2016)	152.	108.	10.	1.
Debt 2000/last available data (% GDP)	65.18/1.98 (2016)	42.70/22.24 (2016)	102.20/91.50 (2015)	34.20/31.70 (2015)
Expenditure on education (% of GDP)	-	9.63 (2009)	6.1 (2013)	6.3 (2013)

6.6.4 United States of America

Resource abundance and economic growth

United States of America (USA) became a world leader in production of many minerals that included copper, molybdenum, petroleum, coal, phosphate, iron ore, magnesite, lead, mercury, zinc, antimony, silver, arsenic, tungsten and salt by 1913, as shown in Table 34 (David & Wright,

1997). Table 34 shows USA's share of the total world production in 1913 and the share of world reserves in 1989 as a percentage. By the mid-nineteenth century, USA was already a major producer of crude oil (Figure 64) and it overtook Chile as the world's major producer of copper in the late nineteenth century (Figure 65) (Wright & Czelusta, 2003).

Table 34: USA's share of the total world production (%) in 1913 and share of world reserves (%) in 1989 (David & Wright, 1997).

	1913 output	1989 reserves	1989 reserves plus cumulative 1913-1989 production	1989 reserve base plus cumulative 1913-1989 production
Petroleum	65	3.0	19.8	
Copper	56	16.4	19.9	18.5
Phosphate	43	9.8	36.3	15.4
Coal	39	23.0	23.3	
Bauxite	37	0.2	0.5	0.5
Zinc	37	13.9	14.0	15.6
Iron ore	36	10.5	11.6	7.4
Lead	34	15.7	18.1	18.8
Gold	20	11.5	8.6	8.4
Silver	30	11.7	16.3	17.6

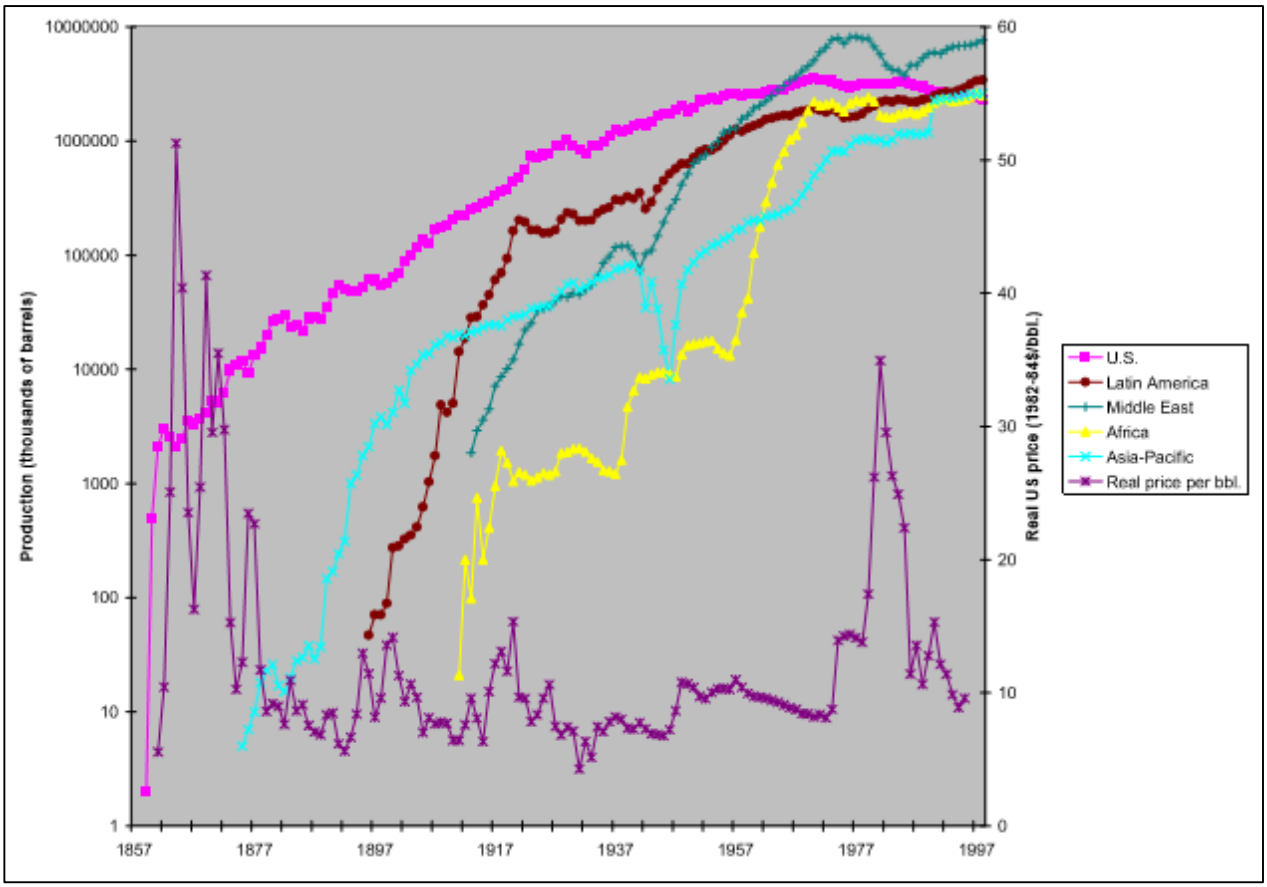


Figure 64: Crude oil production in USA compared to other world regions (1857-1998) (Wright & Czelusta, 2003).

