



Faculty of Economics and Business

**Foreign Direct Investment and Natural Resources Curse in Sub-Saharan
Africa**

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Foreign Direct Investment and Natural Resources Curse in Sub-Saharan Africa

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DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Malaysia Sarawak. Except where due acknowledgements have been made, the work is that of the author alone. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

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ABSTRACT

Africa is the second largest continent in the world, a region which is vast and endowed with natural resources of different types. Sub-Saharan Africa is a region of different countries, ethnicity, races, believes, languages and groups of people accommodating and understanding each value and norms. An underdeveloped region despite the high quality and vast range of natural resources endowment deposited in the region. The increasing number of people living under poverty is alarming and without a proper channel to make the system work for a better livelihood, life in this region will be unconducive to the majority. In view of this, this study investigates the role of foreign direct investment (FDI) on natural resources curse in the sub-Saharan African region over the period of 2011-2020. Using the panel data static model to analyse the effect of FDI inflows and natural resources rents on GDP in the sub regions of Sub-Saharan Africa such as Easten, Central, Western and Southern Africa and the dynamic model to analyse the whole Sub-Saharan region while controlling other socio-economic variables. Results show that there is a presence of natural resource curse in Sub-Saharan Africa as a whole but the some of the sub regions such as Southern Africa are not affected by the natural resource curse.

Keywords: Foreign Direct Investment, Natural Resources Curse, Sub-Saharan Africa, Economic Growth

PELABURAN LANGSUNG ASING DAN SUMPAHAN SUMBER ASLI DI SUB-SAHARA AFRIKA

ABSTRAK

Afrika adalah benua kedua terbesar di dunia, sebuah wilayah yang luas dan dikurniakan sumber semula jadi pelbagai jenis. Afrika Sub-Sahara ialah wilayah negara yang berbeza, etnik, kaum, kepercayaan, bahasa dan kumpulan orang yang menerima dan memahami setiap nilai dan norma. Wilayah yang kurang membangun walaupun mempunyai kualiti tinggi dan pelbagai endowmen sumber asli yang disimpan di rantau ini. Peningkatan bilangan orang yang hidup di bawah kemiskinan adalah membimbangkan dan tanpa saluran yang betul untuk menjadikan sistem berfungsi untuk kehidupan yang lebih baik, kehidupan di rantau ini akan menjadi tidak kondusif kepada majoriti. Penyelidikan ini mengkaji peranan pelaburan langsung terhadap fenomena paradok sumber semulajadi di wilayah Sub-Saharan Afrika bagi tempoh masa 2011-2020. Model data panel statik akan diaplikasikan untuk mengkaji kesan kemasukan pelaburan langsung dan sewaan sumber semulajadi terhadap Keluaran Dalam Negeri Kasar di bawah kawalan pembolehubah sosioekonomi yang lain. Sesungguhnya, keputusan kajian ini akan mempertingkatkan tahap kefahaman terhadap peranan pelaburan langsung serta dijadikan sebagai panduan oleh negara-negara Sub-Saharan Afrika untuk membentuk polisi yang akan merangsangkan pertumbuhan ekonomi di wilayah tersebut. Keputusan menunjukkan bahawa terdapat kehadiran kutukan sumber asli di Sub-Sahara Afrika secara keseluruhan tetapi beberapa sub wilayah seperti Afrika Selatan tidak terjejas oleh kutukan sumber asli.

Kata kunci: *Pelaburan langsung, paradoks sumber semulajadi, Sub-Saharan Afrika, Pertumbuhan Ekonomi*

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LIST OF ABBREVIATIONS

FDI	Foreign Direct Investment
SSA	Sub-Saharan Africa
DD	Dutch Disease

CHAPTER 1

INTRODUCTION

1.1 Introduction

Having an abundance of non-renewable resources presents both an opportunity and a challenge. Utilised effectively, these resources can increase the prosperity of both present and future generations. They can cause economic conflict and lasting environmental damage if misused or wasted. The country's natural resources are meant to be a blessing because they contribute to economic growth and the population's standard of living. However, many oil-, gas-, and mineral-rich nations have not realised their maximum potential due to their abundance of natural resources. In general, they are more authoritarian, conflict-prone, and economically unstable than nations without these resources (Natural Resource Governance Institute, 2015).

The resource curse is a phenomenon that occurs when a country possesses natural resources but does not reap the benefits. This syndrome has been observed in numerous nations across the globe, but it is not restricted to resource-rich nations. The resource curse is commonly associated with the identification of natural resources, but it can also emerge from various forms of development that result in a significant influx of foreign currency, such as a sudden increase in natural resource prices, foreign aid, or foreign direct investment (International Monetary Fund, 2020).

The manner in which a nation attracts this disease is described in the work done by Corden and Neary's (1982). On the surface, it may appear that such natural resources abundance can contribute to "economic growth, employment, and fiscal revenue." Nonetheless, in many situations, focusing on natural resources rather than diversifying the

economy undermines long-term economic development. Using a country that recently discovered oil as an example, this discovery led to a substantial increase in export revenues, which inevitably led to an increase in the real exchange rate. A boom in a tradable natural resource, such as oil, can contribute to a rise in the real exchange rate of an economy. Therefore, it is conceivable that the performance of the economy's non-booming tradable export sector could worsen.

The term 'resource curse' also called Dutch Disease indicates the inability of many resource-rich countries to fully gain benefits from their natural resource wealth and to meet the public welfare requirements of their citizens. Compared to their resource-poor neighbours, resource-rich nations have higher rates of conflict and authoritarianism, as well as lower rates of economic stability and economic growth. The Dutch disease came first into the spotlight in the 1970s following the North Sea oil and gas discovery. It was coined as “Dutch” in reference to the shrinking of manufacturing and rising unemployment in the Netherlands at the time. While the fiscal expansion as a result of the extraction of natural gas is a factor in what occurred in this case, it is still unclear to what extent the shrinkage of the non-oil tradable sector can be attributed to resource extraction alone. The experience of the Netherlands, however, spread fears of similar incidence to other industrial countries with hydrocarbon resources including the United Kingdom, which saw a shrinkage in manufacturing in the late 70s. The possibility of a Dutch disease in the UK triggered interest, which first started with the theoretical work of Codren and Neary (1982) and the empirical analysis of Bruno and Sachs (1982) on examining the Dutch disease in the UK.

The graph below depicts the evolution of sub-Saharan Africa's natural resources rent and the economic growth of the region:

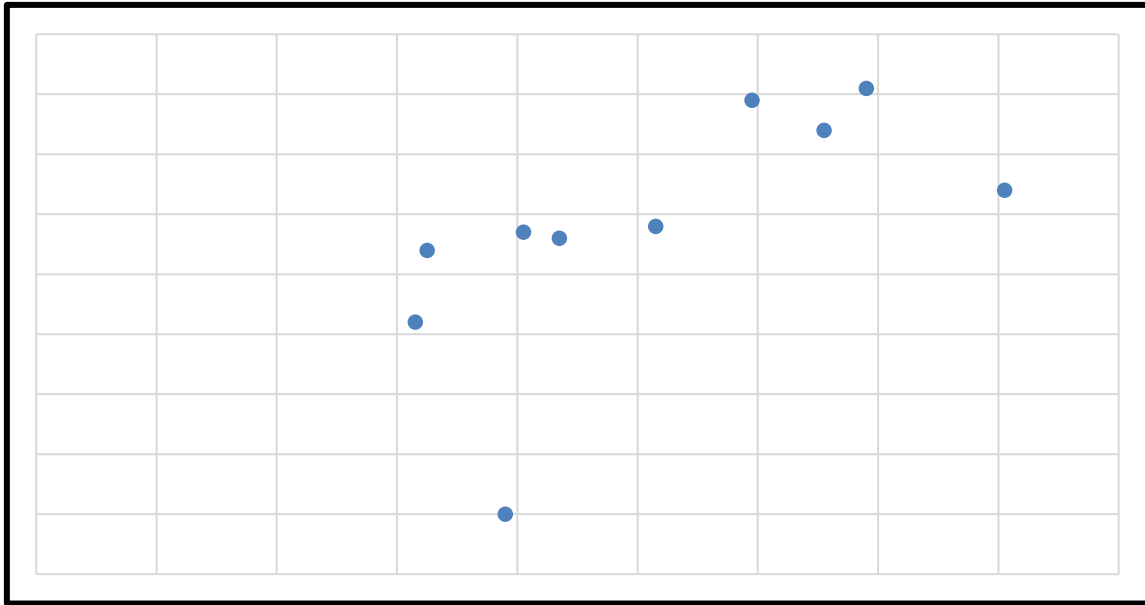


Figure 1.1: Sub-Saharan Africa Gross Domestic Product and Natural Resources Rents (2011-2020)

Source: Adopted from World Bank (2021)

Figure 1.1 shows that an increase in natural resource rents does not guaranty economic growth but a decrease in the rent negatively affects economic growth taking the year 2011 as an example. Several factors justify this decline in GDP and those factors varies from one country to another. Cote D'Ivoire, Mali and Central African Republic to name a few, were affected by political instability and conflicts which affected their economic growth while countries located on the east part of the continent were affected by natural disasters such as droughts and floods, which impacted agricultural production and food security. Other factors are such as high inflation which led to an increase in the cost of living and a decrease in consumer spending, weak fiscal and monetary policies which led to high budget deficits and currency depreciation.

1.2 Background of the Study

Sub-Saharan Africa is a region of the continent of Africa that extends at the south of the Sahara Desert. This area comprises all the African countries except 6 which are Algeria, Djibouti, Egypt, Libya, Morocco, and Tunisia. The remaining are countries categorised as

sub-saharan which are: Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, The Democratic Republic of Congo, Congo Republic, Cote D'Ivoire, Equatorial Guinea, Eritrea, Eswatini, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Tanzania, Togo, Uganda, Zambia, Zimbabwe.

Sub-Saharan Africa and Africa in general is endowed with abundant natural resources, that include minerals and fossil fuels. Africa is home to an approximate of 30 percent of the world's mineral reserves (Page, 2011), and the continent continues to generate new hydrocarbon and gas discoveries. Forty percent of the world's cobalt supply originates from the Katanga region of the Democratic Republic of the Congo. Central and southern Africa are wealthy in gold and diamonds, while countries bordering the Sahara Desert have enormous oil and uranium ore reserves. Additional natural resources include coffee, cocoa seeds, cotton, tea, aluminium, and timber, among others. The following table shows the list of natural resources by region.

Table1.1: Natural Resources by Regions

Region	Countries	Natural resources
West Africa	Benin, Burkina Faso, Cape Verde, Cote D'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, and Togo	Oil, gold, uranium, cocoa

Table 1.1 continued

Central Africa	Cameroon, Central African Republic, Chad, Congo (Brazzaville), Democratic Republic of Congo, Equatorial Guinea, Gabon, Sao Tome & Principe	Copper, cobalt, lithium, gold, oil, diamond,
Southern Africa	Angola, Botswana, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Sao Tome and Principe, South Africa, Eswatini, Zambia, and Zimbabwe	Gold, diamond
Eastern Africa	Burundi, Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Seychelles, Somalia, South Sudan, Sudan, Tanzania, and Uganda	Tanzanite, gold, nickel, oil,

Source: Al Jazeera (2022)

Because of problems with infrastructure and human resources, political instability, problems with government, and a lack of development policies and plans in many African countries, most of the continent's natural resources have not been used or explored. The production and exports of resource-rich economies in Africa are heavily focused on products made from natural resources, but there isn't much proof of structural change towards high-value-added activities outside of the natural resource sector. In many ways that measure growth, these resource-rich economies (except for South Africa and Botswana) are behind those that don't have a lot of natural resources.

Oil- and mineral-rich nations in Sub-Saharan Africa and other regions generate significant fiscal revenues from natural resources, as indicated by the proportion of these

income to the Gross Domestic Product (GDP) and the total revenues and export proceeds as a proportion of the whole value of exported commodities. If standard economic reasoning and conventional wisdom were correct, then SSA nations rich in minerals and hydrocarbons would have some of the most robust economies. The preponderance of these nations, however, are classified as low-income nations (Elbadawi & Nandwa, 2011). A phenomenon known as "the natural resource curse" has been observed to have a negative long-term effect on long-term economic development due to the abundance of resources, particularly minerals (Papyrakis, 2014).

Several explanations for the misfortune of natural resources have been presented. According to Barrows (2018), a possible cause for the curse of natural resources is that mineral wealth tends to contribute to competition over existing assets, resulting in inadequate institutions and slower economic growth. The argument presented here is that the large revenues that can be obtained from natural resources encourage governments and private agents to take part in rent-seeking behaviour, voracity, corruption, or even civil conflict, thereby impeding entrepreneurial activity and other growth-promoting activities. When the anticipated net payoffs from carrying out unproductive activities to appropriate existing wealth (e.g., corruption, conflict) exceed the expected net payoffs from engaging in productive activities to create wealth, rent seeking is encouraged.

Regional differences in the impact of foreign inflows on the real exchange rate have been observed. In a study on foreign aid and the real exchange rate in 12 francophone West African nations, Quattara and Strobl (2004) found that foreign aid transfers have no effect on natural resource curse. The volatility of resource revenues is another factor that contributes to the curse of natural resources. This volatility is in part caused by the generally low-price elasticities of supply for natural resources.

Moreover, Sub-Saharan Africa is no stranger to the phenomenon of high external debt. The Dutch disease syndrome, a natural resource misfortune, is predominantly responsible for this debt. Due to Africa's dependence on natural resources, the region is susceptible to commodity price fluctuations. The foreign exchange treasury empties as commodity prices decline. Commodity dependence is made worse in countries that both manufacture and export agricultural goods and metals (Lamens, 2015).

One of the commonly described phenomena is known as the "institutional impact of natural resources." In their study, Martin and Subramanian (2003) discovered empirical evidence supporting the notion that particular natural resources, such as oil and minerals, have a significant and non-linear detrimental effect on economic growth. This negative impact is primarily attributed to the adverse influence these resources have on the quality of institutions. Isham et al. (2005) stated that countries engaged in the exportation of fuels, minerals, plantation commodities, as well as coffee or cocoa, exhibit inferior performance across many governance metrics. This finding remains consistent even after accounting for other potential factors influencing governance outcomes.

According to Mulwa and Mariara (2016), the curse of natural resources can be explained by market or institutional quality mechanisms, according to existing schools of thought. Due to the fact that relative price levels and non-resource GDP are positively and significantly correlated, their test of the Dutch disease hypothesis reinforced the theory that market-based mechanisms can partially explain the natural resource curse in Africa. This indicates that relatively high price levels have an impact on the competitiveness of other sectors, particularly in oil-rich African economies; consequently, as predicted by the theory, there is crowding out of certain sectors.

In addition, the extraction of basic natural resources has not traditionally been viewed as a contributor to economic growth. An abundance of natural resources appears capable of generating "economic growth, employment, and fiscal revenue". The resource curse is built on the negative outcomes that happen when natural resources aren't used properly, especially in less developed countries (Mahama & Gakpe, 2015). And focusing on natural resources instead of economic diversification often hurts economic growth in the long run. Table 1.1 shows to how many percent natural resources contribute to the GDP of the Sub-Saharan Region.

Table 1.2 : Percentage of Natural Resource Rents to Sub-Saharan African GDP

Year	in % of GDP
2010	13.1
2011	16.1
2012	13.8
2013	11.9
2014	10.3
2015	6.3
2016	6.5
2017	8.1
2018	8.7
2019	7.8
2020	8.5

Source: World Bank (2021)

Table 1.2 shows that natural resources rents in Sub-Saharan Africa have been declining progressively. This can be explained by different factors affecting the region mostly relating the decline to natural resource curse.

There are many reasons related to the resource curse, either political or economic, ranging from bad governance to mismanagement of resources.

A large increase in natural resource revenues can hurt other parts of the economy, especially industry that relies on exports, by causing inflation or an increase in the exchange rate and moving labor and capital to the resource sector. Inflation and an increase in the exchange rate can hurt big parts of the economy in a few years, but their effects can last for decades. The bad effects of natural resources on other industries have been well studied in a number of countries, all of which have either stopped making things or seen a sharp drop in making things.

The Natural Resource Governance Institute (2015) said that these effects can be lessened if the country has the ability to turn resource revenue into investments like roads and electricity; if the government uses resource revenues to make investments in the economy that boost growth in non-resource sectors; or if the government invests some of its resource revenues in foreign assets.

The second reason for the resource curse is that many fiscal systems and rules about how companies and governments share gains don't compensate the state and communities for the loss of natural resources and the damage or loss of income that comes with that. When countries want to support the use of their resources so much that they cut taxes and royalties without knowing how much their resources are worth, bad deals can happen. For example, the Average Effective Tax Rate (AETR) on many oil projects in South Africa is lower than 50%, while the AETR on mining projects in Cameroon and the Democratic Republic of the Congo is less than 40%. Angola's AETR, on the other hand, is higher than 70%.

In addition, capital-intensive (rather than labor-intensive) extractive industries offer the local population few non-tax benefits, such as employment opportunities. Despite frequently having high standards for local content, including employment, local business expansion, and enhanced workforce skills, there may be a limited number of actual openings.

The industry has a very low level of employment relative to the scale of its investments and the number of jobs it generates, and the equipment required to implement these investments is typically imported and highly specialized. In some situations, such as the Democratic Republic of the Congo, labor exploitation is a problem.

On the opposite side, we have political reasons. Natural resource wealth, specifically hydrocarbon wealth, has increased the possibility that governments will evolve or stay authoritarian. because of taxation. In general, political scientists find that governments are more responsive to their constituents and more likely to transition to democracy when government spending is contingent on citizen taxation. When nations generate substantial revenues from natural resources, they become less reliant on taxation, and citizens consequently feel less invested in the national budget. Also less direct is the relationship between politicians and government officials and citizen demands or requests. In addition, when revenues from resource are kept confidential, citizens lack a explicit comprehension of whether or not the revenues are being efficiently spent.

Another element that needs to be considered is government expenditure. The collection of resource revenues by governments can experience significant variations on an annual basis due to volatility in commodity prices and production levels. Numerous empirical investigations have consistently revealed the immense difficulties associated with efficiently allocating fluctuating and uncertain financial resources. Governments often experience the detrimental effects of economic cycles characterized by periods of expansion and contraction. During periods of economic growth, governments tend to allocate resources towards long-term projects, such as the construction of airports and monuments. However, when revenues diminish, governments are compelled to implement austerity measures, resulting in difficult and often painful reductions in spending. Resource-rich governments

often exhibit an inclination towards excessive expenditure on government salaries, ineffective fuel subsidies, and expensive monuments, while simultaneously displaying a lack of investment in critical sectors such as healthcare, education, and other social services.

According to some studies, resource-rich nations have weaker institutions because it is easier for elites to seize or steal huge amounts of money. According to this theory, significant single-point revenue sources, such as an energy project, can be administered outside the normal budgeting process and are relatively easy for wealthy individuals to capture. These elites in nations with abundant natural resources are less likely to invest in productive enterprises, such as manufacturing industries that create jobs, and instead pursue rent-seeking, i.e. the struggle for control of these resources. According to a number of studies, the elite's emphasis on rent-seeking and rent-grabbing promotes corruption and hinders institutional growth. According to the theory, nations with elite rent-seekers and rent-seizers have weakened institutions and lower levels of public service delivery.

Moreover, natural resources frequently occasion and perpetuate internal disputes, as several groups compete for power of the resources or use them to finance their battling. Civil conflicts are twice as likely to take place in oil-producing countries as in countries that do not produce oil. Examples of SSA nations that have encountered or are experiencing conflict include the Democratic Republic of the Congo, Nigeria, and Angola.

Currently, Mali, Burkina Faso and Niger are the three countries that have recently been involved in conflict. Others, such as Sudan, Chad, the Central African Republic, and the Democratic Republic of the Congo, have been at war for many years, and it continues to this day. In contrast, conflict has been intermittent in countries like Burundi, Nigeria, and South Africa.

1.2.1 Sub-Saharan Economic Outlook

In a number of African nations, high levels of public debt prevent the implementation of countercyclical and socially inclusive policies. In nations such as Cabo Verde, Congo, Djibouti, Eritrea, Mozambique, and Sudan, the public debt exceeds one hundred percent of GDP. Some economies with reduced debt-to-GDP ratios, such as Zimbabwe, are facing rising repayment obligations. Over the past decade, expansionary fiscal policies and knock-on effects from the 2014/2015 commodity price shock have contributed to the increase in public debt, while investors' search for yield has encouraged external borrowing. As a consequence of fiscal consolidation efforts, the expansion of debt is moderating; however, there are substantial variations between countries. Several countries continued to issue Eurobonds in 2019. South Africa raised \$5 billion in its greatest bond offering to date, while Benin and Ghana raised over \$7.6 billion collectively. The recent increase in the issuance of bonds denominated in a foreign currency has raised concerns about the debt's sustainability, as the outlook for economic growth remains fragile. Moreover, countries with significant currency and maturity discrepancies may have difficulty servicing their debt.

In Africa, diversifying the economy is a top priority but has yet to acquire significant traction. As growth continues to track commodity price cycles, it is evident that the productive structure must be systematically diversified. The industrialization is central to this transformation. However, with the exception of South Africa, economic diversification on the African continent remains minimal, despite recent improvements in a few nations, such as Ethiopia and Rwanda, due to driven industrial policies. In addition, global value chains tend to avoid the continent, as the majority of African nations continue to export primarily raw or minimally processed products.

