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Natural Resource Dependence and Economic growth in Ghana: the effect of Oil Production

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List of Acronyms

ABFA	Annual Budget Funding Amount
ASRP	Agriculture Sector Rehabilitation Program
BOG	Bank of Ghana
EDA	Exploratory Data Analysis
ERP	Economic Recovery Program
GDP	Gross Domestic Product
GPRSI	Ghana Poverty Reduction Strategy I
GPRSII	Growth and Poverty Reduction Strategy II
GSGDA	Ghana Shared Growth and Development Agenda
GSS	Ghana Statistical Service
HIPC	Highly Indebted Poor Countries
IMF	International Monetary Fund
ISI	Import Substitution Industrialization
PRMA	Petroleum Revenue Management Act
SAP	Structural Adjustment Program
SOE	State owned Enterprise
TOT	Terms of Trade
UNCTAD	United Nations Conference on Trade and Development
WDI	World Development Indicators

Dedication

To my eternal Cheerleaders; my late dad Isaac Asiedu and Esther Ayiso: because I owe it all to you. Thank you!

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All glory to the Almighty God

Abstract

The main objective of this paper is to examine the effect of natural resource dependence on economic growth in Ghana. The paper employs EDA technique to examine the extent to which the Ghanaian economy is dependent on natural resource exports and its implication for growth as well as how the production of oil which began in 2010 has affected the economy. Examination of export composition shows a heavy dependence on natural resource export dominated by gold, cocoa and recently crude oil which makes the economy vulnerable to price volatility. Reflecting on previous argument and examination of net barter terms of trade indicates that, as a resource-based commodity exporting country, the terms of trade has been volatile over the years. Production of crude oil has been associated with increased economic growth and human capital accumulation while recent slowdown in growth is attributable to falling crude prices.

Relevance to Development Studies

Since the 1960s, natural resource endowment, particularly of developing countries have significantly affected the efficiency with which these countries utilise capital as well as the nature of their developmental trajectory in the long run. Economic growth in developing economies especially, sub-Saharan Africa has been a major concern among development economists and in development studies, given that it is positively correlated with most development indicators and welfare measures including health, education, inequality among others. This research paper explores the effect of natural resource dependence on Economic growth in Ghana. The analysis provides understanding of the extent to which the Ghanaian economy is dependent on natural resource exports and its implication of long run economic development. The study also emphasises the importance of diversification and industrialisation in the context of resource-led growth.

Chapter 1 : Introduction

1.1 Background

Natural Resource wealth provides an opportunity for economic growth and development. The rents from resources could be used for several projects including provision of infrastructure, education, health facilities among others that stimulates economic progress. Available data suggests that since the 1960s resource rich countries experience poor growth compared to their resource poor counterpart (Sachs and Warner 1995). This negative association between natural resource abundance and economic performance is what has been referred to in the resource and growth literature as 'Resource Curse'. According to Sachs and Warner (1995), the Phenomena of Resource-poor economies outperforming the resource-rich counterparts is a recurring pattern in Economic history. Examples include the experience of Netherlands versus Spain in the Seventeenth century, Japan and Switzerland versus Russia in the nineteenth and twentieth centuries (Stijns 2005). Countries that have limited natural resources such as Singapore, Japan, Hong-Kong have over the years achieved exceptional growth rates compared to resource rich countries such as Nigeria, Mexico, Venezuela and Russia. For many countries, natural resource appears to be a curse rather than a blessing with few exceptions. According to Gylfason (2001), with exception of Botswana, Malaysia, Thailand and Indonesia, none of the 65 countries that can be classified as natural resource rich economies could achieve an average investment rate more than 25% of GDP between 1970 and 1998 compared to successful industrial economies with less natural resources. Similarly, they could not achieve an average per capita GNP growth more than 4% per annum. Secondly, Malaysia, Thailand and Indonesia succeeded through diversification and industrialization. Despite their success stories among resource rich economies, Countries such as Singapore, South Korea and Taiwan that are comparatively resource poor economies in East Asia performed better in terms of economic progress compared Indonesia, Malaysia and Thailand.