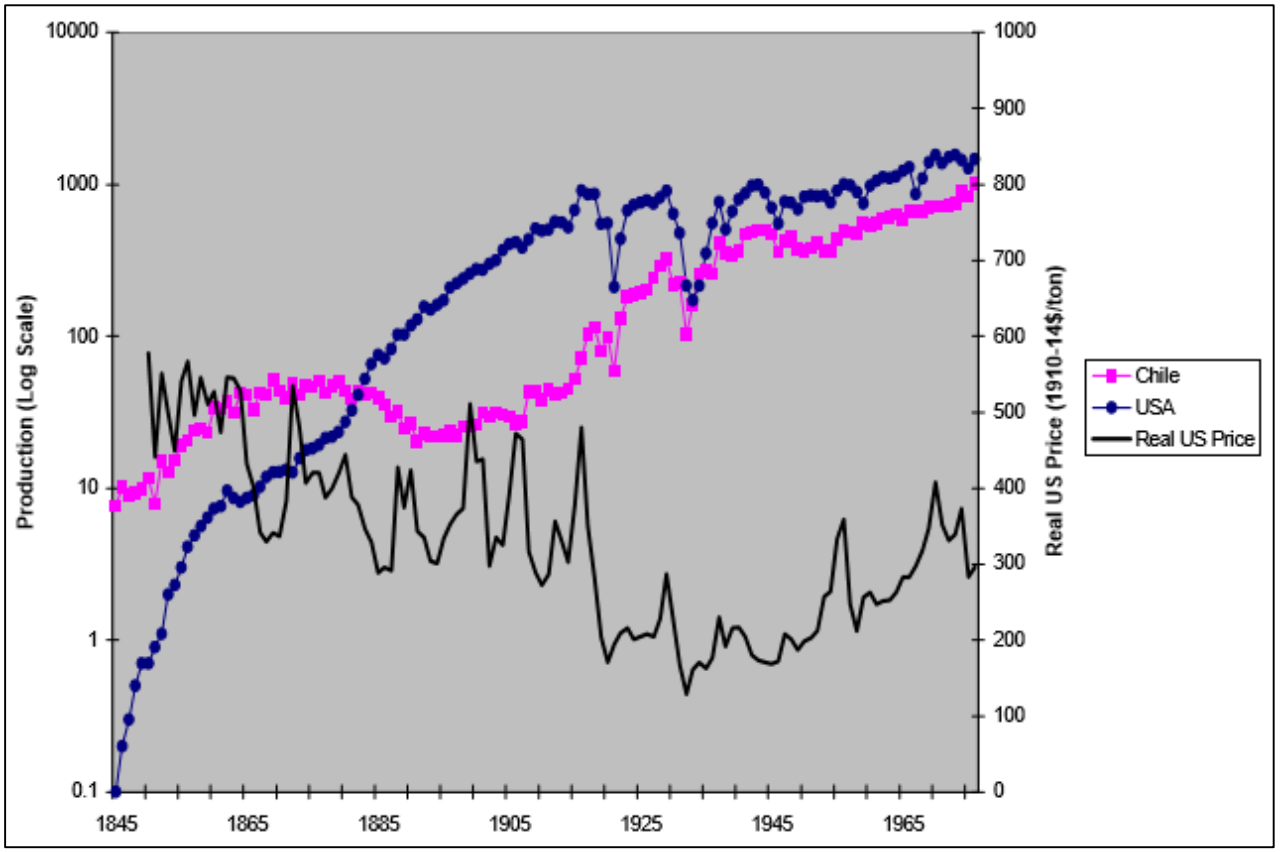


Figure 65: Comparison of Copper production in Chile and USA (1845-1976) (Wright & Czelusta, 2003).

Since the late nineteenth century, USA's GDP per capita has been on an exceptional upward almost linear trend as shown in Figure 66 (Fernald & Jones, 2014). According to David and Wright (1997), the development of the minerals sector in USA was essential to the national economic development as minerals were required in the manufacturing industry and the huge mineral production resulted in USA becoming a world leader in manufacturing. Gill, Izvorski, Van Eeghen and De Rosa (2014:70) further argued that "the abundance of exploitable natural resources was in many ways an outgrowth of America's technological progress, much as new techniques that allow shale gas to be accessed are making the United States the world's biggest producer of natural gas".