Sub-Saharan Africa will have the slowest growth in the globe, according to the International Monetary Fund (IMF). Over the period from 2020 to 2025, the cumulative per capita GDP growth for SSA is projected to be 3.6%, which is lower than the global average of 14%. The average per capita income of non-resource-dependent countries is projected to raise by 21,6 percent by 2025, whereas oil exporters, which include some of the most populous countries in the region, will experience no per capita income growth during this period.

As a result of COVID-19 in 2020, more than 32 million more individuals in sub-Saharan Africa remained in extreme poverty, more than four times as many school days were missed as in advanced economies, and employment dropped by about 8.5%. In terms of getting by, the per capita income is back to where it was in 2013.

Sub-Saharan Africa is also home to different trade blocs that were created to facilitate trade and increase partnership between countries. Here are a few of them:

-The Southern African Development Community (SADC) was established in 1980 and it aims to support the economic growth and develop the socio-economic status of member countries. SADC currently has 16 member states: Angola, Botswana, Comoros, Democratic Republic of Congo (DRC), Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, United Republic of Tanzania, Zambia and Zimbabwe. The SADC region has a population of 350 million people and GDP of \$721 Billion. Total import and export figures are \$185 Billion and \$191 Billion respectively. The SADC Free Trade Area (SADC FTA) was established in 2008 to promote international trade among member countries. All the member states except Angola and DRC participated in the Free Trade Area. SADC (Southern African Development Community), COMESA (Common Market for Eastern and Southern Africa) and EAC (East African

Community) formed the Africa Free Trade Zone (AFTZ) in 2008. AFTZ consists of 26 countries.

-The Common Market for Eastern and Southern Africa (COMESA) is a free trade area. Currently, there are 21 countries that are part of the COMESA agreement. These countries are: Burundi, Comoros, D.R. Congo, Djibouti, Egypt, Eswatini, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Somalia, Sudan, Tunisia, Uganda, Zambia, Zimbabwe. The former members of COMESA are Angola, Lesotho, Mozambique, Namibia and Tanzania. As of 2018, the Common Market for Eastern and Southern Africa covered a population of 560 million and a GDP of \$768 Billion.

- The Economic Community of West African States (ECOWAS) was founded in 1975 in order to promote economic cooperation and to increase living standards in member countries. ECOWAS has its own free trade area since 1990. The members states are adopting a common import tariff. ECOWAS currently has 15 member countries: Benin, Burkina Faso, Cabo Verde, Cote d'Ivoire, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo. The ECOWAS Free Trade Area consists of member countries and it is the largest active free trade area in West Africa. The organization is headquartered in Abuja, Nigeria. ECOWAS also has monetary policies for its member countries. West African Economic and Monetary Union (UEMOA) is a common organization for ECOWAS members. These countries share CFA franc as the common currency. These countries are Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, and Togo. The second monetary organization founded by ECOWAS member states is West African Monetary Zone (WAMZ). The six founding members of WAMZ are planning to introduce a common currency, called Eco. The members are Gambia, Ghana, Guinea, Liberia, Nigeria and Sierra Leone.

- The Economic Community of Central African States (ECCAS) promotes regional economy in Central Africa. The foundation of ECCAS goes back to The Customs and Economic Union of Central Africa (UDEAC) that was established in 1964. The members states are Angola, Burundi, Cameroon, Central African Republic, Chad, Congo (Brazzaville), Democratic Republic of Congo, Equatorial Guinea, Gabon, Rwanda, Sao Tome et Principe. The Economic and Monetary Community of Central Africa is a side organization founded by 6 countries that share the same currency (the CFA franc). It aims to promote economic growth and form monetary union among member states.

- The East African Community (EAC) is an international organization founded in 2000 by 6 member countries in the Great Lakes Region. Its member countries are Burundi, Kenya, Rwanda, South Sudan, Tanzania, and Uganda. The organization's administrative center is in Arusha, Tanzania. EAC promotes free trade area and widens economic cooperation among member countries. The organization achieved East African Customs Union and established a common market for goods. In 2008, the free trade area of EAC is expanded into the SADC region and COMESA region. Monetary union is one of the new aims of EAC. According to the Customs Union, a common external tariff is exercised by member countries. Also, the trade among members is duty-free. The rates of tariffs depend on the type of material: Raw materials (0%), intermediate products (10%), finished goods (25%).

1.2.1.1 West Africa

Western part of Africa consists of 16 countries namely Benin, Burkina Faso, Cape Verde, Cote D'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, and Togo. Being one of the largest economies in west Africa and in Africa in general, Nigerian economy has been hugely impacting the

neighbouring countries at large. In 2016, the country fell into recession which lasted for about 1 year and went back into recession in 2020 due to covid-19, which was said to be the worst since the 1980s. According to the world bank, oil caters for more than 80% of Nigeria's exports, 30% of its banking-sector credit, and 50% of the overall government revenue. Due to African countries relying heavily on their natural resources, the African Development Bank has called on countries to establish a dynamic industrial base with manufactured exports.

Fifteen out of sixteen of the west African countries are members of the Economic Community of West African States (ECOWAS) which is an organization with a mandate of promoting economic integration in all fields of activity of the constituting countries. Those countries exclude Mauritania. Whereas 8 out of those countries are member of the West African Economic and Monetary Union (WAEMU) which is a regional organization including Benin, Burkina Faso, Cote D'Ivoire, Guinea Bissau, Mali, Niger, Senegal, and Togo. They share the same money, West African francs (CFA francs), monetary policies, and French as an official language.

Despite being independent, the WAEMU countries continued to keep their foreign exchange reserves with the French Central Bank. Since its creation in 1945, the CFA franc has always been associated to the euro and its convertibility is guaranteed by France. One of the objectives of ECOWAS is to have a common currency called the "Eco" however, this initiative has been difficult to implement one of reasons being the fact that CFA franc is controlled by the euro. In 2020, the WAEMU countries decided to end the monetary cooperation with France but the fixed parity of the future Eco currency with the euro will have to be maintained.

Table 1.3: Nominal GDP in West Africa

Year	in billions of USD
2011	348.2
2012	387.1
2013	418.4
2014	459.6
2015	408.7
2016	355.9
2017	404.2
2018	466.5
2019	509.8
2020	527.2

Source: World Bank (2021)

Table 1.2 shows that nominal GDP in western Africa has been growing steadily over the years. However, the nominal GDP fell by approximately 50 billion between 2014 and 2015 and similarly between 2015 and 2016. After the years 2016, the GDP has increased by 51 billion in 2017, 62 billion in 2018, 33 billion in 2019 and 18 billion in 2020. The lowest growth in the region was 31billion recorded in 2013.

The following figure shows the GDP growth of western African countries in 2022.

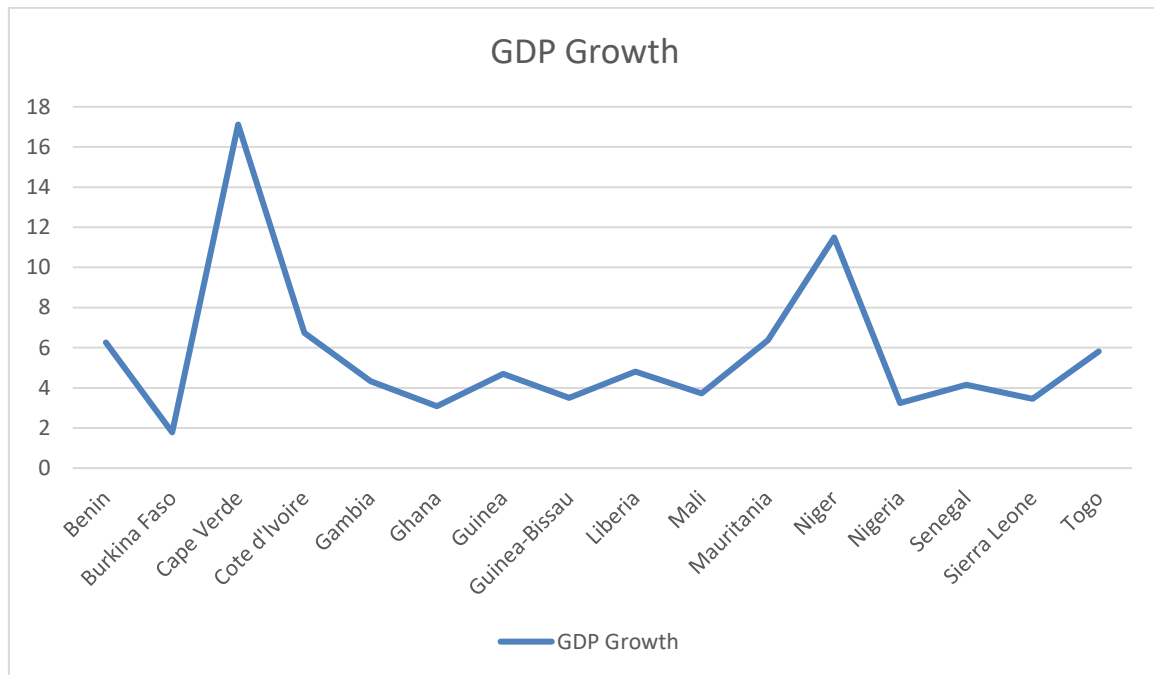


Figure 1.2: GDP growth of Western African countries in 2022

Source: World Bank (2023)

In 2022, Cape Verde had the highest GDP growth compared to other west African countries. According to the African Development Bank Group (2024), renewable energy facilitated Cape Verde's GDP growth by supplying reduced energy import costs and an increase in private consumption and exports. Other factors that helped the GDP growth are such as digital economy, construction, transport and tourism. Niger's economy rebounded sharply in 2022, following two years of sluggish growth. This is mostly owing to a successful agricultural season, which included adequate rainfall and the increase of irrigated acreage. Burkina Faso's GDP growth is the lowest in the region due to the decrease of extractive activities following the closure of several mines for security reasons. Ghana also had a slow GDP growth because of macroeconomic instability, global financial tightening and spillover effects of Russia's invasion of Ukraine. Figure 1.3 shows the GDP per capita of each western African country.

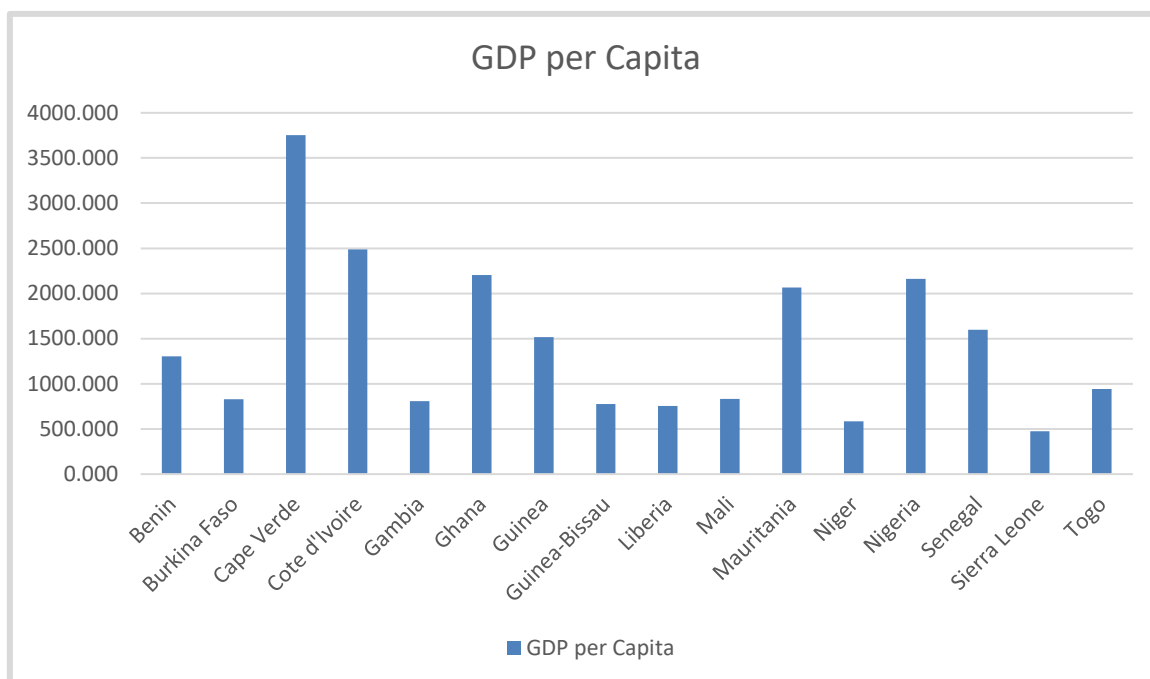


Figure1.3: GDP per Capita of West African countries in 2022

Source: World Bank (2024)

Figure 1.3 shows that the GDP per capita of Cape Verde is the highest compared to other western African countries followed by Cote d’Ivoire then Ghana. This is due to the fact that Cape Verde’s economy is service-oriented with commerce, transport, tourism, and public services accounting for about three-fourths of GDP (LLOYDS Bank, 2024). However, Cote d’Ivoire’s economy is mainly driven by industrial and service sectors, continued high levels of public investment and the resilience of private investment. Ghana’s economy is strongly driven by the exports of cocoa, gold and oil (World Bank, 2024). Meanwhile, Sierra Leone has the lowest GDP per capita followed by Niger then Liberia. According to the African Development Bank (2023) Sierra Leone’s economy is highly vulnerable due to poor governance, limited fiscal space and extreme climate change events (high temperatures, inconsistent weather patterns, recurrent storms, floods, mudslides, and a rising sea level). Niger has a poorly diversified economy centred on food crops, livestock and some of the world’s largest uranium deposits. Niger’s poor economic performance is

compounded by a security crisis in border areas, extreme vulnerability to exogenous shocks, and inequalities that disproportionately affect girls, women, and children (LUXDEV, 2024). On the other hand, Liberia's low GDP per capita is a result of economic shocks, conflicts, volatility of international prices, health crises and subsequent persistent economic contraction combined with high population growth (World Bank, 2024).

1.2.1.2 Central Africa

Central African countries are Cameroon, Central African Republic, Chad, Congo (Brazzaville), Democratic Republic of Congo, Equatorial Guinea, Gabon, Sao Tome & Principe as defined by the UN Subregion. This region encompasses the equator and contains the Congo Basin, home to the world's second-largest rainforest. According to the EU, the primary export from the central African region to Europe is crude oil, followed by copper, timber, cocoa, bananas, and diamond.

In terms of health and economy, Cameroon was the hardest-hit country in Central Africa by the COVID– 19 pandemic in 2020. Thus, the export activities of the services, manufacturing, and agro-industrial sectors, especially trade, have slowed significantly. Due to its high level of external debt and its heightened susceptibility to external disruptions, the Central African region is at a high risk of debt distress.

The majority of central African nations are experiencing an economic downturn due to the temporary suspension of hydrocarbon production, the primary economic driver, and the closure of borders to contain the pandemic, which slowed trade. African Development Bank identifies the region's absence of diversification of its oil-based economy as its primary risk factor.

Inflation has been maintained below the Central Africa Economic and Monetary Community convergence threshold of 3% (2.9% in 2020, compared to 2.5% in 2019), with the exception of the Democratic Republic of Congo, where inflation rose from 4.5% in 2019 to 13% in 2020. Despite having a variety of natural resources, Central Africa is the slowest growing GDP in comparison to the other regions. Table 1.3 shows the nominal GDP in Central Africa.

Table 1.4: Nominal GDP in Central Africa

Year	in billions of USD
2011	120.6
2012	131.3
2013	142.4
2014	152.8
2015	133.6
2016	115.2
2017	127.8
2018	141.7
2019	152.4
2020	144.8

Source: World Bank (2021)

Central African region has seen a steady increase of roughly 10 billion USD from 2011 to 2014. In the years 2015 and 2016, the region lost almost 20 billion of its nominal GDP which was gained back in the years that followed. However, in 2020, the nominal GDP dropped again due to COVID-19.

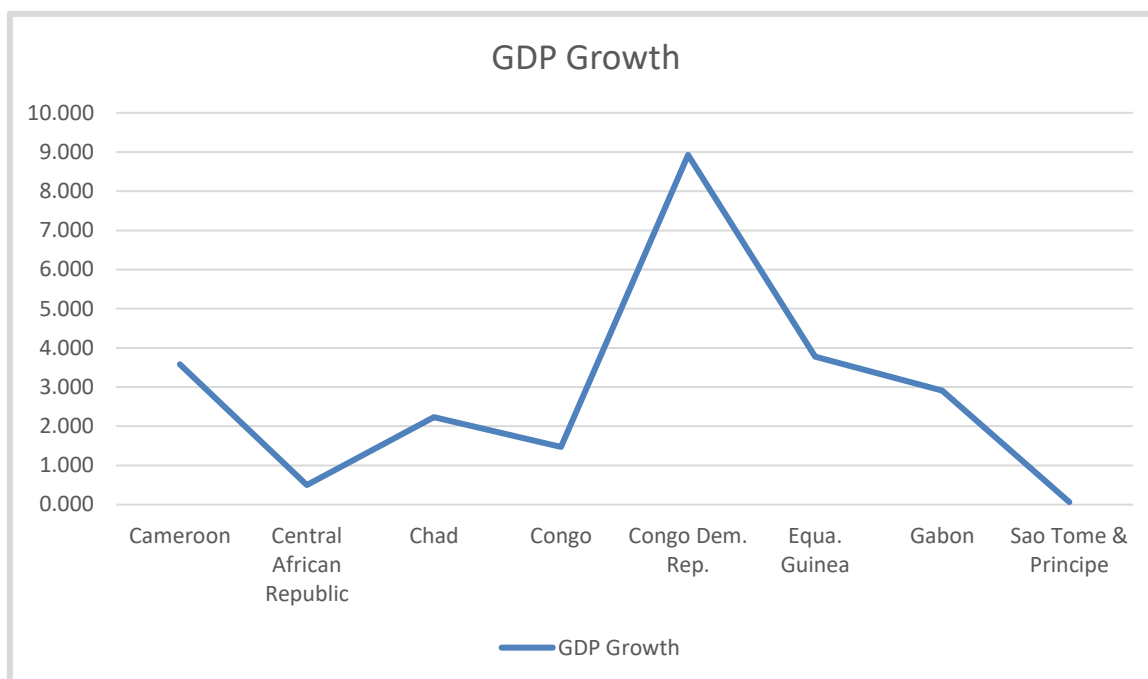


Figure 1.4: GDP growth of Central African countries in 2022

Source: World Bank (2023)

As a small island development state, Sao Tome and Principe relies on tourism, which accounted for 43.7% of foreign currency revenue in 2021, as one of the main contributors to the economy. However, due to the effect of COVID-19 on tourism, the country's GDP growth declined from 1.9% in 2021 to 0.9% in 2022. Central African Republic however was affected by floods and fuel shortages. Central African Republic faced high inflationary pressures and acute levels of food insecurity, with nearly half the population affected. Congo Democratic Republic has high GDP growth in 2022 thanks to the extractive sector which grew by 20.8% and recovery in the non-extractive sector which grew by 3.2%, driven by services despite a deteriorating security situation in the east of the country. Economic growth was driven on the demand side by robust exports and investment which increased considerably (23.8% and 18.6% respectively). According to the World Bank (2024), Equatorial Guinea has recorded an average negative GDP growth from 2014 to 2021 despite being the third largest producer of oil in Sub-Saharan Africa. The economy recovered in

2022 after 7years of recession and this his recovery was mainly driven by a pickup in hydrocarbon output. The following figure shows the GDP per capita of central African countries

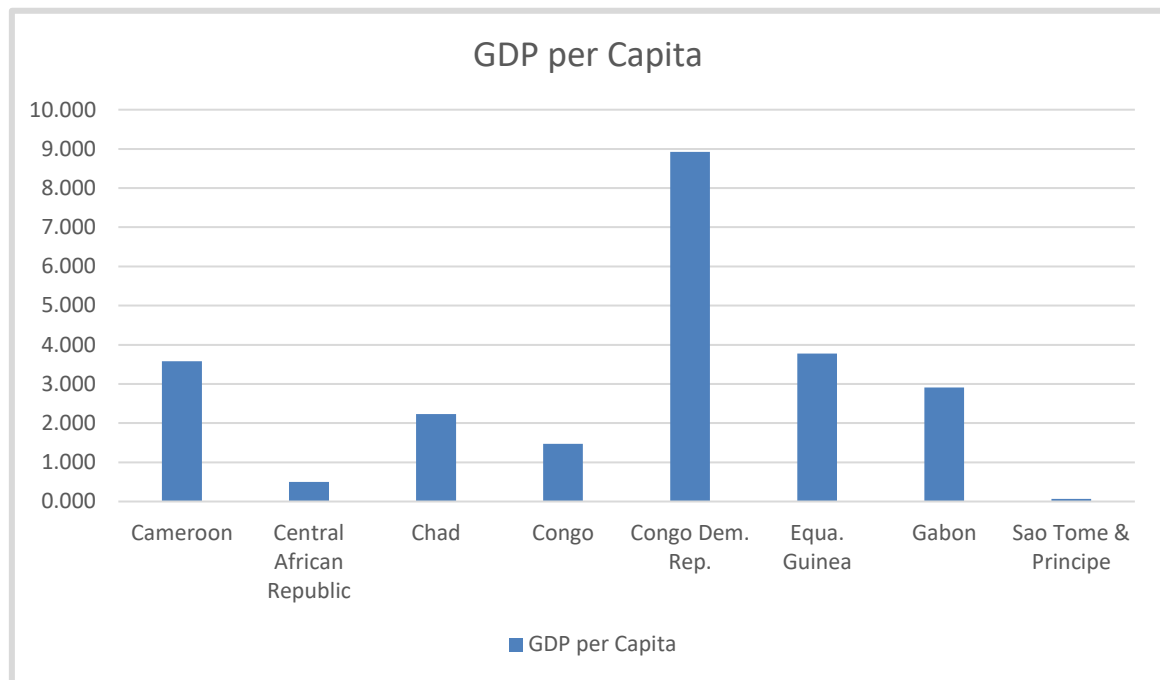


Figure 1.5: GDP per capita of central African countries in 2022

Source: World Bank (2023)

From figure 1.5, Congo Democratic Republic has the highest GDP per capita in central African region. Congo Democratic Republic depends heavily on commodity trade, particularly diamond, cobalt, and so on. The next country in the region with high GDP per capita is Equatorial Guinea. The country's GDP per capita was driven by the strength of the non-oil sector and the household demand. Sao Tome and Principe has the lowest GDP per capita in the region followed by Central African Republic. On one hand, Sao Tome and Principe's low GDP per capita is due to the lingering effect of the COVID-19 pandemic on tourism, coupled with Russia and Ukraine war, which disrupted global trade. On the other

hand, Central African Republic' GDP is affected by fuel shortage, climate shocks, food and political insecurity.