Sachs and Warner (1995) show the negative relationship of high ratio of natural resource exports to GDP and Economic growth in a large cross-country study. They argue, the fact that economies rich in natural resources tend to grow slower than resource poor countries are one of the puzzling characteristics of modern economies. The negative association holds after controlling for other variables that are relevant for economic growth including government efficiency, trade policy, initial per capita income and investment rate.

In the literature, many studies have either confirmed or challenged the negative relationship between natural resource abundance and economic growth by using alternative measures of resource

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abundance and other techniques. Other studies also attempt to explain the resource curse hypothesis by examining the transmission channels through which natural resource abundance affects growth. The transmission channels identified includes the effect of natural resource abundance on human capital accumulation. In that regard, the negative effect of natural resource on growth results from inadequate expenditure on education and less schooling in resource-rich economies especially when resources are considered the most important asset of the country. Secondly, resource abundance generates rent seeking behaviours and increased corruption (effect on institutional quality). This transmission channel has been identified as the political economy of resource rents (Mavrotas et al. 2011). Some argue that abundant resources provide rents that results in destructive rent seeking competition instead of productive activities. Other transmission channels of natural resource curse include Dutch disease phenomenon and price volatility.

Ghana is endowed with a wide range of natural resources including forest, arable land, sizable deposits of gold and diamonds as well as great potential for hydro-electric power production. The country could be classified as a small resource abundant country (Osei 2001) and among the leading producers of minerals, cocoa and timber in the world. It is the second largest producer of Cocoa in the world after Ivory Coast and the second largest producer of gold in Africa. In June 2007, the country discovered crude oil in Commercial quantities and subsequently joined the group of oil producing countries, exporting the first of its oil from the Jubilee field in January 2011. The discovery of oil generated several projections and expectations given the potential benefits that could result from the use of oil revenues (Asafu-Adjaye 2010, Dagher et al. 2010). Despite the prospective windfalls, there has also been concerns about the adverse effect of oil on the Ghanaian economy given the experiences of other resource rich and oil exporting countries including Nigeria, a neighbouring country (Okpanachi and Andrews 2012). Concerns were also raised about the negative impact that the recent oil boom could have on institutions. More importantly, the government received a pool of advice regarding the wise use and management of oil revenue to prevent Ghana from a resource curse. According to Dagher et al (2010), if public spending results in the increase of productive public capital stock, then the adverse effect on competitiveness due to "Dutch disease" effect could be minimal in the medium term.

1.2 Problem Statement and Justification

Over the last two decades, Ghana's GDP has increased steadily with an average growth rate of 5% for the best part of the period despite the increasing dependence on foreign inflows and aid. GDP growth rate between 1996-2010 for instance varied around 3.7% and 7.3% per annum (WDI 2010). Although the growth performance of the economy is not extraordinary, it is indeed significant by

African standards and some have associated the quite decent performance with the economic and political liberalizations in the 1980s and 1990s (Ackah et al. 2009). As part of the long term— 25 years (1996-2020)— development objectives known as Ghana Vision 2020, the country set for itself a target of achieving an upper middle-income status by 2020. The determination of becoming an upper middle-income economy by 2020 is comparable to the optimism and self confidence that characterised post-independence period. At independence in 1957, Ghana was one of the wealthiest countries in Sub-Saharan Africa with per capita income at par with that of Malaysia, Singapore and South Korea. These countries have long achieved, with some surpassing middle-income status while Ghana lags behind. Achieving this target of per capita income by the year 2020 requires that the economy attained an average growth rate of 8% over the period. An increase in productivity in all sectors of the economy, particularly agriculture as well as producing a wider range of goods and services at internationally competitive price is required to attain the targeted rate of economic growth. Increased annual growth rate of 8% requires a significant shift in the sectoral composition of production with the share of agriculture decreasing to below 20% and that of industry increasing to 37% by the year 2020 (NDPC 1997).