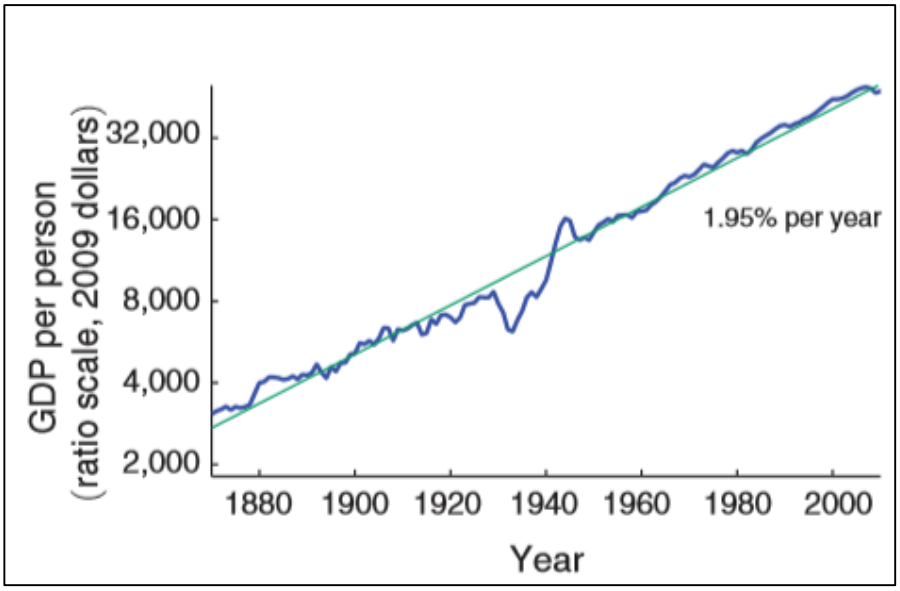


Figure 66: USA GDP per capita (Fernald & Jones, 2014).

Management of mineral resources

Since the nineteenth century, the USA government has maintained no claim to the title of the nation's minerals, there is an open access policy for prospecting of minerals (David & Wright, 1997). Most of the subsurface resources are owned by private individuals and acquisition of mineral rights by extraction companies is through negotiation of private lease contracts with individual owners or through auction of minerals owned by the federal or state governments (Brown, Fitzgerald & Weber, 2016). This is in sharp contrast to most mining jurisdictions where mineral resources are owned by the state.

The success of resource-based development in USA was attributed to:

- A legal, institutional and political environment that was accommodating and free trade;
- Heavy investment in the infrastructure of public scientific knowledge like the establishment of the United States Geological Survey (USGS) in 1879, which was instrumental in provision of geological information and scientific research related to mineral resources; and

- Promotion of education in the minerals sector. USA was leading in education of mining, minerals, and metallurgy professionals by the late nineteenth century (Wright & Czelusta, 2003).

In addition, “resource extraction in the USA was more fundamentally associated with ongoing processes of learning, investment, technological progress and cost reduction, generating a many-fold expansion rather than depletion of the nation’s resource base” (Wright & Czelusta, 2003:6). This led to a move from a resource-based economy to one based on knowledge, innovation and science-based technology (Gill, Izvorski, Van Eeghen and De Rosa, 2014).

6.7 Summary

The experiences from three case studies of developing nations (Nigeria, Venezuela, Yemen) confirmed the resource curse thesis. These nations have remained low-income countries with high poverty rates despite the abundance of natural resources. They are characterised by dysfunctional political and economic institutions, corruption, poor macroeconomic policies, lack of transparency and accountability in the management and utilisation of natural resource rents, poor governance and political patronage. So these issues have undermined economic growth and development in Nigeria, Venezuela and Yemen.

The narrative from eight case studies of developing nations (Botswana, Chile, Brazil, Saudi Arabia, Qatar, China, Malaysia, Indonesia) indicates countries that have managed to escape the resource curse. These countries have successfully utilised resource rents to transform their economies from low-income with high poverty rates to middle income and high income economies with low poverty rates. They implemented a mixture of state-led interventionist and market-led policies, diversification strategies, good macroeconomic policies, good economic institutions and favourable

regulatory frameworks and had good leadership. The type of governance model (democratic vs. autocratic) seem not to have affected economic growth and development.

The experiences of developed nations (Australia, Norway, Canada, United States of America) indicate that their development was based on natural resources. They developed through heavy investment in gathering geoscientific data, education and scientific research, good macroeconomic policies, diversification strategies and development of linkages between the resources sector and other sectors of the economy. All this was under good leadership, good governance and a strong framework of political, economic and social institutions. Resource cursed nations like Zimbabwe can learn from these experiences in order to escape the resource curse.

The next chapter summarises and discusses the findings of the study and the policy implications. It also presents the key challenges in Zimbabwe of implementing the findings.

7 RESEARCH FINDINGS AND POLICY IMPLICATIONS

7.1 Introduction

This chapter presents and discusses findings on global experiences on "what to do" and "what not to do" to escape the resource curse. The chapter then provides policy recommendations for Zimbabwe to avoid the resource curse and also considers key challenges of implementing these recommendations.