Countries from this region are members of the Central African Economic and Monetary Community (CEMAC) except the Democratic Republic of Congo and they all use the same currency which is CFA francs. And those countries keep the majority of their foreign exchange reserves in the French Treasury till date.

1.2.1.3 Southern Africa

In the southern part of Africa, there are countries like Angola, Botswana, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Sao Tome and Principe, South Africa, Eswatini, Zambia, and Zimbabwe. All those countries' economic growth have declined in 2020 mostly due to COVID-19. The mining, manufacturing, tourism and other sectors were badly affected, only agriculture, in some of the countries performed well.

Since 2016, Angola's oil-based economy has been in recession, causing its debt-to-GDP ratio to rise from 57.1% in 2015 to an estimated 120.3% in 2020. Beside the debt, unemployment increased from 30% in 2019 to 34% in 2020. Table 1.4 shows the nominal GDP of the region:

Table 1.5: Nominal GDP in Southern Africa

Year	in billions of USD
2011	607.6
2012	640.8
2013	668.3
2014	706.5
2015	645.6

Table 1.5 continued

2016	592.5
2017	636.7
2018	681.6
2019	705.5
2020	655.7

Source: World Bank (2021)

Southern African nominal GDP has been rising regularly like all the other Sub-Saharan regions from 2011 to 2014. The nominal GDP decreased in 2015 and 2016 but increased again in 2017 till 2019. In 2020, due to the effect of COVID-19, the nominal GDP of the region dropped from 705 billion (in 2019) to 655 billion.

The region's economic outlook continues to confront significant challenges, including high unemployment, weak commodity prices, fiscal strain, rising debt, and high inflation. A large number of people are currently engaged in informal employment, such as subsistence farming, as opposed to formal employment. Figure 1.6 shows the GDP growth of southern African countries

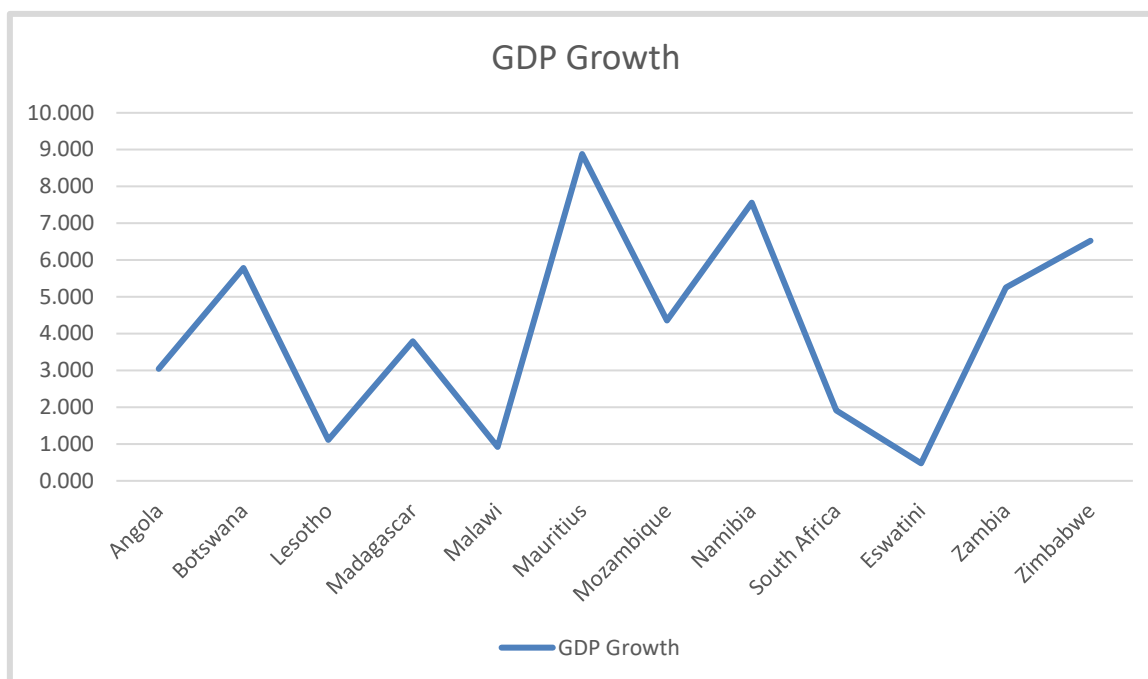


Figure 1.6: GDP growth of Southern African Countries in 2022

Source: World Bank (2023)

Having the lowest GDP growth in the region, Eswatini's GDP growth was recorded at approximately 0.5% in 2022. This minimal GDP growth was driven by the spillover effects from South Africa's weak growth (1.9%) and a decrease in demand due to an upsurge in inflation, an increase in the cost of credit, and fiscal constraints. Eswatini is a small, open economy bordering South Africa and Mozambique with South Africa being its main trading partner hence a slump in South African economy will significantly affect Eswatini's economy. Malawi has also recorded a weak GDP growth in the southern region (0.9%). Given the country's reliance on agriculture and the climate shocks that occurred during that period, Malawi's GDP fell from 2.2% in 2021 to 0.8% in 2022. Other factors explaining this drop in GDP growth are such as global logistical challenges and inflation. In contrast, Mauritius peaked to 8.7% occasioned by sustained policy support and the lifting of travel restrictions and recovery in the tourism sector. The second highest GDP growth recorded in the region is in Namibia. Namibia's GDP growth was encouraged by the lifting of COVID-

19 related restrictions and the recovery in primary and secondary industries including the mining sector and investments in oil exploration (World Bank,2024).

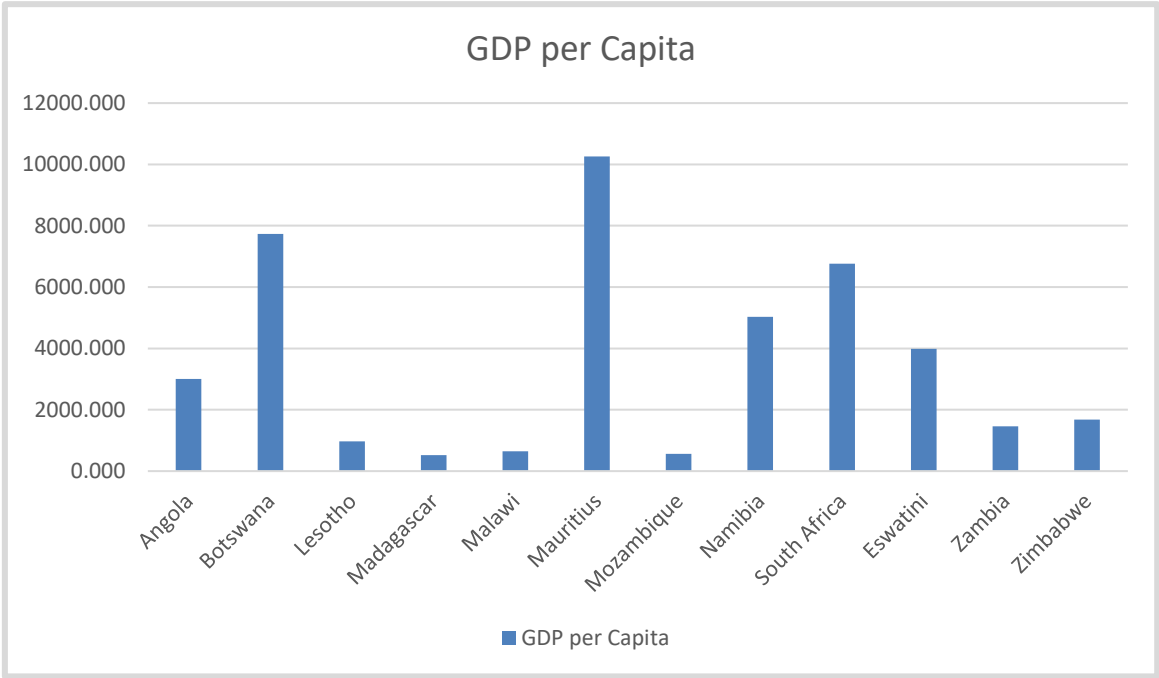


Figure 1.7: GDP per Capita of Southern African Countries in 2022

Source: World Bank (2023)

According to the World Bank (2024) Mauritius is a beacon of economic success in Sub-Saharan Africa with its GDP per capita in 2022 being the second highest in Sub-Saharan region after Seychelles. This remarkable achievement was rooted in a stable democracy and a relatively diversified economy that now includes tourism, manufacturing, fisheries, ICT, and financial services. Botswana’s robust institutions, major diamond wealth and cautious economic management paired with a relatively small population helped in achieving high GDP per capita. Contrary to Mauritius and Botswana, Madagascar and Mozambique have the lowest GDP per capita in southern African region. Mozambique’s economy is mainly driven by the service sector, agriculture and industries while the Madagascar’s economy is made by agriculture (including fishing and forestry), tourism, services and industry sectors.

1.2.1.4 Eastern Africa

According to the UN, East African region consists of 13 countries: Burundi, Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Seychelles, Somalia, South Sudan, Sudan, Tanzania, and Uganda. East Africa's economic growth is awaited to recover to an average of 4.1% in 2021, up from 0.4% posted in 2020, according to the African Development Bank's latest economic outlook report for the region. In 2022, average growth is projected to hit 4.9%.

Table 1.6: Nominal GDP in East Africa

Year	in billions of USD
2011	328.9
2012	355.6
2013	388.2
2014	424.9
2015	432.5
2016	411.2
2017	445.9
2018	488.4
2019	523.7
2020	501.9

Source: World Bank (2021)

Nominal GDP in east Africa has been increasing regularly from 2011 to 2015. However, just like other regions, the GDP dropped in 2016. This decline in GDP in 2016 was explained by the deterioration of the external environment and the decline in private investment due to the slow policy response in the region (IMF, 2016). In the years that

followed, the region saw a steady growth which was halted in 2020 by the COVID-19 pandemic. The following figure shows the GDP growth of Eastern African countries in the year 2022.

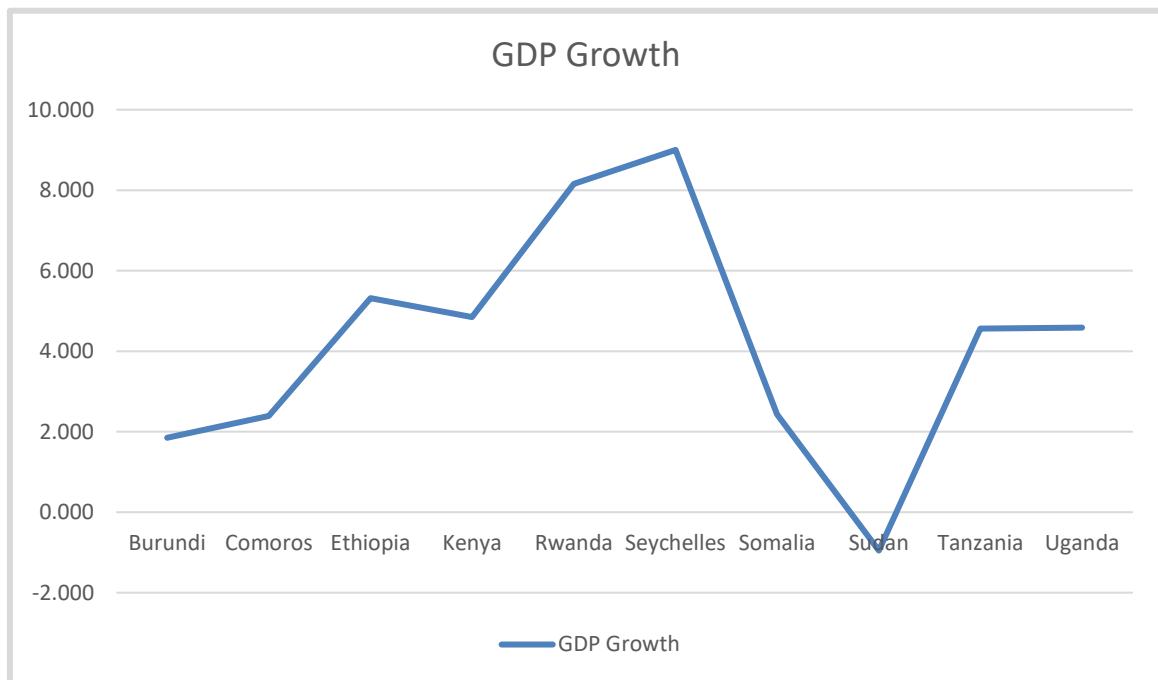


Figure 1.8: GDP growth of Eastern African Countries in 2022

Source: World Bank (2023)

Sudan's GDP growth in 2022 is low due to different factors such as inflation, loss of oil revenue and internal conflicts that includes two of the longest-lasting civil wars on the African continent. Equally, Burundi's economy was weakened by the political crisis and internal insecurity of 2015, which led to the withdrawal of most external aid, by the COVID-19 pandemic, and by the inflation which resulted in soaring food and fuel prices. But contrary to its neighbour Burundi, Rwanda's GDP growth peaked to 8.2% driven by the strong growth in industry, services, agriculture and construction sectors. And despite being exposed to the external shocks due to the overreliance on imports, Seychelles GDP growth in 2022 was the highest in Eastern Africa facilitated by tourism, fisheries, increase of household consumption and increase of investment.

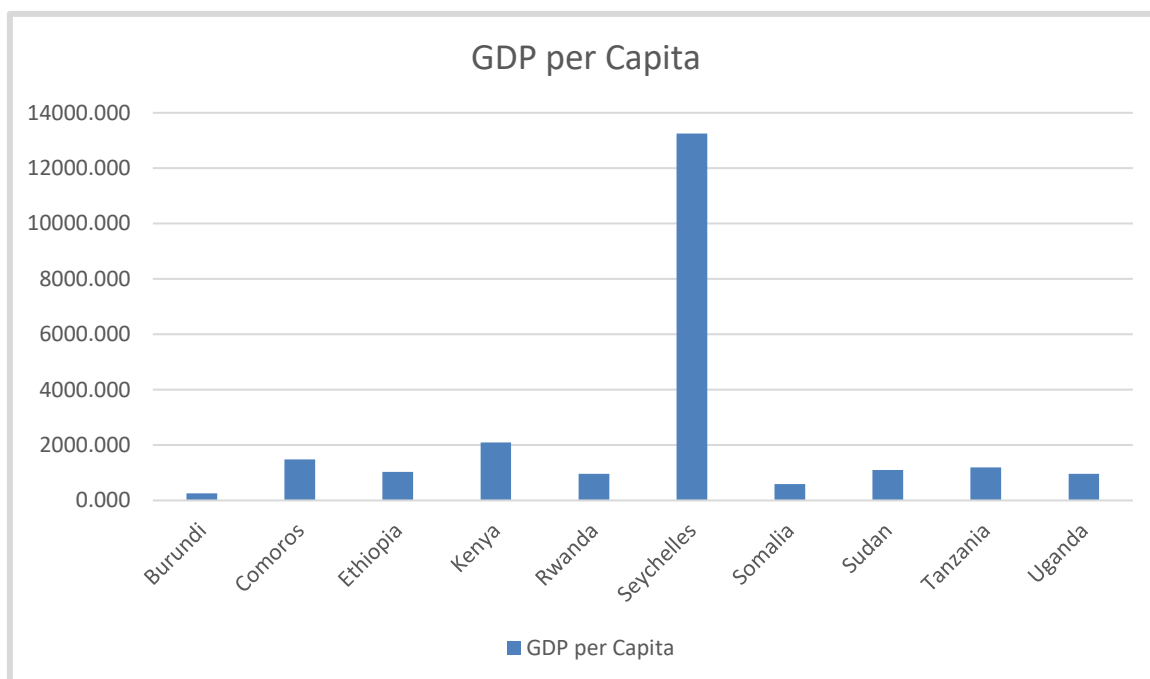


Figure 1.9: GDP per Capita of Eastern African countries in 2022

Source: World Bank (2023)

Figure 1.9 shows that Seychelles has a very high GDP per capita not only the highest in the Eastern region but it is the highest in the whole Sub-Saharan region. Seychelles is followed by Kenya then Comoros and Burundi has the lowest GDP per capita in the region followed by Somali and Rwanda. Seychelles is the most prosperous nation in Sub-Saharan Africa. The economy remains highly dependent on tourism, accounting for 31% of GDP and 41% of exports, making it highly vulnerable to external shocks. The fisheries sector is the second pillar of the economy, with growing investor interest in the blue economy sector. While Burundi's economy is dependent on agriculture especially coffee crop which accounts for 80% of foreign exchange earnings (World Bank, 2024).

East Africa is the only African region that escaped recession in 2020. This outcome was due to strong performance in agriculture, which was the main driver of growth, and sustained public spending on large infrastructure projects. East Africa is experiencing an economic transformation from mainly agriculture-based to more service-oriented activities.

But the transition to higher value-added activities that marks structural transformation has been slow, and some countries in the region are experiencing deindustrialization.

In 2020 East Africa's fiscal deficits increased due to falling domestic revenues as lockdowns took a toll on the countries' economies. However, inflation remained stable thanks to moderating food inflation and lower energy inflation. Several East African countries are experiencing substantial risk of debt distress due to declining government revenues, large infrastructure financing needs, domestic or external conflicts, and significant external headwinds in commodity prices and exchange rates.

1.3 Foreign Direct Investment in Sub-Saharan Africa

Foreign direct investment (FDI) is a category of cross-border investment in which an investor resident in one economy establishes a lasting interest in and a significant degree of influence over an enterprise resident in another economy. Ownership of 10 percent or more of the voting power in an enterprise in one economy by an investor in another economy is evidence of such a relationship. FDI is a key element in international economic integration because it creates stable and long-lasting links between economies. FDI is an important channel for the transfer of technology between countries, promotes international trade through access to foreign markets, and can be an important vehicle for economic development. According to Xiaoying and Xiaming (2005), FDI helps economic growth in both direct and indirect ways through its interaction terms. In developing nations, the interaction between FDI and human capital has a substantial positive influence on economic growth. FDI in SSA has been the lowest in the world except in 2020 where it was the second last, Europe being the region with the lowest FDI.

FDI has been a catalyst for economic growth and development in Africa, driven by factors such as abundant natural resources, growing markets, and significant growth rates.

This shows that SSA countries are open to foreign direct investment in different sectors. Different countries have different policies to handle FDI inflow in their countries, for instance the NIPC Act allows foreign investors to undertake any type of business in Nigeria (other than the prohibited businesses listed in the negative list in Section 32 of the NIPC Act, which applies equally to Nigerians and foreigners) and own up to 100% equity in Nigerian subsidiaries, subject to the specific requirements while the case is different in other countries like Tanzania where the investors need to have a limited amount of share. In Tanzania, foreigners are not permitted to hold or conduct their exploration/mining activities using Primary Mining Licenses, some mining projects may be authorized to be run jointly by Tanzanians and foreigners on a 50/50 equity. In other words, in Nigeria foreign investors receive the same treatment as local investors in different angles including tax payment, while in Tanzania foreign investors need to have joint ventures with locals.

However, challenges such as political instability, corruption, inadequate infrastructure, and regulatory uncertainties still hinder FDI flow to Africa. Despite these challenges, Africa remains an attractive investment destination with untapped potential, especially in sectors like communications, renewable energy, banking services, and others.

Table 1.7: SSA's Foreign Direct Investment in % of GDP

Year	in % of GDP
2010	2.3
2011	2.6
2012	2.7
2013	2.3
2014	2.4
2015	2.6

Table 1.7 continued

2016	1.9
2017	1.6
2018	1.7
2019	1.7
2020	1.7

Source: World Bank (2021)

Table 1.7 shows the foreign direct investment in Sub-Saharan Africa. The percentage of FDI in the region's GDP keep decreasing throughout the years. According to the United Nations Economic Commission for Africa (2021) this fall in FDI inflow is caused by political and macroeconomic instability, weak infrastructure, poor governance, inhospitable regulatory environments, and ill-conceived investment promotion strategies.