The growth rate achieved over the past years and in recent times is however considered inadequate and a clear indication of the inability to achieve the desired transformation. Aryeetey et al (2001) points out that, in terms of economic growth and overall performance, the Ghanaian economy is characterized by inability to attain macroeconomic targets. For instance, the actual growth rate for the period 1996-2000 was between 4.2% and 5.0% as opposed to the expected GDP growth rate of between 7.1% and 8.3%. These significant variations between targets and actual growth also reflected growth in the sectors and non-attainment of the shift in sectoral composition of the economy. It is worth noting that the growth rate however showed a dramatic increase to about 14% in 2011 making Ghana the fastest growing economy in 2011. This rapid increase in the GDP growth coincided with commercial oil production that began at the later part of the year 2010.

The discussions on Ghana's growth and development prospects after the discovery of oil was mainly informed by the resource curse hypothesis (Asafu-Adjaye 2010, Okpanachi and Andrews 2012). According to Dessus et al (2009), although the oil sector will not become a dominant sector in the Ghanaian economy because of the relatively modest reserves, the reserves are enough to have a significant impact on the future of the non-oil economy. The large share of natural resource based products, particularly gold and cocoa in total exports, the historic growth records and the recent production of oil in commercial quantities raises concerns about drivers of growth especially the growth effect of natural resources (Raggl 2014). Given that Ghana's exports over the years

have been dominated by natural resource exports (Gold, Cocoa, timber) and recently oil, has particularly heightened the need to examine the link between natural resource dependence and the growth performance of the economy over the years, the significance of oil production and its implication for the economy. Again, one major characteristics of the studies on resource dependence and its effect on growth is the use of cross section /panel data for many countries with different resource endowment and econometric models. This paper therefore adds to the literature on country specific studies with Ghana as a case study.

1.3 Research Objectives and Questions

This research aims to explore the effect of natural resource dependence on economic growth in Ghana (1960-2016). More specifically, it examines the extent to which the Ghanaian economy is dependent on natural resource exports and explores the effect of oil on economic growth since 2010. To achieve the above objectives, the research paper seeks to answer the following main research questions; What is the effect of natural resource dependence on economic growth in Ghana?

 Sub-questions include;

- ➢ To what extent is the Ghanaian economy dependent on natural resource exports?
- ➢ How has oil production which began in 2010 affected the Country's economic growth?

1.4 Methodology and Limitations of the Study

To explore the link between natural resource dependence and Economic growth in Ghana, this research makes use of quantitative secondary data. The discussion is limited to post independent period due to data availability. Macroeconomic data ranging from the period 1960 to 2016 is collected from both international and national sources including World Bank (World Development Indicators), UNCTAD statistics, Bank of Ghana, Ghana Statistical Service. The approach adopted by the author in analysing the data collected is the use of exploratory data analysis (EDA) and descriptive statistics.

The Exploratory approach to data analysis seeks to maximise knowledge about the data. The underlying assumption of EDA approach is that, the data can effectively be used to test, develop and improve theory once one has an in-depth knowledge about the data. EDA could therefore be employed fruitfully in a bi-variate and multivariate analysis before using econometric models to test for microeconomic and macroeconomic behaviours (Hartwig and Dearing 1979). It emphasises

the use of graphs and visual display which reveals essential information about the data. EDA approach is used in this research paper because it is appropriate for addressing the research questions while allowing to generate information, ideas and new insights from the data which are relevant for further research.

The main limitation of the study is the availability of data on the relevant variables used in the analysis. Data on some variables were not available for some of the years under review. Analysis on net barter terms of trade for Ghana starts from the 1980 since data prior to this period is not available from both international and local sources. Similarly, data on human capital accumulation (Expenditure on Education as a share of total Government Expenditure) is only available from 1999 with missing data for some of the years. This however does not hinder the analysis as the available data allows to generate information and draw inferences.