7.2 Lessons from Global Experiences

This section seeks to answer the question "how have other resource-based economies developed?" This study analysed sixteen case studies of resource rich nations, twelve from developing nations and four from developed nations. The sample covered most regions of the world (Africa, South America, Middle East, Asia, North America, Europe). Of the twelve developing nations studied, Botswana, Chile, Brazil, Saudi Arabia, Qatar, China, Malaysia and Indonesia managed to escape the resource curse and Ghana showed mixed results. Nigeria, Venezuela and Yemen succumbed to the resource curse. The main issues identified that determine whether a resource-rich nation will avoid the resource curse or succumb to it include governance, quality of institutions, economic policies, management and utilisation of resource rents and development of economic linkages.

7.2.1 Governance and quality of institutions

The experiences of most resource rich nations (Botswana, Chile, Australia, Norway, Canada, USA) that have managed to avoid the resource curse indicate that good governance, visionary leadership and strong political and economic institutions are important determinants of economic development. These findings are consistent with literature in which through strong institutions, good leadership and good governance can be established, which is able to institute policy reforms to prevent rent-seeking behaviour.

Resource-rich nations with bad governance, bad leadership and poor quality institutions like Nigeria, Venezuela and Yemen, have succumbed to the resource curse. This is in line with the resource curse theory, which argues that only countries with poor quality institutions would yield to the resource curse. Poor quality institutions characterised by poor policy choices, rent seeking behavior and corruption create bad leadership, which negatively affect economic growth and development.

The exception are resource-rich nations in Asia (China, Indonesia, Malaysia) and Middle East (Saudi Arabia, Qatar), which performed poorly on governance indicators especially on voice and accountability yet they managed to escape the resource curse. The high levels of corruption in China and Indonesia did not slow down economic development, which contradicts with theory. These exceptions indicate the importance of regional, cultural and historical differences. A typical example of historical influence is that of Botswana, where literature indicate that its good quality institutions emerged from the historical Tswana tribes.

The type of governance system seems not to be a critical determinant of economic development as there are examples of democratic (Botswana, Australia, Norway, Canada, USA), autocratic (Chile, Brazil, China, Malaysia, Indonesia) and monarchy (Saudi Arabia, Qatar) regimes that have managed to escape the resource curse. However, most of the autocratic regimes (Chile, Brazil, Indonesia) have moved towards democracy in the later years and the case studies also indicate that democracy is generally associated with good governance. There are also high levels of transparency and accountability in institutions of stable democracies, which reduces rent seeking behaviour and corruption (Raggl, 2017).

7.2.2 Economic policies

The study showed that the resource-rich nations that implemented dominantly market-led policies (Botswana, USA) and a mixture of state intervention and market policies (Chile, China, Malaysia, Indonesia, Saudi Arabia, Qatar, Australia, Norway, Canada) avoided the resource curse. These policies were accompanied by a stable political environment and prudent macroeconomic management like control of inflation and exchange rate management.

Market-led policies are consistent with the classical and neoclassical growth models. These models advocate for the operation of free and competitive markets as a necessary condition for economic growth and development. A mixture of state intervention and market policies are consistent with the New Structural Economic (NSE) theory, which argues that free market forces result in efficient allocation of resources and the state needs to play a facilitating role in economic growth and development.

Resource-rich nations (Venezuela, Nigeria, Ghana, Yemen) that implemented dominantly state-led policies characterised by resource nationalisations are resource-cursed. Literature indicates that state-led policies as prescribed by the structuralist theory have several drawbacks due to government inefficiencies, creation of state-owned monopolies, opportunities for rent seeking activities and corruption, which all retard economic growth.

Brazil was an exception, although it implemented state-led policies (1930-1989) by adopting an import-substitution industrialisation strategy, it escaped the resource curse. The difference with Brazil and the resource-rich nations that succumbed to the resource curse is the utilisation of resource rents. Brazil invested in developmental projects, whereas those that yielded to the resource curse used resource rents for recurrent

expenditure. Also literature points to the existence of efficient state enterprises like Brazil's Petrobras in the successful implementation of state-led policies. This emphasises the need for a development model that takes cognisance of a country's contextual factors.

7.2.3 Resource rent management and utilisation

The study shows that the way resource rents are managed and utilised is key to escaping the resource curse. Successful countries like Botswana, Chile and Norway have managed resource rents through strict fiscal systems with strong expenditure rules, control of debt, control of corruption and rent seeking behavior. The resource-rich countries (Nigeria, Ghana, Venezuela, Yemen) that were unsuccessful in taming the resource curse are characterised by fiscal indiscipline and increasing debt burden as a result of borrowing against expected future revenues.