FDI is one of the most important forms of capital inflow into developing countries. Sub Saharan Africa has recorded a significant FDI inflow, however, only fifteen countries accounted for over 80% of the total FDI flow to the continent. Furthermore, the largest inflows are either in sectors with a comparative advantage in Africa (such as the natural resources sector) or where there is a need for investment and returns are high, such as the construction and telecommunication sectors. Countries attracting more FDI are such as south Africa, Kenya, Nigeria, ivory cost, Ghana, Tanzania, Zimbabwe, and Senegal. The following table shows FDI inflow into Sub-Saharan Africa.

Table 1.8: FDI inflow in Sub-Saharan Africa

Year	FDI inflow (in billions USD)
2010	28.98
2011	38.74
2012	43.2
2013	39.95
2014	44.17
2015	43.02
2016	28.4
2017	20.7
2018	20.66
2019	24.14
2020	21.23
2021	68.06
2022	30.12
2023	25.96

Source: World Bank (2023)

Foreign direct investment inflow in Sub-Saharan Africa recorded a sharp increase of approximately 10 billion from 28.98 billion in 2010 to 38.74 billion in 2011. The following year, 2012, FDI increased about half of the previous year then dropped in 2013 from 43.2 to 39.95 billion. In 2014, FDI raised almost 5 billion then slightly decreasing from 44 billion to 43 billion in 2015 before dropping considerably to 28.4 billion in 2016, then 20.7 billion in 2017 and 20.66 in 2018. In 2021, FDI raised sharply and was more than three times what it was in the previous year, going from 21.23 to 68.06 billion before dropping again to 30.12 in 2022 and 25.96 billion in 2023.

The sectoral distribution of this investment reflects the structural distortion of African economies. The majority of the investment flows to the energy and gas supply and

extractive industries (73% of FDI inflow), followed by investment in the services sector, especially in construction (12.3%), transportation and storage (4%), and information and communication (3%). About the sources of FDI flows to Africa, the USA remains the largest investor in Africa by project numbers, contributing to 13% of Africa’s total investment — its highest since 2016. However, when assessed in terms of capital, the country is behind the UAE, France, and India.

China’s share of African FDI fell drastically to 2.9% in 2022, down from 11% in 2018. However, in terms of cumulative FDI between 2016 and 2022, China ranks fourth in projects and second in capital investment, trailing only the UAE. India has emerged as one of the top five investors in Africa in recent years, with cumulative investments in the continent amounting to \$74 billion. Though only ranked as the 10th-largest investor by project number in 2022, India was the third-largest investor by capital and fifth by FDI score. SSA also export FDI to different part of the world.

Table 1.9. Sub-Saharan Africa FDI Outflow

Year	FDI outflow (in billions USD)
2010	6.4
2011	4.83
2012	8.65
2013	12.43
2014	12.37
2015	8.6
2016	8.1
2017	11.1
2018	4.75
2019	3.79
2020	-481, 635, 753 million
2021	2.53
2022	3.84
2023	-1.15

Source: World Bank (2024)

Table 1.8 shows the FDI outflow from Sub-Saharan Africa to other countries. The table shows that the FDI outflow have been increasing and decreasing of about 2 to 4 billion. The highest FDI recorded was 12.43 billion in 2013 while the lowest was recorded 10 years later, in 2023 amounting to 1.15 billion USD.

1.4 Natural Resources as Source of Conflicts

Natural resources have been an object of conflicts in some Sub-Saharan African countries such as Nigeria, Central Africa, but the one that caught the attention of the world due to its severity is the Democratic Republic of Congo (DRC). The DRC, despite being a major source and exporter of some of the world's most valuable minerals (copper, gold, coltan, cobalt and diamonds), as well as having the second-largest forest in the world after the Amazon, remains one of the poorest countries in the world. 5.7 million people in the country are also displaced and one in four Congolese people cannot meet their basic food needs. This disproportionate reality signals a major humanitarian crisis resulting from exploitation and injustices such as child labour, unsafe working environments, and corruption.

Cobalt is quickly becoming an in-demand mineral critical to the green energy supply chain and is a part of the base metal group that is becoming the heart of the renewable energy transition. It is a critical component of battery materials that power electric vehicles (EVs) and renewable energy sources and is facing a sustained surge in demand as decarbonisation efforts progress. The DRC has been a major exporter of cobalt to countries such as China, USA, UAE and others but this resources together with others are causing slavery, child labor and genocide in the country.

Researchers from Northwestern University have linked cobalt mining with increases in violence and insecurity in the DRC. Neighbouring African countries such as Rwanda have

also been accused of funding rebel groups such as M23 to invade the DRC for cobalt extraction. Beyond cobalt, since 1996, wider conflict in the eastern DRC has led to approximately six million deaths. According to Human Rights Watch, the armed M23 group is involved in committing executions and civilian recruitments in the DRC and has displaced almost 200,000 civilians. They have also been accused of mass killings and rape.

Externally, a United Nations report found that Rwandan forces are fighting alongside M23 to invade the DRC. The hostilities reportedly boil down to Rwanda's desire to benefit from the lucrative Congo mines. The Congolese finance minister has also said that the country has lost almost \$1 billion in a year to Rwanda's cobalt smuggling. Rwanda denies these allegations, but tensions have increased between both countries as in January 2023, the Rwandan army shot at a Congolese fighter jet that it says violated its airspace. But Rwanda is not alone in this struggle for Congolese resources. Neighbours, Uganda and Burundi, have also been at the centre of various conflicts in the DRC.

While cobalt was initially seen as a miracle metal aimed at promoting clean energy, it has become one of the major vessels for environmental degradation and human exploitation. According to a 2023 UNICEF report, the DRC is close to reaching record levels of verified grave violations against children for a third consecutive year. This is a direct consequence of the global quest for power through cobalt which is now deeply caught up in a familiar cycle of environmental degradation, exploitation, and greed (Audu, 2023).

1.5 Problem Statement

A significant disparity exists in resource-rich African countries, where despite exporting substantial quantities of oil and minerals daily and generating substantial resource revenues, the lives of African citizens often fail to improve. This raises the question of why the ownership of natural resources, which should benefit the people, does not lead to tangible

improvements in their well-being. The United Nations Declaration emphasizes the right of nations and peoples to exercise permanent sovereignty over their natural wealth and resources in the interest of national development and the well-being of their populations (United Nations, 1962).

As African economies continue to discover and explore natural resources, there is a genuine concern that the curse of resources may manifest, primarily due to increased relative prices and the displacement of investments, particularly in mineral resource-rich countries. These challenges can be exacerbated by corruption, societal fractionalization, and underdeveloped governance indicators. Consequently, this situation can bring to declining GDP growth (Mulwa & Mariara, 2016).

The availability and effective management of resources play a vital role in supporting the building and growth of nations. Numerous studies have recognized that human resources, capital, and natural resources, are critical drivers of economic growth. However, literature offers conflicting viewpoints regarding the impact of natural resource abundance on economic growth; some economists argue that rich natural resources promote economic growth, while others contend that they hinder it (Li, Deng & Cheng, 2013). To resolve this discrepancy, further investigation is necessary, considering each case's contextual nuances. The natural resource curse in Sub-Saharan Africa presents a complex challenge where nations rich in valuable resources experience economic stagnation and political turmoil (Moti, 2019). This dependency leads to neglect of other economic sectors and weakening institutional capacity, consequently resulting in volatile economic trajectories due to fluctuating global commodity markets and fostering corruption and administrative inefficiencies (Warnecke-Berger & Ickler, 2023).

Even though resource-rich countries have a lot of natural resources, economic growth has been slower than expected, leaving a lot of questions open. Botswana and Namibia, which have a lot of natural resources, have shown a lot of strength and kept amazing growth rates, while Angola, Nigeria, and the Democratic Republic of Congo continue to struggle with slow growth rates. On the other hand, growth rates in resource-poor countries like Rwanda and Ethiopia have been going up over the last ten years. The fact that resource-rich and resource-poor countries on the continent have different rates of economic growth is complicated and needs to be looked into to find out what causes the different rates of economic growth (Adika, 2020). Therefore, addressing the resource curse necessitates multifaceted solutions.

Sub-Saharan Africa is renowned for its abundant natural resources, yet it has also experienced significant influences from foreign powers, both politically and financially. Despite the prevalence of FDI in this region, limited studies have examined the effect of FDI on the relationship between natural resource abundance and economic growth.

Despite being rich in natural resources, Sub-Saharan Africa attracts less FDI than other regions worldwide. In 2018, SSA accounted for only 2.46% of global FDI. Between 2006 and 2010, resource extraction, petroleum, and coal processing projects constituted over half the estimated \$236 billion in announced greenfield FDI projects in Africa. However, between 2016 and 2020, these sectors attracted less than a quarter of FDI. Sectors such as logistics, communications and IT services, chemicals, and renewable energy have witnessed significant new investments during this period. FDI in SSA went from 2.6 in 2015 to 1.9 in 2016 and was at 1.7 in 2020 (World Bank, 2021). The figures didn't improve much in the following year although 2021 was a recovery year in terms of FDI as it increased to 3.7 then dropped back to 1.8 in 2022. Poelhekke and van der Ploeg's (2013) study on selected African

countries concluded that natural resource endowments negatively affect FDI inflows. The extent to which the low inflow of FDI may contribute to low economic growth in SSA remains a topic of discussion.

Furthermore, the conflicting findings in the existing literature drive the need to investigate the effects of FDI in this relationship. According to Havranek, Horvath, and Zeynalov (2016), approximately 40% of empirical studies found a negative impact between natural resource richness and economic growth, 40% found no effect, and 20% found a positive impact. Previous research on the relationship between natural resources and economic growth has yielded inconclusive results, possibly due to indirect relationships between these variables. Therefore, this study introduces FDI as an explanatory variable to elucidate the mechanisms and reasons behind the relationship between the independent variable (natural resources) and the dependent variable (economic growth) (Shan & Ren, 2023; Wang, Wang & Wei, 2023). Given that sub-Saharan Africa is known for its dependency on natural resources and limited inflow of FDI, it is imperative to investigate the interplay among these three variables. FDI serves as a generative mechanism that explains how the focal independent variable affects the dependent variable of interest (Hermano, Martin-Cruz & Pajares, 2022). Hence the need to look further into the matter.

In addition, given the importance of the issues for resource-rich developing countries and least-developed SSA countries, more efforts are needed to strengthen our understanding of the link between natural resources and economic growth and the dynamic played in those groups of countries. According to Ofori and Grechyna (2021) it is important to group SSA countries into sub-groups in order to understand the link between natural resources rents and economic growth.

1.6 Objectives of the Study

The general objective of this study is to investigate the effect of foreign direct investment on natural resources curse in Sub-Saharan African region over the study period of 2011-2020. This can be achieved through the following set of objectives:

- i. To examine the existence of natural resources curse in Sub-Saharan African.
- ii. To analyse the effect of foreign direct investment on natural resources and economic growth in Sub-Saharan African region
- iii. To investigate the natural resources curse phenomenon among the Sub-Saharan regions.

1.7 Significance of the Study

By studying the role of foreign direct investment on natural resources curse, this research seeks to offer a comprehensive understanding of the complex dynamics that play in Sub-Saharan Africa's context. This research differs from several works in the context of the role of foreign direct investment in natural resources curse. It aims to address the research gap regarding the impact of foreign direct investment on the relationship between natural resources abundance, economic growth, and the curse from the resources. The study helps SSA countries to develop strategies that will help to meet the aspirations of the African Union's Agenda 2063.

At the continental level, a new African normative framework on natural resource governance—the Africa Mining Vision (AMV)—was adopted by heads of state in 2009. The AMV provides a compelling thrust towards ‘transparent, equitable and optimal exploitation of mineral resources to underpin broad-based sustainable growth and socio-economic development’. It further calls for greater value addition of African mineral resources. The

African Mineral Governance Framework, designed to facilitate the realization of the AMV, has also been drafted. More recently, in 2015 the African Union (AU) adopted the first 10-year Implementation Plan for Agenda 2063, which places natural resources at the center of the construction of a developmental state and of the socio-economic transformation of African countries, and which is also a milestone of the 2030 Agenda for Sustainable Development. Regional institutions such as the AfDB Natural Resource Center (ANRC) and the African Minerals Development Center (AMDC/ECA) are also supporting African states in their efforts to improve their natural resource governance.

1.8 Scope of the Study

While studies have shown the evidence of natural resources curse in Sub-Saharan African region, the role that foreign direct investment plays in that phenomenon is yet to be specified. The scope of the study is limited to the 48 African countries that are located in the geographical area of the Sub-Saharan region. The study covers the period of 10 years between 2010-2020. Africa entered the 21st century with a promising burst of economic growth that persisted for a decade before returning to the slow pace it experienced in the 1990s. From 2000 to 2010, real GDP grew at an average rate of 5.1 percent annually, up from an annual average of only 2.5 percent in the previous decade. Growth slowed to 3.3 percent per year between 2010 and 2019. Similarly, FDI was at an average of 2.4 percent between 2011 to 2015 but was less than 1.8 percent between 2017 to 2020. Hence the importance of studying this time period that showed a lot of changes in SSA economy.

1.9 Organization of the Study

This chapter has provided the general introduction about Sub-Saharan Africa and its natural resources as well as the problem that the region is facing. The focus of the study has been pointed out including the objectives to be achieved.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The research background has been presented and reviewed in the previous chapter, along with the problem statement, research questions, research objectives, the scope of the study, as well as the summary for the chapter. Therefore, by referring to the aforementioned information, relevant empirical studies, theoretical framework, and conceptual framework is further examined in order to support the research in the current chapter. In light of the hypotheses of this study, this section may provide proven pieces of evidence on the research that serves as a guide for researchers who want to study and comprehend more about the findings for their future research.

2.2 Theoretical Studies

The Corden-Neary model emerged in the early 1980s as an outcome of a significant theoretical literature development. This model is based on a limited open economy with three sectors: energy (typically oil, gas, or mineral resources), a tradable sector, and a non-tradable sector. Capital is not moving between industries, whereas labour is, and both factors are globally fixed. Thus, DD is regarded as a strictly domestic phenomenon: it cannot be "exported" to adjacent countries through international migration, nor can it produce effects in other nations.

According to Corden and Neary (1986) the three economic sectors are denoted by the letters E (energy), T (tradeable sector), and N (non-tradeable sector). Price and quantity variations in N relative to T are the result of two effects following an increase: the Spending Effect and the Resource-Movement Effect. The investigation conducted today enables the

identification of four DD transmission channels. To conclude that an economy is suffering from the DD, all or a subset of the following characteristics must be present in varying degrees:

- The Windfall Effect (WE): a situation in which an economy receives a significant infusion of the dominant global currency due to a sudden and notable discovery, expansion of economic activities, or technical improvement.
- Spending Effect (SE): when the presence of the WE lead to an increase in spending by the public and/or private sectors. This rise in spending can be attributed to a mixture of relaxed fiscal policies and/or a lack of financial discipline. As a result, there is a heightened demand for both tradable and non-tradable commodities.
- Resource Movement Effect (RME): refers to the phenomenon where changes in economic incentives lead to a reallocation of production elements from the tradable to the non-tradable sectors. This redistribution results in an increase in the supply of non-tradable items and a corresponding weakening of the tradable sector within the local economy. Put simply, when the marginal product value in the field of resource extraction rises, individuals from various sectors start to relocate to the resource sector with the expectation of obtaining a higher real income. This phenomenon has a direct effect on the process of deindustrialization, since it results in a decline in manufacturing output resulting from reduced levels of employment. This phenomenon may potentially result in adverse consequences, such as a rise in unemployment rates attributable to a decline in competitiveness within the tradable industry.
- Combined Effect (CE): The integration of the WE, SE, and RME is anticipated to have a positive impact on the local currency in the short to medium term. This, in turn, will lead to a strengthening of the non-tradable sector while simultaneously weakening industrial

operations that are not directly tied to the thriving sector. The concept of Economic Complexity argues that the sustained growth of nations is closely tied to their ability to acquire knowledge and innovate within intricate sectors that engage in international trade. Consequently, a decline in economic complexity might potentially give rise to a situation where the long-term economic advancement of a country is put at risk.

Corden also evaluates the domestic consumption scenario for the E product. In this situation, the effects of a rise in the price of E depend on the relative consumption propensities of products, but consumers would transition from E to N and T, resulting in an increase in RER and emphasizing the expected impact of DD. When E is a production input for N and T, an increase in E's price has a negative impact on the profitability of N and T, which has a negative impact on expenditures and complex resource movements based on the relative intensity of N and T in E. However, in the majority of developing countries, hydrocarbon and mineral resources are exported rather than consumed domestically. Corden (1984) concludes with a discussion of several modifications to the primary model. For example, resource movements affect the redistribution of income and, consequently, on the relative demand for N products, when victors and losers have varying propensities to consume N at constant relative prices. Specifically, N may be subject to DD if the propensity of the winners to consume N products is substantially less than that of the losers (Corden, 1984).

Short-term, the presumption of capital immobility across sectors in Corden-Neary's Core model is plausible. Bruno and Sachs (1982) employ a dynamic model in which capital is immobile in the short run but mobile in the long run, resulting in a negative effect of an increase in E on T in the long run. Long-term, an increase in the energy sector decreases the output of other tradable sectors, so this has little effect on the results. Primarily, government

budget policies and the propensity of households to preserve oil revenues for future consumption can mitigate this impact.

In contrast, several FDI theories are applicable to this investigation. Karl Marx developed the negotiating power theory in the nineteenth century. This theory suggests that natural resource-related FDI occurs when firms look to strengthen their bargaining position with resource-rich nations. Firms invest in foreign countries to acquire political influence or to diversify their exposure to political risk, which can increase their negotiating leverage with resource-rich nations. According to the resource-seeking theory, FDI occurs when firms seek access to natural resources unavailable in their native countries. Companies invest abroad to secure supplies of essential natural resources, such as minerals or energy, for their production procedures (Vernon, 1971). Then, according to Hymer's (1960) market imperfections theory, firms invest in foreign countries to exploit market imperfections, such as differences in regulatory frameworks, tax policies, or labour costs, which provide opportunities to extract natural resources at a lower cost or sell them for a higher price. The internalisation theory proposed by Buckley and Casson (1976) implies that FDI is outsourced to foreign countries to internalise the production of natural resources that could be assigned to foreign firms, such as mining or drilling. The combination of market imperfections theory and internalisation theory insights illuminated Dunning's (1970) eclectic paradigm theory. According to the theory, FDI related to natural resources occurs when firms possess ownership advantages, such as proprietary technology or managerial expertise, that enable them to exploit market imperfections in foreign countries, and when the transaction costs of internalising natural resource production activities are lower than outsourcing them to foreign firms.

2.2.1 Natural Resource Curse

Since the phenomenon was first officially studied in the 1970s in the Netherlands, where the diminishing manufacturing sector and growing unemployment were attributed to the discovery of oil and gas in the North Sea, the term natural resources curse or 'Dutch Disease' (DD) has been used. Due to a significant natural gas discovery in the Netherlands, the value of the Dutch currency raised, making uncompetitive the exports of other industries. As revenues from natural resources entered the economy, the real exchange rate increased. The consistent relationship between exchange rates and oil and gas revenues makes it challenging for nations to accumulate the foreign currency necessary for international trade. However, economists, policymakers, and public policy developers were concerned about the applicability of the DD's theoretical implications to nations with abundant natural resources. Thus, in the 1970s, what fossil fuel producers initially viewed as a question mark was swiftly evaluated by economies dependent on other natural resources, primarily minerals.

According to Auty (2001), the Netherlands are not an outlier, as many countries with large endowments perform worse on average than those with lesser endowments. However, some nations have performed significantly better than others and have even achieved economic growth and expansion. Botswana, Norway, and Malaysia stand in contrast to low-performing nations like Nigeria and the Democratic Republic of the Congo. In a perfect world, resources should be a source of wealth and development, and resource profits can be an important source for overcoming the development challenge and achieving the necessary primary force for economic growth and development. Some resource-rich nations, such as Malaysia and Norway, have proved that resource-rich nations can maintain economic growth and attain economic development, and that their abundance of natural resources does not

hinder their ability to develop. The accomplishments of these nations demonstrate that the resource curse is reversible or avoidable.

As the evaluation of the DD expanded in scope in the late 1990s and early 2000s, a growing number of case studies failed to demonstrate the manifestation of the DD in mineral resource dependent-nations, resulting in the rejection of Botswana, Indonesia, Chile, Spain, New Guinea, Nigeria, Russia, and Azerbaijan. In fact, case studies conducted in Norway and Spain revealed a correlation between a thriving natural resource sector and the industrialization of an economy (Bjornland, 1998, as cited in Domenech, 2008).

Sala-i-Martin and Subramanian (2003) argued that the failure of resource-rich nations is not due to the existence of natural resources, but rather to the nature of their institutions and public policies. After accounting for institutions, the authors conclude that natural resources have little effect on economic growth. Institutions are essential for countering the resource curse and may be part of the remedy for the afflictions of resource-rich African nations. This argument was also supported by Zalle (2019), who suggested that African economies should control corruption and invest in human capital in order to convert the resource plague into a resource blessing. The relationship between natural resources and economic growth may become negative in the presence of weak institutions, insufficient human capital, and a high level of corruption.