Secondly, Economic growth is a very broad measure that is generally determined and affected by several factors and the interaction between these factors. This research however focuses on natural resources dependence and how it affects economic growth in Ghana. The aim therefore is not to explain economic growth in Ghana but to explore the link between natural resources dependence and economic growth in Ghana with special reference to oil production. The analysis and Information generated from the data seeks to provide valuable information for further research.

1.5 Organization of the Study

The research paper is divided into five Chapters. The introductory chapter provides a background and general overview of the research. Chapter two engages theoretical discussions and literature review on natural resource dependence and Economic growth. In chapter three, a general background of the Ghanaian Economy and long run economic performance is presented. Chapter four presents the analysis of and findings, employing exploratory data analysis and descriptive statistics. The final Chapter presents conclusion and policy implication.

Chapter 2 : Theoretical Discussions and Literature Review

2.1 Introduction

Economic growth and the question of why some countries are rich and others are poor has been a major concern in Development Economics and Economic theory. In other words, the divergent growth paths and differences in the pace of growth among countries across the globe remains a major question in the growth and development literature. In an attempt to answer this question, a group of theories acknowledge the role of natural resources. This Chapter explores the theoretical arguments and empirical evidence regarding natural resource dependence and its implication for economic growth.

To begin with, it is important to explore the meaning of the term 'natural resources'. Stiglitz (1980: 37) defines natural resources as "any commodity or factor which is provided by nature and not produced, or producible by man". He argues that this definition may not be precise because what we generally consider as natural resources, for instance crude oil can only be made useful through human activity (extraction) while others could be affected or altered by the activities of man. Hence it is useful to categorize natural resources into different forms. Stiglitz identifies four categories of natural resources namely; exhaustible natural resources, renewable natural resources, inexhaustible but nonaugmented resources and recyclable resources. However, the general distinction made in resource economics is between renewable and non-renewable natural resources. Natural resources may refer to mineral and agricultural output as well as assets or resources which are associated with forest and water. This is the definition of natural resource considered in this paper. Essentially, the empirical studies on natural resources focuses on Agriculture and Mineral resources. Different terminology has been used in referring to natural resources, from "primary products" to classification into agricultural (including forestry and fishing) and mineral resources after the 1970 oil shocks. The classification also changed subsequently by grouping natural resources into those whose production and revenue patterns tend to be concentrated (point source) and the ones whose production and revenue patterns tend to be diffused throughout the economy (Auty 1997). The point source resources include oil, minerals and plantation-based crops. Agricultural outputs such as cocoa and coffee may sometimes be considered as point source if their production and marketing tend to be concentrated like that of minerals (Mavrotas et al. 2011).

2.2 Natural Resource and Economic Growth

Economic development theory suggests that natural resource wealth and revenue should enhance economic progress. The theoretical reasoning for this argument is that capital constraints retards growth and development. The "big push" theory of economic development emphasis that poor countries require huge demand expansion that would stimulate the expansion of their market size in order for it to be profitable for entrepreneurs and firms to bear the fixed cost of industrialization. These poor countries therefore need a big push to break from poverty (Rosenstein-Rodan 1943, Murphy et al. 1989). Revenues accruing from resources such as oil, minerals etc. could serve as the push required and help overcome foreign exchange and capital constraint (Stevens 2003). Yet empirical evidence appears to suggest otherwise. Resource rich countries appear to have been subject to a phenomenon called the "resource curse". In terms of economic progress and reduction in poverty, these countries have performed worse relative to resource poor countries. Countries that are highly dependent on oil, minerals and other natural resources have performed poorly since 1980 relative to the less oil dependent countries (Hausmann and Rigobon 2003). A large body of literature exists on the diverse views regarding natural resource dependence and its implication as well as mechanism for Economic growth. Auty (2001a) groups explanation for the underperformance of natural resource abundance countries relative to resource poor countries into exogenous and internal. This paper groups the discussion into theories that focus on the link between natural resource dependence and economic growth as argued by the Structuralist vis-à-vis the Mainstream economists' view and the transmissions channels through which natural resource wealth affects growth.