Resource-rich nations that have managed to escape the resource curse have utilised resource rents as follows:

- Investment in human capital development (Botswana, Malaysia, Indonesia, Brazil, USA). According to literature, as early as the late nineteenth century, USA was leading in education of mining professionals, and the Malaysian government invested between 5% and 6% of the nation's GDP in human capital development.
- Investment in infrastructure development (Qatar, Indonesia, Malaysia, China, Australia, USA). China adopted a regional development policy for the development of large infrastructure projects in the western part of China. The Australian government builds extensive infrastructure to reduce risk of mining investment, hence, attracting FDI.
- Investment in diversification efforts (Brazil, Malaysia, Indonesia, Australia, Qatar, Norway, USA, Canada). This led to diversified manufacturing in Brazil, Malaysia and Indonesia. In Qatar, resource

rents are invested in both domestic and international non-resource sectors.

- Establishment of Sovereign Wealth funds, where surplus rents are deposited as savings for future generations, as a vehicle for diversifying the economy and to be used to mitigate against commodity downturns. These funds are kept offshore to avoid the Dutch disease. Examples of successful Sovereign Wealth funds include Norway's Government Pension Fund Global, Botswana's Pula Fund, Chile's Economic and Social Stabilisation Fund and the Pension Reserve Fund, Saudi Arabia's Public Investment Fund, Qatar's Sovereign Wealth Fund and Canada's Alberta Heritage Savings Trust. Nigeria's Sovereign Wealth fund and Venezuela's Fund for National development collapsed due to lack of transparency and institutional reforms, thus, these funds will only survive in resource-rich nations with strong institutions.
- Distributing resource rents to marginalised communities. For example, Brazil adopted policies of distributing resource rents to municipalities, Indonesia's policy of rent redistribution to the majority of rural population and China embarked on fiscal reforms to redistribute resource rents between the provincial and central governments.

The resource curse theory indicates that natural resources crowds out human capital. There are low levels of savings in resource-rich nations and resource rents tend to be used for recurrent expenditure instead of developmental expenditure. Thus, only those resource-rich nations that have invested in developmental projects and have savings, managed to defy the resource curse theory. The Washington Consensus policy reforms prescribed by the neoclassical theory also advocates for fiscal discipline and increasing infrastructure and public expenditure (education, health) for economic growth and development.

Savings and human capital development as determinants of economic growth are also consistent with growth models of Adam Smith and Harod and Domar. Adam Smith (1776) argued that savings of surplus income in an economy will increase capital, which is a major determinant of economic growth. The Harrod-Domar model emphasised the role of capital and labour in economic growth and development. The NSE theory advises to invest resource rents in human and social capital, infrastructure and diversification efforts in order to spur economic growth and development.

Resource-rich nations (Nigeria, Ghana, Yemen, Venezuela) that have failed to escape the resource curse have largely used resource rents for recurrent expenditure, to expand political influence and engage in corrupt activities. This is conformable to the rent-seeking model, which indicates that resource rents are not used for economic development in many resource-rich nations due to rent-seeking behaviour.

Transparent and accountable resource-rich nations (Norway, Chile, Botswana, Brazil, Australia, Canada, USA) in resource rent management and utilisation have managed to escape the resource curse. Norway is one of most transparent nation in the management of resource rents. According to literature, this is due to its high quality institutions, membership of the EITI and adoption of a division between the technical, policy and commercial roles in the administration of the resource sector. Although Nigeria became a member of the EITI, there was no improvement in transparency and accountability, due to lack of institutional reforms.

7.2.4 Economic linkages, innovation and technological progress

Development of economic linkages, innovation and technological progress set apart the developed resource-rich nations and the developing resource rich nations that have managed to escape the resource curse. Technological progress and innovation in USA, Australia, Canada and Norway was at the forefront, initially of huge mineral production and later

the diversification from resource-based economies to knowledge and innovation based economies. Australia, through scientific research institutions has developed new technologies in the mining industry that have been diffused into other sectors of the economy, thereby creating linkages with the rest of the economy. In Norway, it is government policy for private sector companies to work with research institutions in finding new innovations.

This is consistent with the linkage theory, which argues that building linkages between the natural resources sector and other sectors of the economy will result in sustainable development. Thus, through the maximisation of natural resource linkages, resource-rich nations can resuscitate economic growth and development. This can be facilitated through research and development and implementation of knowledge intensive production techniques.

The neoclassical growth model, which is an extension of the Harold-Domar model argued that technological progress is the most important determinant of economic growth in the long run. Romer and Lucas's endogenous growth model also emphasises the role of innovation and technological progress in economic growth. Thus, low levels of innovation and technology in an economy may explain the resource curse.

7.3 Policy Recommendations for Zimbabwe

This section seeks to answer the question "how can Zimbabwe escape the resource curse?" Based on the findings of this study, a number of policy prescriptions are suggested for Zimbabwe. However, the variations and some exceptions of experiences among the resource-rich nations that have managed to escape the resource curse indicates the significance of country specific issues (culture, history) and regional differences. The following are policy recommendations for Zimbabwe:

- Institutional reforms

Lessons from global experiences of resource-rich nations and the resource curse theory indicate that only nations with good institutions will avoid the resource curse. Literature on Zimbabwe suggest that there are high levels of corruption, rent-seeking activities, lack of transparency and accountability in mineral rent collection, which indicate the existence of poor quality institutions. Thus, it is imperative for Zimbabwe to embark on institutional reforms before adopting any policies in order to avoid the resource curse.