Maeza (2014) identified three causes for the poor performance of resource-rich countries. Capital owners may find it simpler to bribe government officials than to invest in long-term industries and projects. This is especially true for oil-rich nations such as Angola, Nigeria, and Sudan, and diamond-rich nations such as Sierra Leone, Liberia, and the Congo. Aided by foreign extractive corporations, rent-seeking officials in these nations have diminished the profits of resource revenues.

Second, the volatility of natural resource prices complicates loan repayment. As the prices of natural resources (such as minerals, oil, coffee and grain) are unpredictable, countries that specialise in extractive industries and commodities will suffer a trade drawback. According to Poelhekke and van der Ploeg (2009), in economies with dysfunctional financial systems, the volatility of natural resource revenues, which results from the volatility of primary commodity prices, retards economic development. In addition, natural resources are constantly exported in their totality and are never utilised domestically for household consumption or business inputs. However, if this assumption holds true for luxury goods such as gold and diamonds, it is more unlikely for other mineral products that can be utilised in the production of other domestic goods and services, such as natural gas, coal, and petroleum oil. If manufacturing industries are more dependent on oil or gas than other industries, the discovery of such resources could help firms reduce operating expenses and stimulate industrialization (Goujon and Mien, 2021).

Thirdly, the abundance of natural resources displaces other economic sectors, such as human and social capital. Crowding out indicates the diversion of talent and innovation from other economic sectors. By affecting the allocation of education funds, natural resources supplant human resources.

2.2.2 Dutch Disease

There are four forms of transmission of the Dutch Disease: the windfall effect, the spending effect, the resource movement effect, and the combined effect. This study mainly looks into the windfall effect, which is defined as the phenomenon that occurs when a sudden discovery of global significance, productive expansion, or technological innovation causes an enormous influx of the dominant global currency into the host economy. The problem is the economy's capacity to absorb additional expenditure. In other words, describing how an

economy should react to a foreign exchange windfall caused by the discovery of a natural resource or a surge in commodity prices. As they seek to increase domestic expenditure, resource-rich developing economies frequently meet supply constraints and the resulting upward force on prices and the real exchange rate. However, this study is not limited only to the windfall effect as different countries contact DD differently which may lead to having various DD effect in the Sub-Saharan region.

The fact that the economy needs to change to a new long-term structure, like a bigger non-traded goods sector, is important in many ways. The standard is an economy that can switch to this new form right away. This is possible if all types of capital, like skills, tools, and buildings, can be redeployed or bought on global markets, so that there are no limits and relative prices don't have to change.

Foreign transfers, primarily in the form of development aid or remittances, are yet another source of natural resource curse. Krugman (1987) demonstrated that a foreign transfer can result in an increase of the real exchange rate, which can lead to specialisation in sectors with less potential for long-term growth in the recipient nation. It is the result of good luck.

Both foreign aid and remittances are significant contributors to the national income of many developing nations. In SSA, FDI accounted for 1.4% of the total GDP in 2020, while remittances accounted for 2.5% of the GDP. Foreign aid is typically given to a government, which then transfers it to the intended recipient. Remittances, on the other hand, do not travel through a government intermediary and are more likely to reach a country's poorer citizens. Dinkelman, Kumchulesi, and Mariotti (2017) demonstrate that remittances from Malawian gold miners working in South Africa enabled their impoverished agrarian

families to accumulate capital and exit the agricultural sector. Consequently, it can be concluded that not all foreign transfers contribute to the natural resource curse.

The second theory used in this study is the neo-classical growth model which suggests that economic growth occurs from the buildup of external factors of production, including the stock of capital and labour. It has been demonstrated that capital accumulation has an immediate effect on economic growth in proportion to its share of national output. Furthermore, economic growth is dependent on increased labor force participation and technological advancement. According to this concept, FDI enhances the capital stock of the host country, which influences economic growth.

2.3 Empirical Studies

2.3.1 Gross Domestic Product

According to Adika (2020), the presence of abundant natural resources does not ensure higher economic growth rates. Rather, the sustenance of comparatively greater economic growth rates within resource-rich nations is contingent upon the consolidation of democracy and political rights and the observance of constitutional provisions. The true challenge encountered by the vast majority of resource-rich African nations throughout the years has been the inaptitude to establish a stable democracy and political stability.

Cust et al. (2022) connected natural resource curse to government expenditures. The government receives resource revenues directly from the oil or mineral company, bypassing the hands of the citizens. This distinguishes them from tax revenues, which are paid by citizens. This distinction implies at least two ramifications for economies that are resource intensive. First, citizens might be unaware of the magnitude of resource revenues. Secondly, citizens may not be as motivated to evaluate how the government utilizes resource revenues

because they frequently do not regard these revenues as 'their' money. In contrast to taxes, citizens frequently demand to know how their tax dollars are being used. Due to the difference between resource and tax revenues, the government may not be held as accountable for the use of resource revenues as it would be for tax revenues. In turn, this lack of accountability may result in misallocation, waste, or theft of public funds. To address this issue, Cust et al. (2022) propose that the government transmit all resource revenues directly to citizens, who would then be taxed to fund public expenditures. As a result, citizens would have a better understanding of the size of government revenues, and they may examine the expenditure of those revenues more closely, given that it is sponsored by their tax payments.

Harding et al. (2020) examined how the discovery of large amounts of oil and gas affected the mutual RER of 172 countries from 1970 to 2013. The study examined the effect of the net present value of oil and gas discovery (in relation to GDP), which is anticipated to have a greater degree of exogeneity compared to production or prices, on three sector-specific real exchange rates (RER) in a bilateral context. These RERs pertain to the overall economy, tradable goods, and non-tradable goods alone. According to what they found; the resource curse is caused by the part of it that can't be traded. They also find it interesting that the price goes up shortly after the oil is discovered, yet before oil production starts. This could indicate that there are high expectations.

2.3.2 Natural Resources

There has been no significant improvement in the lives of Nigerians or the economy as a whole as a result of the enormous promises made by crude export revenues. High oil revenues increase exchange rates, contribute to a negative balance of payments when prices go down, and decrease the incentive to invest in non-oil sectors such as manufacturing and

agriculture. Oil is unquestionably not a boon for a nation pursuing rapid economic growth to escape poverty. In terms of economic growth and development, oil-dependent states have performed worse than non-oil states (Otaha, 2012). Prior to the discovery of oil, agriculture was the primary source of national revenue in Nigeria, which has over 89 natural resources including cocoa, timber, etc. Since the discovery of oil in Nigeria, the agricultural sector has been neglected, resulting in the importation of vast quantities of food items that were previously produced locally (Orvoty & Jibrilla, 2019).

After the discovery of oil in Niger Delta, a significant portion of the country's population relocated to Niger Delta in search of improved opportunities. Despite vast hydrocarbon wealth, the per capita income in Niger Delta remains below \$1 per day. In opposition to oil production, which primarily benefits foreign oil corporations and corrupt government officials, militias in the Delta have increasingly resorted to kidnappings and violence (Peel, 2005, cited in Otaha, 2012). Farhadi et al. (2015) tested the impact of the resources rents on the economic freedom using the GMM techniques for a sample of 99 countries during a time span 1970–2010. Their highlights revealed a positive effect of the resources rents on the economic freedom which is in contradiction with the resource curse theory.

Orvoty and Jibrilla (2019) analysed the 35-year long and brief relationship between DD and the agriculture sector. Using agricultural output, inflation, real GDP, crude oil price, and exchange rate as variables, the study concluded that crude oil price has a negative impact on agricultural output and recommended that the oil sector be utilised to develop the agriculture sector. According to Onuoha and Elegbede (2018), some characteristics may discourage naming Nigeria as another case of DD because, for the past two decades, Nigeria has experienced significant unemployment problems, which cannot be associated with DD.

Nevertheless, there are additional types of DD, such as the expenditure effect. Corruption and weak governance are the most significant factors contributing to DD in Nigeria. Since government spending and the Nigerian GDP are heavily reliant on oil exports, the government fails to implement policies that limit corruption in the economic framework and enable the populace to derive more benefits from the resource (Onuoha & Elegbede, 2018). According to Agbaeze and Ukoha (2018), the wealth generated by the Nigerian government through oil revenues has not been distributed to its citizens, as approximately 70% of the population resides well below the poverty line.

Since the beginning of diamond mining nearly fifty years ago, Botswana has maintained relatively consistent economic growth and political stability, earning it a reputation as one of the few success stories (Barczikay et al., 2020). However, the nation has failed to diversify its economy away from diamond mining and accomplish a structural shift towards activities with a higher added value. The diamond industry contributed roughly 20% of the country's GDP and nearly 85% of its exports between 2013 and 2016, despite the country's relatively low economic complexity and high unemployment rate. In contrast to the majority of economies in Sub-Saharan Africa, which are afflicted by multiple facets of the resource curse, diamonds have facilitated Botswana's phenomenal growth. They transformed a struggling, agrarian, rural, uneducated, and foreign aid-dependent nation into one with an upper-middle income within a single generation. The capacities of the state and the developmental institutions are strong, while the rates of corruption and social tensions are moderate (Barczikay et al., 2020).

2.3.3 Foreign Direct Investment

The Corden and Neary theory shows that foreign direct investment may occasion natural resource curse in a situation in which an economy receives a significant infusion of

the dominant global currency due to a sudden and notable discovery, expansion of economic activities, or technical improvement. Africa, in general, and sub-Saharan Africa (SSA) in particular, are less competitive than other regions and are relatively bestowed with natural resources. According to Akinlo (2012), the contribution of foreign direct investment in the Nigerian oil industry has been improving and also contributes greatly to economic performance. The oil sector can play a crucial role to boost growth by stimulating the non-oil sectors. In fact, covering the period of study of 1960-2009, the production of crude oil has greatly increased and thus raised the contribution of the oil sector in income

Bokpin et al. (2015) discovered that natural resources increase FDI inflows to host nations. Their study argued that investments in these resource-extraction businesses have very high returns, especially in developing economies that are rich in resources but have weak institutions and few environmental rules. The authors looked at the hydrocarbon rents, mineral rents, and forest rents of 49 African countries to come to the conclusion that natural resources have a big and good effect on FDI flows. So, the author came to the conclusion that DD doesn't happen in Sub-Saharan Africa.

Olusegun (2021) used different tests and the variables oil revenue, manufacturing output, exchange rate, government spending, and trade openness to come to the conclusion that oil revenue and exchange rate had a negative and significant impact on manufacturing sector output which led to the decrease of GDP, while government spending had a positive and significant effect and trade openness had no significant impact.

In addition to eradicating corruption, enhancing security, and ensuring good administration, the government should focus on and encourage other sectors, primarily agriculture and manufacturing, by increasing capital expenditures and encouraging FDI in these sectors. Increased government expenditure in this area would encourage more

investment by both domestic and foreign investors, thereby increasing the output of these industries. Government's concentration on the energy sector to the exclusion of all other sectors has harmed the economy as a whole. Even though Nigeria is one of the world's largest energy producers, roughly 70% of the population lives below the poverty line (Agbaeze & Ukoha, 2018).

Furthermore, South Africa has been perceived as occasionally suffering from natural resource curse. Hodge (2015) carried out a study to test the natural resource curse argument, which says that price increases for South Africa's primary export commodities have hurt domestic manufacturing, against the alternative hypothesis, which says that price changes and domestic manufacturing output are related in a good way. As dependent factors, the model used actual manufacturing output, OECD output, actual M3 money supply, a real effective exchange rate index, an international real metals price index, and manufacturing unit labour costs. The data show that there is a link between the price of raw materials and manufacturing in the United States. Even though rising commodity prices may make the manufacturing industry less competitive in terms of exchange rates, this is more than made up for by the growth benefits of commodity price cycle upswings. So, the author came to the conclusion that DD doesn't happen in South Africa.

Hayat (2018) argued that many nations utilise their natural resource sector as a means to attract foreign direct investment (FDI). However, low- and middle-income countries face the challenge of the resource curse, which manifests as diluted growth resulting from FDI. To ensure uninterrupted economic development driven by foreign direct investment (FDI), it is imperative for low- and middle-income nations to effectively attract FDI to sectors other

than natural resources. This strategy is crucial in order to maintain a relatively smaller proportion of the economy reliant on the natural resource sector.

2.3.4 Political Stability

Botswana has maintained relatively consistent economic growth and political stability, earning it a reputation as one of the few success stories (Barczikay et al., 2020). This shows that apart from economic activities, political stability also plays an important role in avoiding natural resources curse. However, the nation has failed to diversify its economy away from diamond mining and accomplish a structural shift towards activities with a higher added value. The diamond industry contributed roughly 20% of the country's GDP and nearly 85% of its exports between 2013 and 2016, despite the country's relatively low economic complexity and high unemployment rate.

Asekunowo and Olaiya (2012) tested the linkage among crude oil revenues and economic growth in the case of Nigeria by using the Johansen multivariate cointegration during the period from 1974 to 2008. They recorded that variables are cointegrated thus these are evidence of a long-run relationship. Their highlights support the existence of resource curse as a result of voracity effect, weak and challenged institutions, fiscal volatility, excessive spending, excessive borrowing, and fractionalization in Nigeria. Recently, Elhannani (2013) investigated the resource curse phenomenon by including various conditioning variables representing the importance of other macroeconomic aspects such as economic growth, government expenditures, financial development, and oil price volatility and share to GDP. The highlights recorded the existence of resource curse due to the high volatility of oil price and endowment has an inverse effect on the economic development path. Also, government development expenditures and financial development spur growth.

Ross (2013) critically explored the resource curse and claimed that natural resource abundance is justified by weak institutions, bad democracy and generates violence within the civil society. Furthermore, he assured that petroleum wealth abundance makes the society corrupt, more durable, authoritarian and violent. Abdulahi et al. (2019) highlight resource rent has a positive impact on growth till a certain threshold and resource curse starts to affect growth negatively using institutional quality as a threshold variable. The study employs SGMM estimation techniques and panel data from 1998–2016 of 13 resource rich countries in SSA. In the same way, Epo and Faha (2020) investigate the impact of institutions between natural resources and economic growth. The study makes use of panel data of 44 African countries over the period 1996–2016 and system dynamic panel-data instrumental regression and panel smooth transition regression to show that the effect of natural resource and economic growth significantly restore when we inculcate quality rule of law regulations.

2.3.5 Control of corruption

Corruption and weak governance are the most significant factors contributing to DD in Nigeria. Since government spending and the Nigerian GDP are heavily reliant on oil exports, the government fails to implement policies that limit corruption in the economic framework and enable the populace to derive more benefits from the resource (Onuoha & Elegbede, 2018). According to Agbaeze and Ukoha (2018), the wealth generated by the Nigerian government through oil revenues has not been distributed to its citizens, as approximately 70% of the population resides well below the poverty line.

Arezki and Ismail (2013) examined the DD-transmission channel of public expenditures for 32 oil-producing nations between 1992 and 2009. The effect of changes in government spending on real exchange rates is estimated first, followed by the influence of international energy price fluctuations on government expenditure. They used two measures

for public current expenditure and capital expenditure and test for nonlinear effects of oil price and oil export value increases and decreases. They declared that current expenditures are positively correlated with the RER, that oil prices are positively correlated with current expenditures, and that current expenditures persist downward in response to variations in oil prices.

Behzadan et al. (2017) used a dynamic growth two-sector model to show that a resource curse can be caused by a change in demand alone and an uneven allocation of the rent. This leads to a progressive decrease in manufacturing where people learn by doing. This finding shows that the effects of the resource curse tend to be worse in places where inequality is already high. This is especially necessary in resource-rich countries where inequality is often high. Non-tradable goods, especially services, are mostly luxury items in developing countries. This means that rich households are more likely to buy these goods than poor households. If wealthy households keep the rent that comes from resource revenues, the high level of inequality in a country will make the resource curse worse by raising demand for non-tradables at the expense of tradables. When resource rents are distributed in a more equitable manner, the resource curse is mitigated. In addition, developing nations must invest their resource rents more productively and diversify their economies by establishing robust connections between the rents-based sectors and other economic sectors (Ousama et al., 2018). According to Law and Moradbeigi (2017), fortifying financial systems boosts investor confidence and government credibility, which in turn encourages the anticipated positive impact of natural resources on economic growth.

2.3.6 Human Capital

Bahar and Santos (2018) examined the relationship between natural resource earnings and diversification of exports. In particular, they took into account the fact that

some industries require more labour than others as well as included transportation costs for export industries. It also means that exporting is restricted to only the most productive firms in the sector. Consequently, a resource windfall increases wages and decreases profits, causing some firms to cease shipping (since they can no longer sustain transport costs) and labour-intensive firms to exit the market. Consequently, under conditions of monopolistic competition, the total number of exporting companies and the diversity of exports decline.

Akinlo (2012) investigated the impact of the oil sector on the growth in the case of Nigeria covering the period from 1960 to 2009 by using multivariate vector autoregressive (VAR) model of Johansen and Juselius (1990, 1992). The results recorded the presence of long-run relationship among the oil sector and economic growth. Furthermore, it is worth noting that the oil sector can play a crucial role to boost growth by stimulating the non-oil sectors. In fact, covering the period of study, the production of crude oil has greatly increased and thus raised the contribution of the oil sector in income. While the positive influence of the oil sector on manufacturing sub-sector is denied, the contribution of foreign direct investment in the Nigerian oil industry has been improving and also contributes greatly to economic performance. Further, there are several branches among others through which the Nigerian oil industry has intensively contributed in accelerating economic development which is availability of enormous foreign reserves and provision of an efficient productive labor force, production, and provision of cheap energy in Nigeria.

According to Kim and Lin (2017) natural resource dependence improves education but worsens health. They focused on two dimensions of human capital which are education and health because of their importance as a driver of sustainable economic growth (Barro, 2001) and a potentially powerful equalizer (Aghion et al. 1999), and because both entails wide-ranging social implications and can be crucial in alleviating poverty and increasing the

economy (Gupta et al., 2003), which is especially important for poor countries (Bhargava et al., 2001; Krueger and Lindahl, 2001) featured by low human capital and abundant natural resources. Brooks (2011) hold that countries that have successfully evaded the resource curse tend to have a higher level of human capital which makes possible the management of natural resources in ways that encourage the absorption of technology and development of valuable new economic sectors.

2.3.7 Unemployment

The resource movement effect refers to the phenomenon where changes in economic incentives lead to a reallocation of production elements from the tradable to the non-tradable sectors. This redistribution results in an increase in the supply of non-tradable items and a corresponding weakening of the tradable sector within the local economy. This phenomenon has a direct effect on the process of deindustrialization, since it results in a decline in manufacturing output resulting from reduced levels of employment. Deindustrialization leads to people losing their job and causing unemployment which in turn hinders the economy. According to Jefferies (2019) high production costs and problems with competitiveness, as well as a low level of market diversification, make unemployment rates stay high, which indicate that structural transformation issues are profoundly rooted and may be related to the existence of natural resource curse.

Also, the resource curse phenomenon is often associated with pervasive corruption, a lack of secure property rights, persistent high unemployment and glaring income inequalities (Colgan, 2014 as cited in Matallah, 2020). An abundance of natural resources does not enable many countries to achieve high sustainable growth rates and poverty reduction goals such as diversification of economic activities. Diversification has the ability

to solve the unemployment problem and point institutions in the right direction, and hence, it is a cornerstone of the peacebuilding process (Matallah, 2020).

2.4 Hypothesis Development

Based on the Dutch disease theory, natural gas discovery in a country brings the value of that country's currency to raise, making uncompetitive the exports of other industries. Oil is unquestionably not a boon for a nation pursuing rapid economic growth to escape poverty. In terms of economic growth and development, oil-dependent states have performed worse than non-oil states (Otaha, 2012). Which brings us to the first hypothesis. Some studies, including Taguri and Lar (2016), support the availability of negative effects of abundant natural resources on economic growth, whereas others, including Muhammad et al. (2019), support the existence of a positive effect. Their contribution to economic development is primarily determined by the rent that natural resources generate. Natural resource curse occurs when there is a negative relationship between natural resources rent and GDP. Hence,

Hypothesis 1: Natural resources negatively affect economic growth

As stated by Bokpin et al. (2015), natural resources attract FDI which in return increase economic growth. Multiple studies, including those by Asiedu (2002, 2006), Mohamed and Sidiropoulos (2010) have also discovered that natural resources increase FDI flows to host nations. These studies show that investments in these extractive industries give very high returns, especially in developing economies that are rich in resources but have weak institutions and few rules about the environment. This leads us to the second hypothesis.

Hypothesis 2: Natural resources positively affect foreign direct investment

Hayat (2018) examined how the natural resource industry affects the relationship between foreign direct investment and growth in the economy. His study shows that FDI flows have a significant and positive effect on the economic growth of the country that receives them. The effect of FDI on economic growth, on the other hand, depends on how big the natural resource sector is. The size of natural resources makes it harder to predict how much foreign direct investment will help the economic growth. As a result of foreign direct investment above a certain level, the size of the natural resource sector will grow, which will hurt economic growth. Dinkelman et al. (2017) demonstrate that remittances from Malawian gold miners working in South Africa enabled their impoverished agrarian families to accumulate capital and exit the agricultural sector.

Hypothesis 3: foreign direct investment has a positive relationship with GDP

2.5 Literature Gap

By examining the relationship between foreign direct investment, natural resources rents and economic growth, this study aims to identify any deficiencies in the existing body of literature. Previous study majorly focused on Sub-Saharan Africa as a whole, however, this research goes further by decomposing the SSA countries into sub-groups which are east, south, central, and west African countries. Moreover, it is important to analyse the issues for both developing and underdeveloped SSA countries in order to understand the link between natural resources and economic growth.