2.2.1 The Structuralist View

A group of theories, hereafter dependency, base their argument of the adverse impact of natural resource dependence on growth on the terms of trade. The structuralists including Prebisch (1950) and Singer (1950) argue that, prices of Commodities that is, mineral and agricultural products follow a declining trend in the long run relative to manufactured products. This hypothesis of declining trend in commodity prices implies that countries that specialize in resources would perform poorly unless they industrialize. The theoretical basis for this argument is that the demand for Primary product in the world market is income inelastic. As world income increases, the demand for primary commodities declines. This stems from an older proposition (Engels law) that, as household income increases, the proportion of their income spent on food and other basic needs reduces. Most developing countries that specialize in the production and export of commodities

like minerals and oil are likely to fit the small open economy model due to their small size in economic terms relative to industrialized economies. They are therefore regarded as price takers in the world market for both their exports and imports (Frankel 2010). Given this assumption and the idea that the world market prices of such commodities involve a long run secular trend, the structuralist argue for diversification and industrialization rather than specialization based on comparative advantage. According to the Prebisch-Singer hypothesis and for the Structuralists, producers of primary products and natural resource exporters (the Periphery) find themselves disadvantaged in trading with the industrialized economies (the centre) due to the secular decline in their prices in the long run.

Despite the strong theoretical argument for the downward trend in commodity prices, the question is an empirical one. Terms of Trade for commodity producers had a bit of an upward trend between 1870 and World War I, 1970s and the first decade of the twenty-first century while showing a downward trend during the inter-war period and in the 1980s and 1990s (Frankel 2010). The overall statistical trend of the TOT in the long run is not unanimous. While some authors find a slight upward trend, others find a slight downward trend (Balagtas and Holt 2009, Cuddington 1992, Hadass and Williamson 2003, Reinhart and Wickham 1994). These studies are obviously sensitive to the period of the sample. Prices of oil and other primary commodities may not follow a downward trend or upward trend. However, they experience short term fluctuations. The world market prices for oil, natural gas, minerals and agricultural commodities are more volatile than most manufactured products. Others therefore argue that rather than the long-term trend, it is the volatility of world market prices of natural resource/primary products that makes them harmful for growth (Blattman et al. 2007, Poelhekke and van der Ploeg 2007).

It is worth mentioning that the Structuralist/dependency view criticises the doctrine of comparative advantage. For the dependency theorists, the idea and structure of comparative advantage compels resource abundant countries to specialise in the production of products that have less potential for learning and increased productivity and with a declining global demand (Blattman et al. 2007).

2.2.2 Mainstream Economist View

Contrary to the Structuralists argument, mainstream economist hereafter neoclassicals argue in favour of the doctrine of comparative advantage. For Neoclassical economists, the Structuralist argument that it is wrong for resource abundant countries to specialise as dictated by the doctrine of comparative advantage and the implication that international trade is unfavourable for resource and primary producers is misguided. Ignoring resource based sectors such as Agriculture or even

mining to develop and stimulate manufacturing would be inappropriate because income generated from the Agriculture sector provides market for manufacturing while providing foreign exchange. Similarly, international trade is essential for capital accumulation, attracting foreign investment and technological progress (Findlay et al. 1999). Maximum growth can be achieved by ensuring that internal and external markets for goods and capital are liberalised to ensure efficient allocation of capital and resources The Neoclassicals argue that depending on their natural resource and primary exports as the source of foreign exchange is the only way that countries at the initial stage of their development process could purchase the necessary imports (Auty 2001a). The theory of comparative advantage is therefore the basis for neoclassical argument. Trade with its dynamic effects will eventually provide the opportunity for resource abundant countries to move from resource-based production through labour-intensive, capital-intensive manufactures and eventually to innovative and sophisticated product, thereby ascending the ladder of comparative advantage (Findlay et al. 1999).