Lessons can be learnt from Chile's institutional reforms in the early 1970s which resulted in significant economic growth driven by the export sector. Sarmidi, Hook law and Jafari (2014) noted that it does not matter how good a policy is, if institutions are weak, it will not deliver the desired results. Kaznacheev (2013) further argued that the resource curse problem is institutional rather than purely economic. Transparency and accountability can be improved through membership of the EITI. The Zimbabwe government has committed to institutional reforms, "an aggressive fight against all forms of corruption" and to joining the EITI in its October 2018 to December 2020 development plan (Government of Zimbabwe, 2018c:6).

- Adoption of a mixture of state intervention and market-oriented economic policies

Failure of government policies has been cited as one of the channels of the resource curse transmission in Zimbabwe. The history of Zimbabwe's economic policies showed that these had been dominantly state-led. Global experiences of most resource-rich nations that have avoided the resource curse and growth theories (NSE) indicate that nations, which adopt a mixture of state intervention and market-oriented policies are most likely to avoid the resource curse.

China is a typical example in which state-led market reforms in the late 1970s resulted in a phenomenal economic growth. The reforms in China were implemented through a dual-track approach, which provides stability during the transition stage in which state protection of priority industries continued whilst simultaneously liberalising some sectors of the economy. However, in adopting these policy prescriptions, Zimbabwe needs to pay attention to the country's specific national issues, culture and history, as there have been some exceptions like Brazil, which prospered under dominantly state-led policies as well as Botswana and USA, which prospered under dominantly market policies.

Literature and global experiences suggest that for these policies to be successful, they should be implemented under good quality institutions and in a stable political and macroeconomic environment. Unfortunately, according to Zikiti (2015), there is political tension in Zimbabwe, which is weakening institutions. In addition, the Zimbabwe macroeconomic environment has been characterised by hyperinflation and poor exchange rate management. This hinders the successful implementation of economic policies. The declaration by the government of Zimbabwe in its 2018-2020 development plan to improve governance and the rule of law, re-orient the country towards democracy, improve peace and national unity and macro-economic stability, is a step in the right direction (Government of Zimbabwe, 2018c).

- Adoption of strict fiscal systems for resource rent utilisation

Zimbabwe has a huge fiscal deficit and debt. According to the Government of Zimbabwe (2018c), the fiscal deficit stood at US$1.4 billion in the first half of 2018 and the country's foreign debt arrears amount to about US$5.6 billion. In order to escape from the resource curse, Zimbabwe needs to adopt strict fiscal rules that include strong expenditure rules, control of rent-

seeking behavior, corruption and debt. For example, Norway has implemented a “4% fiscal rule”, which limits public spending (Larsen, 2005). Also, Chile’s and Botswana’s fiscal institutions are good models to follow. Some measures of ensuring fiscal discipline are being implemented under the current development plan (2018-2020) in which the “Treasury will preside over a Fiscal and Financial Stabilisation Committee to coordinate and monitor adherence to the fiscal and monetary targets” (Government of Zimbabwe, 2018c:14). The programme also “contains specific measures to uproot entrenched indiscipline and corruption, including nipping in the bud all opportunities for rent seeking” (Government of Zimbabwe, 2018c:21). Such policy measures mitigate against the negative effects of over-spending and borrowing, which retard economic growth.

- Investment in human capital development

Resource-rich countries that have avoided the resource curse have heavily invested in human capital development. This is also supported by many growth theories. Zimbabwe has prioritised human capital development since independence and must continue to do so, focusing on quality and appropriateness to current developmental needs. Unfortunately, the economic meltdown that started around 2000 has resulted in human capital flight. Thus, it is imperative for Zimbabwe to embark on an aggressive human skills development programme to fill the gap.

- Investment in infrastructural development

Development of infrastructure is critical to resource-based development as indicated by global experiences and growth theories. Zimbabwe’s infrastructure has been deteriorating over the past years. According to the world bank (2014), Zimbabwe needs US$40 billion for investment in infrastructural development across all sectors of the economy. Lessons can

be leant from the experiences of China, which implemented large infrastructure projects that resulted in significant resource-based economic growth.

- Establishment of a professionally managed Sovereign Wealth Fund

Savings is one of the major determinant of economic growth as predicted by growth theories and experiences of resource-rich nations that have managed to avoid the resource curse. Savings are motivated by the need to cushion against periods of commodity downturns, savings for the future generation and for diversification efforts to compensate for the non-renewability of mineral resources.