As we study natural resources, foreign direct investment and economic growth, it is crucial to include political stability as an explanatory variable since it can have an adverse effect on natural resource rents to increase economic growth in SSA. Without ignoring the

importance of human factor in contributing to the increase of economic growth but also the major role played in natural resource revenues.

2.6 Organization of the Chapter

In this chapter, different theories, empirical studies, and theoretical studies on natural resource curse have been discussed. Studies from different countries and regions have been listed down.

CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter discusses the research approaches to be employed in collecting the research data on The Effect of FDI on Natural Resources and Economic Growth. To measure this relationship, this chapter explains the research design to be adopted, research methodology, research framework, research population and samples, measurement of the investigated variables. This chapter also focuses on the analysis tools that are used in analysing the collected data.

3.2 Conceptual Framework

This study examines the effect of FDI on natural resources and economic growth in Sub-Saharan countries between the period of 2011 to 2020.

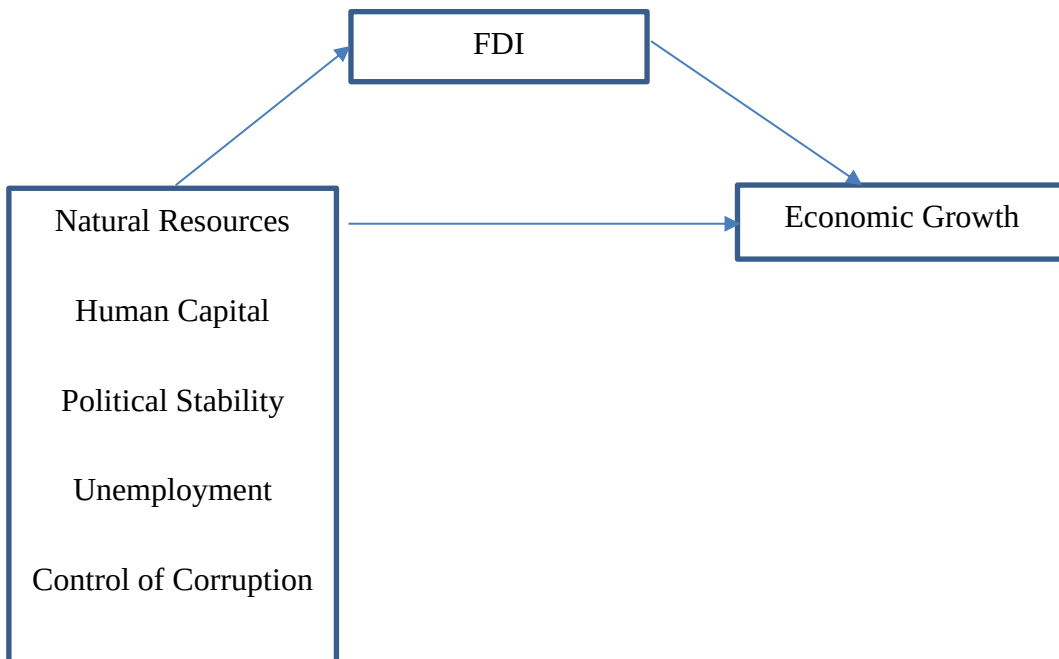


Figure 3.1 : Conceptual Framework

From the Dutch disease theory there are four major effects of DD. The windfall effect occurs when an economy receives significant amount of the dominant global currency due to a discovery of natural resources. After the discovery of natural resources, countries are open to receive FDI from different places in order to exploit and make use of the resources. This shows that natural resources attract FDI. However, governments from the resource rich countries tend to increase expenditure, lack financial discipline and overlook corruption. This shows that when natural resources are discovered in a country with weak political stability and corruption it has a negative effect to the economy.

The resource movement effect refers to the phenomenon where changes in economic incentives lead to a reallocation of production elements from the tradable to the non-tradable sectors. This redistribution results in an increase in the supply of non-tradable items and a corresponding weakening of the tradable sector within the local economy. This phenomenon has a direct effect on the process of deindustrialization, since it results in a decline in manufacturing output resulting from reduced levels of employment. Deindustrialization leads to people losing their job and causing unemployment which in turn hinders the economy.

3.2.1 Natural Resource Rents

Natural resource rents are the portion of the cumulative operating surplus attributable to natural resources; their value is determined by the value of extraction. The total rents from natural resources consist of rents from minerals, natural gas, oil, coal, and forests. This study employs natural resource rents expressed as a percentage of GDP.

Asiedu and Lien (2011) examined the impact of natural resources on the relationship between democracy and FDI for 112 countries between 1982 and 2007. They demonstrated that the quantity rather than the nature of natural resources can modify the relationship

between democracy and FDI inflows. Asiedu (2006) has examined African economies and concluded, based on his findings, that natural resources can boost FDI inflows. This indicates that natural resources can facilitate the development of host countries through the channel of foreign direct investment.

While countries use their natural resource sectors to draw foreign direct investment (FDI), low- and middle-income countries face the problem of the "resource curse," which means that FDI-driven growth isn't as strong as it could be. Low- and middle-income countries must attract FDI into the non-resources sector at the same time as they attract FDI into the natural resource sector (Hayat, 2018). This keeps the natural resource sector from getting too big and slowing down economic growth caused by FDI.

According to Ousama et al. (2018), in order to optimise their resource rents and foster economic diversification, concerted efforts are being made by developing countries to strategically invest these revenues and develop robust linkages between sectors dependent on rents and other economic sectors. According to Law and Moradbeigi (2017), fortifying financial systems boosts investor confidence and government credibility, which in turn boosts the anticipated positive effect of natural resources on economic growth.

3.2.2 Gross Domestic Product

The gross domestic product (GDP) serves as the conventional metric for quantifying the economic value generated within an economy through the production of goods and services over a designated timeframe. Hence, it quantifies the revenue generated from said production or the aggregate expenditure on ultimate goods and services. The GDP is expressed in trillions of euros in this study. Some studies, including Taguri and Lar (2016), support the availability of negative effects of abundant natural resources on economic

growth, whereas others, including Muhammad et al. (2019), support the existence of a positive effect. Their contribution to economic development is primarily determined by the rent that natural resources generate. When natural resource rent is extremely low, its effects may be perceived as a burden rather than a benefit. However, above a certain level of rent collection, natural resource rent may stimulate economic expansion (Dramani et al., 2022).

Hayat (2018) examined how the natural resource industry affects the relationship between foreign direct investment and growth in the economy. His study shows that FDI flows have a significant and positive effect on the economic growth of the country that receives them. The effect of FDI on economic growth, on the other hand, depends on how big the natural resource sector is. The size of natural resources makes it harder to predict how much foreign direct investment will help the economic growth. As a result of foreign direct investment above a certain level, the size of the natural resource sector will grow, which will hurt economic growth.

Ibhagui (2020) found that when population and human capital growth exceed a certain threshold, FDI could enhance economic development in Africa. Additionally, the positive impact of FDI on economic development is contingent on a number of other factors.

3.2.3 Foreign Direct Investment

Foreign direct investment (FDI) refers to a type of international investment in which an investor from one economy has a lasting ownership interest and substantial level of influence in a company located in another economy. Evidence of the investment must be provided if the investor receives 10% or more of the company's voting power as a consequence of the investment. Foreign direct investment is essential to international economic integration because it creates permanent and stable connections between

economies. Foreign direct investment (FDI) is essential for the transfer of technology between nations, promotes international trade by facilitating access to foreign markets, and can be a major driver of economic development. This study calculates FDI as a proportion of GDP.

There is no conclusive relationship between natural resource abundance and FDI inflows. This relationship is divided. According to the first school of thought, natural resources are a crucial aspect of FDI attraction. Multiple studies, including those by Asiedu (2002, 2006), Mohamed and Sidiropoulos (2010) and Bokpin et al. (2015), have discovered that natural resources increase FDI flows to host nations. These studies show that investments in these extractive industries give very high returns, especially in developing economies that are rich in resources but have weak institutions and few rules about the environment. The second school of thought, which points to Poelhekke and van der Ploeg (2013) and Elheddad (2018), says that natural resources may make FDI less likely. The natural resource burdens theory was helped by this argument. When FDI focused on a sector that was doing well, like oil, other production factors, like foreign and local capital and labour, moved to oil. This method hurts the industry and service sectors, which are the ones that make things.

Bokpin et al. (2015) looked at 49 African countries' oil rents, mineral rents, and forest rents and came to the conclusion that natural resources have a large and good effect on FDI inflows. Asiedu (2013) used statistics from 120 developing countries to prove that having a lot of natural resources, like oil rents and oil exports, is bad for FDI inflows. According to Asiedu (2013), the persistent level of oil price volatility was responsible for this negative association. Such volatility in the price of energy creates high levels of risk and could result

in low levels of foreign direct investment. In their study, Elheddad et al. (2020) concluded that natural resources have a negative effect on FDI inflow.

3.2.4 Human Capital

Human capital is defined as the skills, knowledge, and experience possessed by an individual or population, viewed in terms of their value or cost to an organization or country. The abundance of natural resources in resource-rich countries, as well as the improper exploitation of natural resources, can have a negative impact on human capital and economic growth. In contrast, mineral and oil-rich countries overlook the development of their human resources by allocating insufficient attention and resources to education. As a result, these countries have a lower growth rate compared to others (Behbudi, Siab & Karami, 2010).

Using country level panel data from 55 developing countries over the 1980–2011 period, Kheng, Sizhong and Anwar (2016) analysed the relationship between FDI and human capital. They concluded that FDI alone may not be able to contribute to sustainable economic growth. For developing countries aiming to increase their economy, it is critical that attention be placed on the development of human capital. They also stated that the inward FDI and human capital are essential for economic development in host economies, and both possess a positive and significant impact on each other.

Bhaumik and Dimova (2013) declare that in order to enhance FDI inflows, developing countries are frequently pushed toward investing more in human capital. Increased foreign direct investment can help developing countries become more efficient. However, if the quality of local education is not good, the employment training supplied by multinationals in host developing nations is more likely to result in enhanced productivity. In their studies using a sample of 59 countries in 2000, Cabrales and Hauk (2011) discovered

that the relationship between natural resources and human capital depends on a country's institutions.

Zalle (2019) proposed that African economies restrain corruption and invest in human capital to turn the resource curse into a resource blessing. As a result, considering the presence of weak institutions, low human capital, and significant levels of corruption, the link between natural resources and economic growth may become negative.

3.2.5 Political Stability

Political stability refers to a state of tranquillity, organization, and sustained continuity within the political domain. It is marked by consistent institutions and policies, as well as a commitment to upholding the rule of law. Acemoglu et al. (2012) explain that natural resource-rich countries have unstable and ineffective political institutions. Yacine et al. (2015) estimate 69.8% as the threshold over which natural resources are viewed as a curse on the economy, which is heightened by inefficient institutions. The institutions quality is an important driver in the relationship between natural resources and economic growth. The natural resource curse can be prevented if quality of institutions is high enough (Ndjokou & Tsopmo, 2017).

Kopinski et al. (2013) stated that Ghana's stable political system, combined with its relatively well-diversified economy and civil society strength, make it hard for the oil find to devastate the economy. This argument is supported by Ndjokou and Tsopmo (2017) declaring that abundant natural resources usually imply political instability. Hence, beside reducing the reliance on natural resources through economic diversification and a shift toward democratization regimes is a critical problem in SSA countries for improving overall institutional quality and avoiding the natural resource curse.

According to Adika (2020) the abundance of natural resources does not ensure faster economic growth. Sustainable economic growth in resource-rich countries requires improving democracy, political rights, and constitutional protections. Most resource-rich countries in SSA have struggled to maintain political and democratic stability over time.

3.2.6 Unemployment

Unemployment is the condition of someone actively searching for employment but unable to find work. The unemployment rate is the percentage of the labour force that is unemployed and looking for employment. Understanding unemployment is crucial because it reflects the economic health of a country. High unemployment can indicate economic distress, while very low unemployment might signal an overheated economy. Governments often try to manage this through policies aimed at creating jobs.

Often times, a rise in unemployment rates is related to natural resource curse. For instance, the study of natural resource curse was fuelled by diminishing in manufacturing sector and increasing in unemployment rate which was said to be occasioned by discovery of oil and gas in the North Sea. In contrast, Onuoha and Elegbede (2018) stated that unemployment cannot be associated with natural resource curse in Nigeria. And Barczikay et al. (2020) agrees with this phenomenon by examining the effect of natural resource in Botswana. Findings from Barczikay et al. (2020) show that despite the economic complexity and high unemployment rate the resource sector had a positive impact on the economy.

3.2.7 Control of Corruption

Control of corruption measures how well a society limits the abuse of power for private benefit. This involves both petty and grand forms of corruption, spanning from small bribes to large-scale misappropriation of public funds. Effective control of corruption leads

to greater economic efficiency and equality as it ensures that resources are used for the public good rather than siphoned off dishonestly. Countries that manage to control corruption effectively often enjoy enhanced development prospects and a more trustworthy government.

Zalle (2019) argued that African economies should control corruption and invest in human capital in order to convert the resource plague into a resource blessing. Onuoha and Elegbede (2018) declared that corruption and weak governance are the most significant factors contributing to DD in Nigeria. Since government spending and the Nigerian GDP are heavily reliant on oil exports, the government fails to implement policies that limit corruption in the economic framework and enable the populace to derive more benefits from the resource. Warnecke-Berger and Ickler (2023) state that corruption and natural resource curse are related. Natural resources make the country to be resource dependent which leads to neglect other economic sectors and weakening institutional capacity, consequently resulting in volatile economic trajectories due to fluctuating global commodity markets and fostering corruption and administrative inefficiencies.

3.3 Methods

3.3.1 Data Collection

Data are the uninterpreted materials on which decision-making is based, contingent on the evidence that can represent anything acknowledged to be true and existing (Mohajan, 2020). This study identifies and utilises significant data throughout the lifecycle of data collection (Osorio, 2014). The research bolsters the lifecycle, which includes conceptualization, identification of primary variables, definitions, concepts, and context, data collection, data distribution, and data analysis. Data on FDI was gathered from the

databases of the International Monetary Fund, International Financial Statistics, the World Bank, International Debt Statistics, and the OECD. To support the facts, the study analyses all chapters with sufficient theoretical investigation and mathematical evidence.

This research uses secondary sources, which can be defined as globally documented studies found in journals, magazines, and textbooks, in addition to data gathered primarily from the World Bank. For the primary source, information on natural resources was gathered from World Bank estimates based on the sources and methodologies narrated in The Changing Wealth of Nations. World Bank national accounts data and OECD national accounts data files were used to derive different data between 2011 to 2020.

Static panel data models, such as Ordinary Least Square (OLS), Fixed Effects (FE), and Random Effects (RE), and dynamic models, such as Generalised Method of Movement (GMM), can be utilised for data analysis. Each of these methods has underlying assumptions that must be met in order to obtain impartial and effective estimates.

Table 3.1: Summary of Operational Variables

Data	Types	Description	Source
GDP	Dependent	serves as the conventional metric for quantifying the economic value generated within an economy through the production of goods and services over a designated timeframe	World Bank

Table 3.1 continued

Natural Resources Rents	Independent	Natural resource rents are the portion of the cumulative operating surplus attributable to natural resources; their value is determined by the value of extraction	World Bank
FDI	Independent	refers to a type of international investment in which an investor from one economy has a lasting ownership interest and substantial level of influence in a company located in another economy	World Bank
Human Capital	Control	the skills, knowledge, and experience possessed by an individual or population, viewed in terms of their value or cost to an organization or country	UNDP
Political Stability	Control	a state of tranquillity, organization, and sustained continuity within the political domain	
Unemployment	Control	the percentage of the labour force that is unemployed and looking for employment	OECD
Control of Corruption	Control	Control of corruption measures how well a society limits the abuse of power for private benefit.	World Bank

3.3.2 Static Panel Data

3.3.2.1 Pooled Regression

In pooled regression, the panel data model is estimated using OLS. The Pooled regression is utilised based on the premise that the independent variables are capable of capturing all pertinent characteristics of the individual units and, therefore, the unobserved specific effects are superfluous. POLS assumes that all individuals and time periods share a common relationship between the dependent variable and the independent variables. This indicates that the slope coefficients and intercepts for all individuals and time periods are identical.

A typical static panel data regression can be expressed as:

$$Y_{it} = \alpha + \sum_{k=1}^j \beta_k X_{kit} + \varepsilon_{it} ; k = 1, \dots, j \quad (1)$$

where E represents the dependent variable and X_k represents the explanatory variables. The subscripts i and t respectively represent cross-sectional dimension and time series dimension. ε_{it} is a composite error term that can be further broke into particular effects and residual disturbance term.

For this study, the equation is written as follows:

$$GDP_{it} = \alpha + \beta_1 FDI_{it} + \beta_2 NRR_{it} + \beta_3 PS_{it} + \beta_4 HC_{it} + \beta_5 UNEMP_{it} + \beta_6 CCO_{it} + \varepsilon_{it} \quad (2)$$

Where,

GDP = Gross Domestic Product (USD)

FDI = Foreign Direct Investment (annual %)

NRR = Natural Resource Rents (annual %)

PS = Political Stability (annual %)

HC = Human Capital

UNEMP = Unemployment (annual %)

CCO = Control of Corruption

α = intercept coefficient of constant

β = the coefficient estimates

ε = error term

The second frequently utilised test in panel data analysis is to ascertain the suitable model for the investigation, namely the random effect model or the fixed effect model. In this work, the Hausman Specification test is used as a second test to figure out how statistically important the estimators are, using the method that Hausman and McFadden (1984) and Guggenberger (2010) came up with. The Hausman Specification test is a statistical hypothesis test in econometrics. It is also known as the Durbin-Wu-Hausman test, which is named after James Durbin, De-Min Wu, and Jerry Hausman. The hypotheses of the Hausman Specification test are as follows:

$H_0: \text{Cov}(\lambda_i, X_{it}) = 0$ (no correlation between λ_i and X_{it} $\rightarrow$ Random Effect Model)

$H_a: \text{Cov}(\lambda_i, X_{it}) \neq 0$ (correlation between λ_i and X_{it} $\rightarrow$ Fixed Effect Model)

If the null hypothesis of regressor-effect independence says that the Hausman statistics have an asymptotic chi-squared distribution with k degrees of freedom, then it is better to use a random effect model. But if the p -value is less than 0.05, you must use the fixed effect estimate. Also, Hausman and McFadden (1984) say that the model is consistent if there is no systematic difference between the two estimators.

3.3.2.2 Fixed Effects Regressions

A model with a fixed group effect looks at the differences between individuals' intercepts under the assumption that slopes, and variance are the same for all groups and people. Individual effects don't change over time and are thought to be part of the intercept. This means that u_{it} can be linked with other regressors. LSDV regression (OLS with a set of variables) and within effect estimation methods (WE) are used to figure out this model with a fixed effect. The equation for FE is as follows:

$$GDP_{it} = \alpha + \beta_1 FDI_{it} + \beta_2 NRR_{it} + \beta_3 PS_{it} + \beta_4 HC_{it} + \beta_5 UNEMP_{it} + \beta_6 CCO_{it} + \mu_i \quad (3)$$

Where,

GDP = Gross Domestic Product (USD)

FDI = Foreign Direct Investment (annual %)

NRR = Natural Resource Rents (annual %)

PS = Political Stability (annual %)

HC = Human Capital

UNEMP = Unemployment (annual %)

CCO = Control of Corruption

α = intercept coefficient of constant

β = the coefficient estimates

μ_i = error term

Assumption that μ_i are constants and $Cor(x_{it}, u_i) \neq 0$

3.3.2.3 Random Effects Regressions

A random effect model implies that individual effect (heterogeneity) is uncorrelated with any regressor prior to estimating error variance specific to groups (or time). u_{it} is therefore an individual-specific component of random heterogeneity or error term.

$$GDP_{it} = \alpha + \beta_1 FDI_{it} + \beta_2 NRR_{it} + \beta_3 PS_{it} + \beta_4 HC_{it} + \beta_5 UNEMP_{it} + \beta_6 CCO_{it} + \varepsilon_{it} \quad (4)$$

Where,

GDP = Gross Domestic Product (USD)

FDI = Foreign Direct Investment (annual %)

NRR = Natural Resource Rents (annual %)

PS = Political Stability (annual %)

HC = Human Capital

UNEMP = Unemployment (annual %)

CCO = Control of Corruption

α = intercept coefficient of constant

β = the coefficient estimates

ε_{it} = error term

Assumption that μ_i are drawn independently from probability distribution and $Cor(x_{it}, u_i) = 0$ and $\varepsilon_{it} = u_i + v_{it}$.

A random effect model is also known as an error component model as a result. Individually, the intercept and slope of regressors are similar. Individuals (or time intervals) are distinguished by their individual errors, not their intercepts. A random effect model

minimizes the number of parameters that must be estimated, but it generates estimates that are inconsistent when specific random effects are correlated with regressors (Greene, 2008).

The application of Generalised Least Squares (GLS) is commonly employed for estimating a random effect model when the covariance structure is known. On the other hand, Feasible Generalised Least Squares (FGLS) or Estimated Generalised Least Squares (EGLS) methods are utilised when the covariance structure of the errors is not known. The prevalence of FGLS/EGLS is higher compared to GLS due to its frequent lack of recognition. Estimating a random effect model poses a much greater level of difficulty compared to its fixed effect equivalent.