The failure of resource abundant countries to grow fast according to the neoclassicals is as a result of poor policies and government interference in the form of protecting industrial sector, moving resources away from sectors where the country's comparative advantage (based on natural resources) lies. Government interventions interferes with the market mechanism and therefore results in more inefficiencies instead of avoiding them. Hence the underperformance of the resource abundance countries is not due to external factors as implied by the Structuralist but internal factors including bad policies.

In sum, it is obvious that these group of theorists differ in their view of the link between natural resource dependence and economic growth and how the former affects the latter. Yet, both arguments point to the external (terms of trade) and internal factors (lack of liberalisation, policy failures) that affects the growth performance of resource abundant economies.

In the empirical literature, resource rich countries appear to have performed poorly compared to relatively resource poor counterparts. The phenomena seem to have played out particularly in the 1970s through the 1990s. Again, the poor performance appears robust regardless of the classification of resources that is, Agriculture or minerals. Yet resource abundant economies have not always been characterised by poor economic performance. For instance, most resource abundant economies and commodity exporters performed extremely well between 1870 and 1914. The question is, what accounts for the differences in growth performance observed between countries and historical periods.

Findley et al (1999) provides evidence of the performance of resource abundant countries between 1870 and 1914. The period referred to as the "golden age" of economic development was characterised by increased international trade, investment and commodity market integration that had never happened before in world history. They argue that, the increased demand for natural resource-based commodities by the industrialised countries in Europe, which translated into expansion of international trade in both volumes and value led to high growth in resource abundant countries. In other words, resource abundant countries benefited from the first era of globalisation, a period when factor endowment and comparative advantage prescribed that they exported resource based and primary commodities in exchange for manufactures from the industrialised economies. They categorise resource abundant economies into 'regions of recent settlement' (Australia, United States, Canada, Argentina) and 'tropical countries' which are further grouped into Peasant Agriculture (Gold Coast, Siam, Burma), Plantation Agriculture (Brazil), Mixture of Peasant and Plantation (Costa Rica, Malaya, Ceylon, Colombia) and Mineral producers (South Africa, Bolivia, Chile). The distinction between Region of recent settlement, the 'New World' where European migrant settled and became majority, and the Tropics allows to distinguish between different experiences.

In the region of recent settlement, the abundant natural resources generated linkages to manufacturing. In Canada where the staples theory of growth was first developed, diverse staples resulted in the creation of linkages of different forms. Wheat production in particular led to the extension of railways westward and stimulated manufactures of agriculture inputs, processing, warehousing, construction and public amenities. Raw materials for paper mills, saw mills and flour mills were supplied by staple production at the West while the generated incomes were spent on manufactures from the East. This group of resource abundant countries were all in the process of industrialisation by the beginning of the first world war (Findlay et al. 1999). The export activities that began with primary exports provided a catalyst that extended beyond the resource-intensive sector to other sectors via linkages of different forms.

On the other hand, in the tropics, natural resource abundance did not create linkages to manufacturing as it did in the regions of recent settlement. The experience of countries in the tropics in terms of structural transformation and economic progress appear mixed and less uniform. However, a notable theme that emerges from the different experiences is their failure to industrialise except for Brazil. Gold Coast for instance, was a peasant economy that managed to develop cocoa as an export crop. The volumes of cocoa exports increased significantly with increased per capita income driven by cocoa and gold to some extent. Yet cocoa production in Gold Coast created few linkages. Generally, exports of tropical crops did not generate stronger and the different forms of

linkages required for industrialisation. The experience of mineral exporters regarding industrialisation also differed with Chile being the only country that had made significant progress towards industrialisation before world war I. Bolivia was a total failure while in South Africa, the relationship between mineral sector and manufacturing advanced after the war (Findlay et al. 1999).