A Sovereign Wealth Fund was established in Zimbabwe in 2014, however, it collapsed as Zimbabwe did not have surplus revenue for savings given its huge external debt and the collapse of social services infrastructure. Literature indicates that such a fund is only plausible if institutions are of good quality, hence, institutional reforms are a prerequisite for establishing a Sovereign Wealth Fund in Zimbabwe. If Zimbabwe is to re-establish such a fund, it will firstly need adequate investment in infrastructure, health and education sectors and reduction of debt to manageable levels. Zimbabwe can learn from Norway and Botswana, who have the most successfully managed funds due to their strong institutions and good governance.

- Development of economic linkages

Experiences of developed nations that developed through resource-based indicates that development of economic linkages between the mineral sector and other sectors of the economy will bring out multipliers in an economy. The Zimbabwean economy has been heavily dependent on mineral exports since independence, thus, it has failed to develop linkages

with other sectors of the economy. The experiences of Australia and Norway in development of linkages between the resource sector and other sectors of the economy can provide lessons for Zimbabwe. Zimbabwe can develop linkages through access to financial capital, investment in human capital development, research and development and providing incentives for collaboration between the private sector and research institutions in developing technologies for resource based industries.

7.4 Constraints in the Zimbabwean Environment

Some of the policy reforms that are consistent with global experiences and theory to avoid the resource curse have been proposed in the 2018-2020 development plan. However, at the time of writing this report (December 2020), almost towards the end of the development planning period, the Zimbabwean economic situation still remains critical.

Sibanda and Makwata (2017:45) noted that several economic policy reforms have failed in Zimbabwe "due to lack of proper implementation and resource constraints". Sibanda and Makwata (2017:45) further argued that for economic policies in Zimbabwe to be successful, there is need for deeper institutional reforms first, where "institutions of government must have clearly defined responsibilities and competencies as well as the required human and financial resources". The prevailing political tension and macroeconomic instability in Zimbabwe are also deterrents to successful policy implementation.

Nzenzema, Zinyama and Nhema (2015) noted that the main challenges in the Zimbabwean minerals sector include skills shortages, access to foreign capital (weak domestic capital markets) and lack of appropriate technology. According to the Chamber of Mines of Zimbabwe (2014), the sector requires about US$5.8 billion in the next five years to fund expansion projects and to achieve optimal production. It is therefore critical for Zimbabwe to implement

policies that attract FDI, increase expenditure on skills development and acquisition of appropriate technology.

8 CONCLUSION

Zimbabwe has vast mineral resources that include diamonds, gold, iron ore, platinum group metals (PGMs), nickel, coal, copper and chromite. Mining in Zimbabwe dates back as far as the 17th century with significant production starting around 1890 with the white colonial settlers. Mining played a significant role in the Zimbabwean economy during the colonial and post-colonial periods.

However, despite the abundance of the mineral wealth, Zimbabwe has been experiencing an economic crisis for the past decades. There is high unemployment rate, high levels of poverty, high infant mortality rate and lack of basic social services. This indicates that the majority of the population has not benefited from mineral resources extraction. Literature on Zimbabwe points to the existence of weak institutions, high levels of corruption and lack of transparency and accountability in mineral revenue collection and failure of government policies. According to the resource curse theory, these are symptoms of a resource-cursed nation.

The resource curse is not only peculiar to Zimbabwe, it is a global phenomenon that has affected many resource-rich nations. On the other hand, there are also many resource-rich nations that have managed to escape the resource curse. It is against this background that this study set to find answers to the important questions of “how can Zimbabwe escape the resource curse?” and “how have other resource-based economies developed?”

This study identified sixteen case studies of global experiences of “what to do” and “what not to do” to escape the resource curse. The sample included 12 resource-rich developing nations from Asia (China, Malaysia, Indonesia), Middle East (Saudi Arabia, Qatar, Yemen), South America (Chile, Brazil, Venezuela) and Africa (Botswana, Ghana, Nigeria). Developed nations

included in the study are Australia, Norway, Canada and United States of America.

Analysis of the case studies of developing nations indicates that Chile, Brazil, Botswana, Qatar, Saudi Arabia, Malaysia, China and Indonesia were successful in avoiding the resource curse, whilst Ghana showed mixed results. Venezuela, Nigeria and Yemen were not successful and are resource-cursed. From the experiences of successful resource-rich nations and theory, answers to the important question of “how have other resource-based economies developed?” have been identified as follows;

- Successful resource-rich nations are characterised by strong political and economic institutions, good governance and good leadership. Resource-rich nations with strong institutions are able to prevent corruption and rent-seeking behaviour, which are deterrents to economic growth. Although the experiences of successful resource-rich nations showed that the type of governance system (democratic, autocratic) is not critical, theory suggests that institutions of stable democracies foster high levels of transparency and accountability.
- Most of the successful resource-rich countries like China, Malaysia, Chile and Qatar adopted a mixture of state intervention and market policies under stable political and macroeconomic environments. This is also supported by the New Structural Economic (NSE) theory, which argues that a mixture of the elements of state-led and market led polices are important for economic development in which the state plays a facilitating role and free market forces result in efficient allocation of resources. There are some exceptions like Brazil, which avoided the resource curse through implementation of state-led policies. However, Brazil utilised its resource rents in developmental projects.
- The study found that the way resource rents are managed and utilised differentiate between successful resource-rich nations like Botswana, Chile and Norway and resource-cursed nations like Nigeria and