3.3.3 Dynamic Panel Data

3.3.3.1 GMM Estimation

While the Arellano-Bond estimator exhibits dynamic consistency, it can potentially be affected by finite sample biases when inadequate instruments are present. The correlation between lagged levels of the series and subsequent first differences may be minimal, particularly in cases when the series exhibits a unit root issue or when the variance of the individual effects (δ_i) grows relative to the variance of the error terms (ϵ_{it}). Despite the absence of empirical evidence indicating non-stationarity in the panel, it cannot be guaranteed that the lagged values serve as uniformly robust instruments. Hence, it is necessary to conduct a system generalised method of moments (GMM) estimation. The authors Arellano and Bover (1995) and Blundell and Bond (1998) introduced this methodology to evaluate the robustness of the findings in the face of these potential limitations. The Blundell-Bond system GMM estimator is characterised by the integration of first-differenced equations and lagged level instruments, akin to the Arellano-Bond

difference GMM estimator. Additionally, it incorporates a supplementary set of level equations and immediate lagged first differences as instruments. The following is the GMM regression equation:

$$\text{GDP}_{it} = \alpha \text{GDP}_{it-1} + \beta_1 \text{FDI}_{it} + \beta_2 \text{NRR}_{it} + \beta_3 \text{PS}_{it} + \beta_4 \text{HC}_{it} + \beta_5 \text{UNEMP}_{it} + \beta_6 \text{CCO}_{it} + \varepsilon_{it}$$

(5)

Where,

GDP = Gross Domestic Product (USD)

FDI = Foreign Direct Investment (annual %)

NRR = Natural Resource Rents (annual %)

PS = Political Stability (annual %)

HC = Human Capital

UNEMP = Unemployment (annual %)

CCO = Control of Corruption

α = intercept coefficient of constant

β = the coefficient estimates

ε_{it} = error term

The generalized method of moments (GMM) is a method for constructing estimators, analogous to maximum likelihood. GMM uses assumptions about specific moments of the random variables instead of assumptions about the entire distribution, which makes GMM more robust, at the cost of some efficiency. The assumptions are called moment conditions. GMM generalizes the method of moments by allowing the number of

moment conditions to be greater than the number of parameters. Using these extra moment conditions makes GMM more efficient. When there are more moment conditions than parameters, the estimator is said to be overidentified. GMM can efficiently combine the moment conditions when the estimator is overidentified.

Implementing GMM involves a systematic procedure that begins with the specification of the model and the derivation of the appropriate moment conditions. The first step is to define the model parameters and formulate the moment conditions based on theoretical or empirical grounds. Once the moment conditions are established, the next step is to compute the sample moments, which are the empirical counterparts of the theoretical moments. These are obtained by averaging the moment functions over the sample observations. The initial parameter estimates are then obtained by minimizing the GMM objective function using a preliminary weighting matrix, usually chosen to be the identity matrix for simplicity. GMM builds on the ideas of expected values and sample averages. Moment conditions are expected values that specify the model parameters in terms of the true moments. The sample moment conditions are the sample equivalents to the moment conditions. GMM finds the parameter values that are closest to satisfying the sample moment conditions.

3.4 Organization of the Chapter

In this chapter, the methodology that is used in gathering the data was discussed. More so, the population from which the samples were to be selected were identified. Aside from this, the proposed analysis methods were duly stated in this chapter.

CHAPTER 4

RESULTS AND DISCUSSION

4.1 Introduction

In this chapter, the effect of foreign direct investment on natural resource curse in Sub-Saharan Africa is discussed and the empirical findings of the study are explained accordingly. This chapter includes 3 sections to discuss the findings. First section, 4.1 is the introduction, second section, 4.2 is the descriptive analysis, third section, 4.3 discuss the empirical results of Sub-Saharan Africa. Fourth section, 4.4 provides empirical results by regions, the fifth section, 4.5 shows the empirical results of least developed and developing SSA countries and sixth section, 4.6 is the discussion of the results.

This study investigates the effect of foreign direct investment on natural resource curse in 46 Sub-Saharan countries during the period of 10 years, from 2011 to 2020 using Eviews software. The following sections show the estimated model of sub-Saharan Africa as a whole, the estimated model of sub-Saharan African countries by regions; the estimated model of developed and underdeveloped sub-Saharan African countries.

4.2 Descriptive Statistic

Descriptive analysis is crucial in understanding and summarizing the key characteristics of the dataset used in this study. It provides a foundational overview of the data, helping to identify patterns, anomalies, and insights that inform subsequent empirical analyses. This section elaborates on the descriptive statistics for the key variables used in the

study: Gross Domestic Product (GDP), Foreign Direct Investment (FDI), Natural Resource Rents, Political Stability, Human Capital, Unemployment, and Control of Corruption.

The dataset comprises economic indicators from 46 Sub-Saharan African countries over a ten-year period (2011-2020). The variables include both dependent and independent factors, as well as control variables that influence the economic landscape of these countries. The following table summarizes the descriptive statistics for each variable, providing the mean, standard deviation, minimum, and maximum values.

Table 4.1: Summary of Descriptive statistic

	Mean	Standard Deviation	Minimum	Maximum
Gross Domestic Product	37.328	5.799	0.2	55
Foreign Direct Investment	23.354	8.943	0.1	106
Natural Resource Rents	11.234	8.595	1	52.8
Political Stability	3.421	0.971	1	5
Human Capital	1.431	0.18	1	1.82
Unemployment	8.44	6.975	0.32	26.061
Control of Corruption	1.333	0.674	0.215	3.389

The GDP, serving as the dependent variable, has a mean value of 37.328 and a standard deviation of 5.799. The minimum value of 0.2 and the maximum of 55 indicate a substantial disparity in economic output across Sub-Saharan Africa. This variability reflects differences in economic development, resource management, and policy effectiveness among the countries studied.

FDI, an independent variable, exhibits a mean value of 23.354 with a standard deviation of 8.943. The wide range from 0.1 to 106 suggests significant differences in the

levels of foreign investment attracted by these countries. Natural Resource Rents is also an independent variable, with a mean of 11.234 and a standard deviation of 8.595. Values range from 1 to 52.8, indicating that while some countries are heavily reliant on natural resources, others may have more diversified economies. High reliance on natural resources can be both a blessing and a curse, potentially leading to phenomena like the natural resource curse.

Political Stability, a control variable, shows a mean value of 3.421 and a standard deviation of 0.971. The minimum and maximum values (1 and 5, respectively) highlight significant variations in the political environments of these countries. Human capital, with a mean of 1.431 and a standard deviation of 0.18, shows relatively less variability. The range is from 1 to 1.82. The unemployment rate, another control variable, has a mean of 8.44 and a high standard deviation of 6.975. The values range from 0.32 to 26.061, indicating significant disparities in unemployment rates across the region. Control of corruption, also a control variable, shows a mean of 1.333 and a standard deviation of 0.674, with values ranging from 0.215 to 3.389.

4.3 Diagnostic Test

Table 4.2: Heteroscedasticity Test

Variables	Breusch-Pagan LM
LGDP	0.5437 (0.3028)
LFDI	-0.0531 (0.7343)
LNRR	0.0335 (0.6553)
LPS	0.2889 (0.1313)

Table 4.2 continued

LHC	-0.352 (0.4987)
LUNEMP	0.0503 (0.4503)
LCCO	0.0666 (0.6244)

Notes: Null hypothesis; residuals are homoscedastic. (p-value is larger than 5%). Alternative hypothesis; residuals are not homoscedastic. (p-value is lower than 5%). The asterisks ***, ** and * denote the significance level at 1, 5 and 10 percent respectively.

Homoscedasticity refers to the condition where the dispersion of error terms or residuals remains consistent across the full range of values of the independent variables. This characteristic signifies a uniform spread of residuals regardless of the alterations in the predictor variable's value. Such a consistent variance across the dataset is a fundamental assumption across statistical tests. Contrarily, heteroscedasticity emerges when the dispersion of error terms does not maintain consistency across all levels of the independent variables. In simpler terms, the residual spread amplifies or reduces in alignment with the predictor variable's value fluctuations. This phenomenon can result in unreliable and misleading test statistics, standard errors, and hypothesis tests. All the variables including and their p value have shown that there is no heteroscedasticity problem with the data.

4.4 Empirical Results of SSA Countries

Based on the methodology displayed in chapter 3, this study uses GMM to estimate the model in Sub-Saharan Africa. Dynamic analysis discusses the economic quantities that apply to various points in time. A system is dynamical if its behavior throughout time is determined by functional equations in which variables at different moments of time play an important role. Mehta (1963) stated that an economy is said to be dynamic when the various variables have values at any time dependent on their values at some other time. The values

of the variables do not depend on any outside, exogenous forces. The equation shows the different variables and coefficients.

Estimated model: $GDP_{it} = \alpha + \beta_1 FDI_{it} + \beta_2 NRR_{it} + \beta_3 PS_{it} + \beta_4 HC_{it} + \beta_5 UNEMP_{it} + \beta_6 CCO_{it} + \varepsilon_{it}$

Table 4.2 shows the GMM results for the estimated model of sub-Saharan African countries. The results show that the variables are statistically significant at 1% at first difference. The results are interpreted through three ways which are sign, coefficient, and P-value.

Table 4.2: GMM Test Results for Sub-Saharan Countries

Variables	Coefficient	P-value
LGDP _{t-1}	-0.017***	(0.000)
LFDI	-0.0873***	(0.000)
LNRR	0.044***	(0.000)
LPS	0.372***	(0.000)
LHC	1.457***	(0.000)
LUNEMP	-0.486***	(0.000)
LCCO	-0.49***	(0.000)

Note: Asterisks ***, **, and * means significant at 1%, 5% and 10% respectively.

Results show that LGDP and LFDI have a positive and significant relationship at 1% significance level. If other variables are kept constant, 1 unit decrease in FDI result in 0.0873 unit decrease in GDP. LGDP have a negative relationship with LNRR and LPS, a unit increase in natural resource rents decreases GDP by 0.044 unit while a unit increase in political stability decreases GDP by 0.372 unit when other variables are kept constant.

Results also show that LGDP has a negative and significant relationship with LHC while LUNEMP and LCCO have a positive relationship with LGDP. The coefficient values show that a unit increase in human capital decreases economic growth by 1.457 units. A unit

decrease in unemployment is associated with 0.486 decrease in GDP while 1 unit decrease in control of corruption decreases the economic growth by 0.49 unit.

Some of these results align with the results from different studies including Ofori and Grechyna (2021) natural resources rents especially oil and natural gas rents have a negative impact on GDP increasing the natural resource curse. However, results contradict the general theory which state that unemployment has a negative impact on GDP, whereas human capital and political stability should have a positive impact on GDP. On the other hand, the results show that there is a presence of natural resource curse in SSA as a whole and FDI and control of corruption are some of the factors contributing to GDP growth.

4.5 Empirical Result by Regions

Panel data convey information on a specific economy both across individuals and across time. A major advantage of panel data is increased precision in estimation. This study uses static analysis to examine the model. Static test explains the relationship between variables whose values relate to the same period of time. The Pooled Ordinary Least Squares (POLS) model assumes that all entities in the data set are considered to have the same underlying characteristics. The Fixed Effect (FE) model captures changes within groups. This model can control for unobserved entity-specific effects. Meanwhile, the Random Effect (RE) model treats the unobserved entity-specific effects as random and uncorrelated with the explanatory variables. Hausman test is used to determine which model is suitable for each estimated model.

4.5.1 Western Africa

Table 4.3 shows the results for the estimated model of western African countries. The results show that LGDP is statistically significant at 1%, LCCO is statistically significant at 10% in the POLS and Random effect model, LUNEMP is statistically

significant at 1% in the POLS and random effect model and significant at 10% in the fixed effect model while LFDI, LNRR and LHC are statistically insignificant.

Table 4.3: Static Test Results for Western African Countries

Variables	POLS	Fixed	Random
C	3.338*** (0.000)	3.143*** (0.000)	3.338*** (0.000)
LFDI	0.056 (0.295)	0.106 (0.261)	0.056 (0.295)
LNRR	-0.012 (0.738)	0.0006 (0.992)	-0.012 (0.738)
LPS	-0.134*** (0.004)	0.081 (0.356)	-0.134*** (0.004)
LHC	0.023 (0.513)	0.089 (0.391)	0.023 (0.513)
LCCO	0.055* (0.09)	-0.023 (0.853)	0.055* (0.09)
LUNEMP	-0.115*** (0.001)	-0.147* (0.054)	-0.115*** (0.001)

Note: Asterisks ***, **, and * means significant at 1%, 5% and 10% respectively.

After conducting the Hausman test, results show that POLS is the appropriate test to be used. Based on the POLS test results show that there is a positive relationship between LGDP and the variables LFDI and LHC although not significant. The coefficient values show that 1 unit increase in FDI increases economic growth by 0.056 unit and 1 unit increase in human capital increases GDP by 0.023 unit. The relationship between LGDP and LCCO is positive and significant at 10%. Other variables kept constant, 1 unit increase in control of corruption increases economic growth by 0.055 unit.

LGDP has a negative and significant relationship with LPS and LUNEMP, a unit decrease in political stability increases GDP by 0.134 while 1 unit decrease in unemployment increases GDP by 0.115. The negative relationship between LNRR and LGDP shows that a decrease in 1 unit of natural resource rents increases economic growth by 0.012 unit.

Results show that in western Africa control of corruption contribute positively to economic growth while unemployment affects the GDP negatively. However, the presence of natural resource curse in this region is not significant. This argues the findings of Orvoty and Jibrilla (2019) who affirmed natural resource curse in west African countries such as Nigeria. However, other studies such as Onuoha and Elegbede (2018) stated that Nigeria should not be classified as another case of natural resource curse because the country has experienced significant unemployment problems. Unemployment, as stated in different studies and theories, has a negative impact on the GDP and the result from this study agrees with those studies.

4.5.2 Central Africa

Results of the static test for central African countries show that the variables are statistically insignificant except for LGDP. Table 4.4 shows the results of the estimation.

Table 4.4: Static Test Results for Central Africa

Variables	POLS	Fixed	Random
C	3.646*** (0.000)	2.903** (0.0142)	3.512*** (0.000)
LFDI	0.018 (0.871)	0.052 (0.6485)	0.0218 (0.8426)
LNRR	0.001 (0.992)	0.141 (0.6198)	0.003 (0.9825)
LPS	0.095 (0.712)	-0.326 (0.594)	0.099 (0.7371)
LHC	0.139 (0.518)	-0.461 (0.234)	0.061 (0.799)

Table 4.4 continued

LUNEMP	-0.093 (0.392)	0.053 (0.882)	-0.065 (0.607)
LCCO	0.025 (0.914)	0.253 (0.657)	0.048 (0.859)

Note: Asterisks ***, **, and * means significant at 1%, 5% and 10% respectively.

Results show that there is a negative and insignificant relationship between LGDP and LUNEMP in central African countries. Unlike unemployment, all the other variables LFDI, LNRR, LPS, LHC, and LCCO have a positive relationship with LGDP. The coefficient values show that 1 unit increase in FDI increases economic growth by 0.018, while a unit increase in natural resource rents increases economic growth by 0.001. Increasing political stability by 1 unit increases economic growth by 0.095 unit and an increase of 1 unit of human capital increases GDP by 0.139. A GDP increase of 0.025 unit occur with an increase of 1 unit of control of corruption. A unit decrease in unemployment results in 0.093 unit increment in GDP.

The Hausman test suggests that POLS is the best test to be used in this region. Contrary to the results from Kablan and Loening (2012) study who found natural resource curse in central African countries like Chad, the above results show that there is no natural resource curse in the region. All the variables foreign direct investment, natural resource rents, political stability, human capital, unemployment and control of corruption do not have a significant impact on economic growth in the central region.

4.5.3 Southern Africa

Table 4.5 shows the static estimated results for southern African countries.

Table 4.5: Static Test Results for Southern Africa

Variables	POLS	Fixed	Random
C	2.069*** (0.000)	2.98*** (0.0001)	2.069*** (0.000)
LFDI	0.269*** (0.0044)	0.178 (0.133)	0.269*** (0.003)
LNRR	0.138* (0.063)	0.065 (0.764)	0.137*** (0.005)
LPS	0.174 (0.288)	0.453* (0.057)	0.174*** (0.004)
LHC	0.537** (0.036)	1.01** (0.0185)	0.537** (0.029)
LUNEMP	-0.051* (0.208)	-0.205 (0.321)	-0.051* (0.099)
LCCO	-0.115 (0.475)	-0.559 (0.173)	-0.115 (0.254)

Note: Asterisks ***, **, and * means significant at 1%, 5% and 10% respectively.

Hausman test results show that random effect model is the best test to be used. Results of the random effect model show that there is a positive and significant relationship between the dependent variable LGDP and LFDI, LNRR, LPS in southern Africa. If other variables are kept constant, 1 unit increase in FDI results in 0.269 unit increase in GDP. A unit increase in natural resource rents increases GDP by 0.137 unit while a unit increase in political stability increases GDP by 0.174 unit when other variables are kept constant. Results also show that LGDP has a positive and significant relationship with LHC while LUNEMP and LCCO have a negative relationship with LGDP. The coefficient values show that a unit increase in human capital increases economic growth by 0.537 unit.

A unit decrease in unemployment is associated with 0.051 increase in GDP while 1 unit decrease in control of corruption increases the economic growth by 0.115 unit. This

shows that there is no natural resource curse in southern African region which aligns with previous studies that showed the same results. FDI, natural resource rents, political stability, human capital have a positive contribution to the economic growth of the southern African countries, unemployment has a negative impact on the economic growth which also aligns with theory. These findings align with previous studies on southern African countries show that southern African countries have either a partial or no natural resource curse. Hodge (2015) stated that there is no natural resource curse in South Africa while Barczikay et al. (2020) declare that Botswana experiences a form of partial natural resource curse. This study also confirms the findings from previous studies, results of the analysis show that there is no natural resource curse in southern Africa, in contrary, natural resource have a positive impact on economic growth. Foreign direct investment, political stability, and human capital increase economic growth of the region. Unemployment has a negative impact on the region's economy.

4.5.4 Eastern Africa

The static estimation conducted on eastern African countries shows that LGDP, LNRR, LFDI are significant at 1%, 5% and 10% significance level respectively in the random effect test model. In the POLS and fixed effect model, all the variables are statistically insignificant except for LGDP. Table 4.6 shows the estimation results.

Table 4.6: Static Test Results for Eastern African Countries

Variables	POLS	Fixed	Random
C	2.206*** (0.000)	1.905** (0.017)	2.076*** (0.001)
LFDI	0.053 (0.415)	0.078 (0.525)	0.083* (0.07)

Table 4.6 continued

LNRR	0.1 (0.108)	0.069 (0.499)	0.086** (0.048)
LPS	0.117 (0.58)	-0.206 (0.4678)	0.004 (0.976)
LHC	-0.783 (0.137)	0.921 (0.4064)	-0.193 (0.752)
LUNEMP	0.046 (0.429)	0.095 (0.7994)	0.063 (0.478)
LCCO	0.02 (0.1004)	-0.34 (0.346)	0.139 (0.476)

Note: Asterisks ***, **, and * means significant at 1%, 5% and 10% respectively.

Hausman test suggests the random effect model is the best test for this equation, hence from the random test results it can be concluded that there is a positive and significant relationship between LGDP and the independent variables LFDI and LNRR, a positive but insignificant relationship between LGDP and LPS, LUNEMP, and LCCO; and a negative but insignificant relationship between LGDP and LHC. The coefficient values show that 1 unit increase in FDI increase economic growth by 0.083 unit and 1 unit decrease in human capital increases GDP by 0.193 unit. Other variables kept constant, 1 unit increase in control of corruption increases economic growth by 0.139 unit and a unit increase in political stability increases GDP by 0.004 while 1 unit increase in unemployment increases GDP by 0.063. The relationship between LNRR and LGDP shows that an increase in 1 unit of natural resource rents increases economic growth by 0.086 unit. Hence, there is no natural resource curse in Eastern Africa contradicting previous studies such as Matallah (2020) and Ofori and Grechyna (2021) and aligning with others such as Yang et al. (2019) suggesting that there is no natural resource curse.

4.6 Empirical Results of Least Developed and Developing SSA Countries

The economic development of Sub-Saharan African countries can be better understood by analyzing them through the lens of their GDP levels. This study categorizes these countries into two groups: least developed countries and developing countries. This classification allows for a nuanced exploration of the economic dynamics and the impact of various factors on GDP growth in each group. The analysis utilizes Pooled Ordinary Least Squares (POLS), Fixed Effects (FE), and Random Effects (RE) models to provide a comprehensive understanding of the relationships between the variables.

4.6.1 Least developed Countries

Table 4.7 shows the results for the estimated model of least developed Sub-Saharan countries.

Table 4.7: Least developed Sub-Saharan African Countries

Variables	POLS	Fixed	Random
C	3.035*** (0.000)	3.511*** (0.000)	3.093*** (0.000)
LFDI	0.075 (0.261)	0.051 (0.26)	0.064 (0.273)
LNRR	-0.014 (0.693)	0.038 (0.175)	-0.012 (0.6997)
LPS	0.39*** (0.004)	0.022 (0.884)	0.366*** (0.004)
LHC	0.082 (0.741)	-0.397 (0.484)	0.068 (0.774)
LUNEMP	-0.12*** (0.006)	-0.071* (0.0995)	-0.117*** (0.0013)
LCCO	0.068 (0.325)	0.0186 (0.897)	-0.078 (0.2432)

Note: Asterisks ***, **, and * means significant at 1%, 5% and 10% respectively.