Venezuela. Successful countries have managed resource rents through transparency and accountability, control of corruption and rent-seeking activities, control of debt and strong expenditure rules. Resource-rich nations that managed to avoid the resource curse have utilised resource rents as follows:

  - Investment in human capital and infrastructure development;
  - Investment in diversification efforts;
  - Surplus rents are deposited in Sovereign Wealth funds as savings for future generations, as a vehicle for diversifying the economy and to be used to mitigate against commodity down turns. A Sovereign Wealth fund will only work under strong institutions like the experiences of Botswana and Norway among others; and
  - Improvement of marginalised communities through distribution of resource rents.

- Resource-rich developed nations like Australia and Norway have developed economic linkages between the natural resources sector and other sectors of the economy which has resulted in sustainable economic development. This was achieved through investment in research and development, finding new innovations and technological progress.

Some exceptions in the experiences of successful resource-rich nations highlight the importance of country or regional contextual factors like culture and history. These exceptions include that despite high levels of corruption in China and Indonesia, they escaped the resource curse. Also, despite generally poor governance indicators for studied countries in the Middle East (Saudi Arabia, Qatar) and Asia (China, Indonesia, Malaysia), they avoided the resource curse.

The experiences of successful resource-rich nations provide lessons to be learnt by resource-cursed nations like Zimbabwe. In light of the findings of

the study, several policy recommendations were made for Zimbabwe to escape the resource curse. These include institutional reforms, adoption of a mixture of state intervention and market-oriented economic policies, adoption of strict fiscal systems in resource rent management and utilisation, investment in human capital and infrastructural development, development of economic linkages and re-establishment of a Sovereign Wealth Fund once institutions are reformed and there is sufficient investment in social services and debt levels are manageable.

Literature on the history of Zimbabwe's economic policies indicates that these failed largely due to lack of resources and proper implementation. In addition, the political tensions and macroeconomic instability in Zimbabwe are hindrances to the successful implementation of the policy recommendations. Thus, deeper institutional reforms, provision of human resources with adequate competencies, access to capital, stable political and macroeconomic environment are prerequisites for the successful implementation of the policy recommendations.

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APPENDIX A LIST OF NOMENCLATURE

AMV	Africa Mining Vision
AU	African Union
AUC	African Union Commission
AUDA	African Union Development Agency
AUS	Australia
BEL	Belgium
BSAC	British South African Company
CAN	Canada
CCSI	Columbia Center on Sustainable Investment
CMVs	Country Mining Visions
CPI	Corruption Perceptions Index
DEN	Denmark
EC	European Commission
EITI	Extractive Industries Transparency Initiative
EPOs	Exclusive Prospecting Orders
ESAP	Economic Structural Adjustment Programme
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GER	Germany
GHEITI	Ghana Extractive Industries Transparency Initiative
GNI	Gross National Income
GNP	Gross National Product
HD	Human Development

HIPC	Heavily Indebted Poor Countries
ICMM	International Council on Mining and Metals
IMF	International Monetary Fund
KPCS	Kimberly Process Certification Scheme
LAC	Latin American and the Caribbean
LNG	Liquefied natural gas
MAB	Mining Affairs Board
MAP	Millennium Africa Recovery Plan
MERP	Millennium Economic Recovery Programme
MDGs	Millennium Development Goals
MMCZ	Minerals Marketing Corporation of Zimbabwe
MTP	Zimbabwe Medium Term Plan
NAI	New Africa Initiative
NEITI	Nigerian Extractive Industries Transparency Initiative
NEPAD	New Partnership for Africa’s Development
NERP	The National Economic Revival
NSE	New Structural Economic theory
NET	Netherlands
NOC	National Oil Companies
NOR	Norway
OAU	Organisation of African Unity
OECD	Organisation for Economic Co-operation and Development
OPEC	Organisation of the Petroleum Exporting Countries

PDVSA	Petróleos de Venezuela sa - Venezuelan oil company
PPP	Purchasing Power Parity
REEs	Rare earth elements
SADC	Southern African Development Community
SAP	Structural Adjustment Programme
SDFI	State Direct Financial Interest - entity owned by the state in Norway
SMEs	Small and medium-sized enterprises
SOEs	State-owned enterprises
SSA	Sub-Saharan African
STERP	Short Term Emergency Recovery Programme
SWE	Sweden
TSP	Transitional Stabilisation Programme
UNDP	United Nations Development Programme
UK	United Kingdom
USA	United States of America
USD	United States dollars
USSR	Union of Soviet Socialist Republic
ZIMASSET	Zimbabwe Agenda For Sustainable Socio-Economic Transformation
ZIMPREST	Zimbabwe Programme for Economic and Social Transformation
ZMDC	Zimbabwe Mining and Development Corporation