Based on the table above, the results show that there is a negative relationship between LGDP and LNRR, and LUNEMP while there is a positive relationship between LGDP and LFDI, LPS, LHC and LCCO. Other variables kept constant, a unit increase in FDI increases GDP by 0.075 unit while a unit increase in natural resources rents decreases GDP by 0.014 unit. A unit increase in political stability results in 0.39 unit increase in GDP and 1 unit decrease in unemployment results in 0.12 unit increase in GDP. An increase in human capital by 1 unit results in 0.082 unit increase in GDP while a unit increase in control of corruption results in 0.068 unit increase in GDP. These results show that natural resource has a negative relationship on GDP but not significant. Political stability contributes to the economic growth of underdeveloped countries while unemployment affects them negatively. The effects of FDI, human capital, natural resources and control of corruption in these countries are not significant.

These findings highlight that for least developed countries, enhancing political stability and reducing unemployment are critical for economic growth. The insignificant impact of FDI and natural resource rents suggests a need for better policies to leverage these factors effectively. To further understand the economic dynamics, it is essential to examine how these relationships align with the objectives and research questions of this study. The primary objective is to analyze the presence and impact of the natural resource curse in Sub-Saharan Africa and the role of FDI in this context. The findings indicate that in least developed countries, the natural resource curse may be present, as natural resource rents do not significantly contribute to economic growth. This aligns with previous research indicating that poor management and weak institutions can lead to adverse outcomes from resource wealth (Akanbi & Osinubi, 2023; Adusei, 2022).

4.6.2 Developing Countries

Table 4.8 shows the results for the estimated model of developing Sub-Saharan countries.

Table 4.8: Developing Sub-Saharan African Countries

Variables	POLS	Fixed	Random
C	3.488*** (0.000)	3.169*** (0.000)	3.397*** (0.000)
LFDI	0.054 (0.23)	0.111*** (0.0004)	0.066* (0.094)
LNRR	0.009 (0.468)	0.078*** (0.0001)	0.028** (0.022)
LPS	0.023 (0.318)	0.024 (0.726)	0.032* (0.084)
LHC	-0.079 (0.186)	-0.045 (0.756)	-0.069 (0.251)
LUNEMP	-0.02* (0.046)	-0.039 (0.244)	-0.021* (0.097)
LCCO	0.024 (0.218)	0.132 (0.128)	0.038 (0.068)

Note: Asterisks ***, **, and * means significant at 1%, 5% and 10% respectively.

Hausman test results suggest that random effect model is the appropriate one to be used in this analysis. Results show that there is a positive relationship between LGDP and the other variables except LHC and LUNEMP. A unit increase in FDI increases GDP by 0.066 unit while a unit increase in natural resources rents increases GDP by 0.028 unit. A unit increase in political stability results in 0.032 unit increase in GDP and 1 unit decrease in unemployment results in 0.021 unit increase in GDP. A decrease in human capital by 1 unit results in 0.069 unit increase in GDP while a unit increase in control of corruption results in 0.038 unit increase in GDP. The relationship between LGDP and LHC and LCCO are not significant. Since the relationship between LGDP and LNRR is positive, we can say that

there is no evidence of natural resource curse in developed countries. These results further emphasize the results from Kopinski et al. (2013) stated that a stable political system, coupled with a relative full-flavored diversified economy and civil society strength, makes it impossible for the natural resources discovery to ruin the economy.

4.7 Discussion of the Results

After different tests such as GMM, POLS, FE and RE have been conducted, results can be categorized into three points. First, to answer the first objective, the analysis conducted on Sub-Saharan Africa indicates that natural resource rents contribute to decreasing economic growth of the region which concludes that there is natural resource curse in the region. These findings align with many other studies such as Abdalaziz et al. (2018), Harding et al. (2020) and many more that indicate that there is natural resource curse especially in developing countries and most of them are in Sub-Saharan African region.

Secondly, results show that FDI has a positive impact on Sub-Saharan African economic growth despite the presence of natural resource curse. The neo-classical theory has shown that capital accumulation directly boosts economic growth in proportion to the share of capital in national output. Furthermore, the growth of the economy depends on the increase in the labour force and technical innovation. And FDI is also known to contribute to the increase of production in the particular sector which consequently leads to an increase in the labour force. Hence it can be said that this study agrees with the theory indicating that FDI enhances the capital stock in the host country and this would, in turn, increase economic growth. This suggest that Sub-Saharan countries should encourage and attract more FDI.

As stated by Bokpin et al. (2015), natural resources attract FDI which in return increase economic growth. From this perspective, Bokpin et al. (2015) were able to conclude that there is no natural resource curse in Sub-Saharan Africa which oppose the findings from

this study. Natural resource curse in those countries may occur due to weak institutions and mismanagement of resource revenues. This means that natural resource curse is not only occasioned through the mismanagement of natural resources but can also be occasioned by other factors hence countries need to strengthen their institutions, security and implement measure for an efficient allocation of resources revenues in order to escape from natural resource curse. This answers the second objective of this study.

Thirdly, for objective 3, analysis conducted on the different sub-regions of Sub-Saharan Africa, that is eastern, western, southern, and central regions show different results. Results show that there is no natural resource curse in any of those regions. This may be due to different factors affecting each region and each country individually. The variables used in this study might affect some countries and not the others in a particular region. Commonly, unemployment is proved to impact negatively the economic growth while control of corruption generally improves and increases the economic growth. Analysis in western Africa shows the impact of FDI and natural resource on economic growth is not significant and that controlling corruption is important in increasing the economy of the region. This argues the findings of Orvoty and Jibrilla (2019) who affirmed natural resource curse in west African countries such as Nigeria. However, other studies such as Onuoha and Elegbede (2018) stated that Nigeria should not be classified as another case of natural resource curse because the country has experienced significant unemployment problems. Unemployment, as stated in different studies and theories, has a negative impact on the GDP and the result from this study agrees with those studies.

Previous studies on southern African countries show that southern African countries have either a partial or no natural resource curse. Hodge (2015) stated that there is no natural resource curse in South Africa while Barczikay et al. (2020) declare that Botswana

experiences a form of partial natural resource curse. This study also confirms the findings from previous studies, results of the analysis show that there is no natural resource curse in southern Africa, in contrary, natural resource have a positive impact on economic growth. Foreign direct investment, political stability, and human capital increase economic growth of the region. Unemployment has a negative impact on the region's economy.

Central African countries are known to have a lot of political stability and ongoing conflicts. The region is overflowed by natural resources such as oil and minerals like gold and diamonds. Contrary to the results from Kablan and Loening (2012) study who found natural resource curse in Chad, this study's analysis shows that there is no natural resource curse in the region. All the variables foreign direct investment, natural resource rents, political stability, human capital, unemployment and control of corruption do not have a significant impact on economic growth in the central region.

Analysis on eastern Africa suggest that natural resources contribute to the increase of economic growth in the region. FDI also has a positive impact on economic growth of the region hence an increase in FDI will generate an increase in GDP. Other variables such as unemployment, political stability, human capital, unemployment and control of corruption has no significant impact on the GDP.

In this study, analysis on least developed and developed countries have been conducted. On one hand, results show that natural resources have a positive effect on economic growth in developed Sub-Saharan countries. Foreign direct investment also contributes to the increase of economic growth in those countries as well as political stability. Kopinski et al. (2013) stated that a stable political system, coupled with a relative full-flavored diversified economy and civil society strength, makes it impossible for the natural

resources discovery to ruin the economy. However, results show that a rise in unemployment can hinder the economic growth of those countries.

On the other hand, results from least developed countries show that natural resources as well as foreign direct investment do not contribute much to the economy in least developed countries. But political stability has a positive effect on their economy. And as supported by theories such as Okun (1962) unemployment decrease economic growth of those countries.

4.8 Organization of the Chapter

In conclusion, two sets of tests have been used to analyse the study. The dynamic panel data analysis using the GMM to analyse the natural resource curse in Sub-Saharan Africa and the static panel data analysis using the POLS, fixed effects and random effects models to analyse the natural resource curse in Sub-Saharan African sub regions such as the east, west, south, and central.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1 Introduction

Chapter five provides a comprehensive conclusion of the study and offers policy recommendations based on the empirical findings. It also discusses the study's limitations and proposes directions for future research. This chapter is divided into five sections, section 5.1 is the introduction, 5.2 summarises the findings of analysis done in the previous chapter, 5.3 explains the policy recommendation of the study. Section 5.4 covers the limitation of the study and suggestions for future studies.

5.2 Summary of the Results

The primary objective of this study was to analyze whether there is a natural resource curse in Sub-Saharan Africa (SSA) and to examine the impact of foreign direct investment (FDI) on economic growth in this context. This research was motivated by the need to understand the contradictory findings in existing literature regarding the natural resource curse and the role of FDI in SSA's economic development, as discussed in Chapter 1 and Chapter 2.

In Chapter 1, the research objectives were clearly defined, emphasizing the need to address the natural resource curse and understand the role of FDI in SSA's economic development. The objectives highlighted the importance of filling the gaps in existing research, particularly the mixed evidence on the natural resource curse and the lack of comprehensive regional analyses within SSA. This study has addressed these objectives by providing a detailed regional analysis and highlighting the positive impact of FDI on economic growth, even in the presence of a natural resource curse.

Chapter 2 reviewed the existing literature and identified several research gaps, including the need for more nuanced regional analyses and a deeper understanding of the mechanisms through which FDI influences economic growth. This study contributes to the literature by confirming the positive effect of FDI on economic growth and providing a regional perspective on the natural resource curse. However, the limitations identified in this chapter point to the need for further research to fully address the complexities and nuances of the topic.

Objective 1: To examine the existence of natural resources curse in Sub-Saharan Africa. The results presented in Chapter 4 indicate the presence of a natural resource curse in SSA which answers the first objective which is to examine the existence of natural resources curse in Sub-Saharan African. However, this phenomenon is not uniform across all sub-regions. The analysis showed that while the SSA region as a whole suffers from a natural resource curse, the sub-regions exhibit different dynamics. Specifically, the empirical results indicate no significant natural resource curse in Eastern and Southern Africa. This finding aligns with previous studies by Barczikay et al. (2020) and Adika (2020), which suggest that these regions experience a partial or occasional natural resource curse.

Conversely, studies by Oludimu and Alola (2022) and Olusegun (2021) have reported a natural resource curse in Western Africa. However, the results of this study challenge this assertion, indicating no significant natural resource curse in Western Africa. Similarly, contrary to some studies suggesting a natural resource curse in oil-producing countries in Central Africa, this study found no significant natural resource curse in Central Africa.

Objective 2: To answer second objective which is to analyse the effect of foreign direct investment on natural resources and economic growth in Sub-Saharan African region, FDI

was found to have a positive and significant relationship with GDP, suggesting that FDI enhances economic growth in SSA. This finding corroborates the neo-classical theory, which posits that capital accumulation boosts economic growth. Furthermore, the positive impact of FDI on economic growth suggests that SSA countries should encourage and attract more FDI to foster economic development.

Objective 3: The empirical results by regions provide further insights. In Western Africa, the study found that FDI and human capital have a positive but not significant relationship with GDP, while control of corruption contributes positively to economic growth. Unemployment negatively affects GDP, underscoring the need for job creation strategies. In Central Africa, the results indicated no significant impact of the analyzed variables on GDP, suggesting that the natural resource curse is not present in this region. This could be due to varying factors such as political instability and ongoing conflicts. In Southern Africa, FDI, natural resource rents, political stability, and human capital positively contribute to economic growth, while unemployment negatively impacts it. This region does not exhibit a natural resource curse. While in Eastern Africa, FDI and natural resource rents positively and significantly affect GDP, indicating that these regions benefit from natural resources and foreign investments. And this answers the third objective of this research which is to investigate the natural resources curse phenomenon among the Sub-Saharan regions.

5.3 Policy Recommendations

The purpose of this study is to examine the effect that FDI has on the relationship between natural resources and economic growth. Hence, this research is a review and analysis on the natural resource curse and the impact of FDI. This research contributes to the literature in various ways. First, this study contributes to the literature by confirming the positive effect of FDI on economic growth regardless of the natural resource curse. In other

words, despite the fact that there is a presence of natural resource curse in Sub-Saharan Africa, FDI still has a positive contribution on the economic growth of the region.

The study of these factors of the economy helps researchers by providing a in depth understanding of the role of FDI on natural resource and economic growth and clarify the role of other factors that can contribute to decreasing the economic growth. Overall, the positive correlation between multiple indicators of natural resources and FDI in Africa seems promising. This is understandable considering the continent's abundance of natural resources. On the contrary, the lifespan depletion of natural resources requires African economic managers to do more to diversify into non-natural resource related FDI. Various rents establish important linkages between trading blocs. These trade blocs are such as These are Southern African Development Community (SADC), Economic Community of West African States (ECOWAS) among others. African governments must improve their trade blocs in order to capitalize on the spillover effects of foreign direct investment (FDI) that may come to them. Bokpin et al. (2015) declared that regional economic cooperation may promote FDI into SSA. The strengthening of trade blocs will help in the attraction of more FDI not only in resource sectors but also in non-resource sectors.

Moreover, as governments are strengthening trade blocs and encouraging FDI, they should be careful in their own spending. Controlling government spending is crucial in ending natural resource curse and making countries to benefit from their resources. As proven by Cust et al. (2022) natural resource curse can be connected to government expenditures. They suggested that resource revenues should be transferred directly to citizens who would then be taxed to finance public expenditures.

Secondly, countries ought to allocate a portion of their resource earnings to support the tradable non-resource industry. The ability to tax the resource sector and allocate earnings

to other sectors while avoiding losses, which may be difficult to achieve in countries where corruption is widespread. Corden (1984) claimed that taxing the resource sector to fund tradable sector enterprises and workers (compensation) can assist to alleviate the natural resource curse. Redistributing resource generated revenues to the declining sector could help to reduce if not stop the natural resource curse. This necessitates an efficient tax structure capable of taxing the resource sector and redistributing income to other sectors without incurring losses in the process. Furthermore, redistribution necessitates precisely determining which sectors will be suitable and work efficiently to alter the effect of natural resource curse.

If countries are seeking rapid development to escape the grips of poverty, natural resources are certainly not the solution. Sub-Saharan countries need to diversify their economies in order to achieve the economic development they are seeking. Although it is empirically shown that countries with the most natural resources have a generally high GDP, they are also theoretically the most affected by conflicts, corruption and insecurities (Otaha, 2020).

Another recommendation is for government to control corruption, this typically involves strengthening governance structures, improving transparency, and enforcing the rule of law. Controlling corruption leads to efficiency in resource allocation and undermines the effectiveness of public institutions, this will lead to an increase in productivity and economic growth. When a country exercise control of corruption, it has a more accountable institutions, a better decision-making process, and a more conducive environment for economic activity. Investors are more likely to have confidence in the integrity of the business environment, leading to higher levels of investment. it is important to combat corruption among government officials and policymakers. Corruption is one of the root

causes of violence, instability, and underdevelopment. Corruption and nepotism have two primary negative effects on development. First, concerned policymakers take measures not in the interest of the society but with personal economic gains in mind. Similarly, family members and other affiliates are often given positions within a government even when they are less qualified than other candidates.

It is essential that all possible measures are undertaken to prevent corruption and to tackle the effects of corrupt government practices. Measures that could be undertaken to combat corruption include adopting a transparent and concise legal framework that includes guidelines for government officials involved in consignment negotiations, accountability mechanisms, and strong sanctions on those found guilty of corruption. Establishing an autonomous and impartial supervisory mechanism to ensure proper implementation and execution of the legal framework and to enforce sanctions when necessary; - empowering citizens to stigmatize corrupt practices through anticorruption awareness campaigns; - ratifying and adopting international and regional legal frameworks aimed at combating corruption and collaborating with concerned supervisory bodies that monitor the performance of state-parties; and - participating in existing anticorruption initiatives such as those undertaken by Transparency International and the Extractive Industry Transparency Initiative.

The extractive industry is advised to comply with international standards of conduct with regard to labour standards, to avoid corrupt practices, and to return a fair share of the rents of natural resource exploitation to populations affected by the exploitation. Companies are recommended to, for example, commit to the Extractive Industry Transparency Initiative and to participate in initiatives undertaken by the UN Global Compact.

5.4 Limitation and Suggestion for Future Studies

This study has successfully contributed to the ongoing discourse about the natural resource curse and the impact of foreign direct investment (FDI) on economic growth in Sub-Saharan Africa (SSA). However, it is important to acknowledge its limitations and suggest areas for future research. One significant limitation is the difficulty in accurately measuring the impact of conflicts on the economies of resource-rich countries in SSA. Countries such as South Sudan and Eritrea, despite being part of the SSA region, do not have comprehensive data available for many of the variables analyzed in this study. This lack of data limits the scope of analysis and potentially omits important contextual factors that could influence the findings. Another limitation is the unavailability of certain variables, such as the real effective exchange rate, for all selected countries. This omission can affect the robustness and generalization of the results. Including such variables in future studies could enhance the accuracy and depth of the analysis. Additionally, exploring other theoretically significant variables that could influence the natural resource curse, such as institutional quality, governance, and political stability, would provide a more comprehensive understanding of the dynamics at play.

The study highlights the need for more granular research that takes into account the unique factors specific to each sub-region within SSA. As demonstrated in the empirical results, the presence and impact of the natural resource curse vary significantly across different regions. For instance, Eastern and Southern Africa do not exhibit a significant natural resource curse, whereas previous studies have suggested its presence in Western Africa. A deeper regional analysis considering local factors such as governance, policy environment, and economic structures could yield more tailored and actionable insights. The literature review in chapter two identified a critical gap in understanding how best to manage

resource revenues to avoid the natural resource curse. This study touches on the importance of effective resource revenue management but does not delve deeply into specific strategies. Future research should investigate various models of resource revenue management, including direct transfers to citizens, investment in public goods, and stabilization funds, to determine their effectiveness in different SSA contexts.

In conclusion, while this study makes significant contributions to understanding the natural resource curse and the impact of FDI on economic growth in SSA, it also highlights the need for further research to address its limitations. Improving data availability, incorporating additional variables, conducting more granular regional analyses, exploring effective resource revenue management strategies, and investigating the mechanisms through which corruption affects economic growth are critical areas for future research. Addressing these gaps will provide a more comprehensive and nuanced understanding of how SSA countries can harness their natural resources and attract FDI to achieve sustainable economic growth.

5.5 Summary of the Study

The culmination of this study provides a comprehensive analysis of the natural resource curse and the impact of foreign direct investment (FDI) on economic growth in Sub-Saharan Africa (SSA). This research underscores the complexity and variability of economic phenomena within the SSA region, revealing significant insights and implications for policymakers, economists, and development practitioners.

Firstly, the study confirms the presence of a natural resource curse in the SSA region as a whole. This aligns with existing literature that identifies the paradox where resource-rich countries experience slower economic growth compared to their resource-poor counterparts. However, this study also highlights significant regional disparities within SSA.

While Western Africa shows evidence of the natural resource curse, regions such as Eastern and Southern Africa do not exhibit the same negative correlation between resource abundance and economic growth. These findings challenge the homogeneity often assumed in studies of the natural resource curse and call for more nuanced, region-specific analyses.

Secondly, the study finds that FDI plays a crucial role in enhancing economic growth across SSA, even in the presence of the natural resource curse. The positive and significant relationship between FDI and GDP supports the neo-classical theory of capital accumulation and its contribution to economic development. This insight is pivotal for policymakers in SSA, suggesting that efforts to attract and retain FDI should be prioritized as a strategy for economic growth and development. Moreover, the study emphasizes the need for strong institutional frameworks and governance structures to manage FDI effectively and ensure that it contributes to sustainable development.

The policy recommendations derived from this study are multifaceted. They highlight the importance of improving regional economic cooperation, strengthening trade blocs such as ECOWAS, EAC, WAEMU, and others and implementing effective governance and anti-corruption measures. These strategies are crucial for mitigating the adverse effects of the natural resource curse and maximizing the benefits of FDI. Additionally, the study suggests that governments should adopt prudent fiscal policies, including controlling government expenditures and ensuring that resource revenues are managed transparently and effectively. Redistributing resource-generated revenues to support non-resource sectors is also recommended to diversify economies and reduce dependency on natural resources.

The limitations of this study, particularly regarding data availability and the challenges of measuring the impact of conflicts on economic growth, point to areas for future

research. There is a need for more comprehensive data collection in countries with significant data gaps, such as South Sudan and Eritrea. Future studies should also explore additional variables, such as institutional quality and governance, to provide a more detailed understanding of the factors influencing economic growth in SSA.

In conclusion, this study contributes significantly to the literature on the natural resource curse and FDI in SSA by providing detailed regional analyses and highlighting the positive role of FDI in promoting economic growth. The findings underscore the importance of tailored policy interventions that consider regional specifications and the need for strong governance frameworks to manage resource wealth and attract sustainable FDI. By addressing the limitations and research gaps identified, future studies can build on this work to develop more effective strategies for economic development in SSA, ultimately contributing to the region's long-term prosperity and stability.

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APPENDICES

Sub-Saharan Africa Map