Far from all the resource abundant countries in the tropics managed to spread growth that had begun in the commodity sector to the other sectors. The staple sector ended up becoming an enclave with little or no connection with the rest of the economy. The trade collapse during inter-war period as well as the great depression therefore resulted in the growth collapse of resource based commodity exporting countries. It could therefore be argued that, the Prebisch-Singer hypothesis and the doubt about prices of commodity prices was mostly driven by the collapse of commodity prices experienced during the inter-war periods as well as the great depression of the 1930s. Hence, the advocacy for inward oriented growth strategies based on import-substitution manufacturers to develop domestic industrial base.

Excessive dependence on natural resource based or a staple product could be harmful unless the economy adjusts and changes to the production of new staples. Auty (2001b) describes the adverse impact of commodity dependence as staple trap. The staple trap is used to describe an economy that cannot switch to new products. In other words, an economy that is dependent on one or few commodity exports with declining shares in GDP. According to Auty (2001b), such economies are particularly vulnerable to external shocks and growth collapse. Resource rich countries tend to depend on the export of primary product for a longer time compared to resource poor countries. This therefore postpones the emergence of labour-intensive stage of industrialisation and the associated labour-intensive manufactured exports due to political economy reasons, including rent seeking. Consequently, economic diversification into other staples or primary products may appear difficult especially for a small resource abundant economy whose resources endowment tend to be directed toward one or two commodities. The staple trap model predicts that without the presence of developmental autonomous benevolent state or a consensual democracy, it becomes extremely difficult for a resource abundant economy to manage the difficulties posed by longer dependence on primary products. The economy may shift towards inward looking trade policy and over dependence on primary commodities with a declining competitiveness.

The growth performance of two of the tropical countries in East Asia, Siam (Thailand) and Malaya (Malaysia) was quite impressive between 1960 and early 1990s. They expanded their traditional exports while diversifying into new crops. Both countries also embarked on massive industrialisation and exports of labour-intensive manufactures (Findlay et al. 1999). Ceylon (Sri Lanka) and Burma (Myanmar) on the other hand stagnated in terms of growth due to policy failure, ethnic and

political conflict. Gold Coast (now Ghana) also missed out due to inappropriate policy of cocoa marketing board which nearly collapsed cocoa exports. This brings to bear the significance of policy regime.

The poor performance of resource rich economics compared to the relatively resource poor counterparts began to be highlighted in the last quarter of the twentieth century. This to a greater extent is attributable to the remarkable performance of some relatively resource poor countries in East Asia such as South Korea, whose per capita income caught up with the advanced countries compared to the decline in that of the resource rich countries in Latin American and Sub-Saharan Africa. It therefore appears that the resource curse played a role in the different growth trajectory. However, from the early 2000s, growth among developing countries in general has improved. There has been an improvement in the relative performance of resource-rich developing countries. The average per capita growth rates have increased and equalled that of relatively resource poor countries in contrast to being one percent lower during the 1990s (Venables 2016). Then again, the early 2000s coincides with a period of oil boom and increased commodity prices as well as increased resource trade with China. It could therefore be argued that this performance remains relatively modest.

Again, there has been a phenomenon of early deindustrialisation among low and middle-income economies since 1990 approximately. These countries appear to be deindustrialising at an earlier stage in their development process and much lower income levels compared to the early industrialisers. With exception of few countries in Asia, developing economies have experienced declining shares in manufacturing employment as well as real value added. Through the adoption of ISI strategies and protective policies, most of these countries in Latin America and Sub-Saharan Africa managed to develop a modest manufacturing industry in the 1950s and 1960s but have since then shrank significantly. Without passing through the appropriate industrialisation experience, developing countries are becoming service economies and this is what Rodrik (2016) refers to as "premature deindustrialisation".

It is generally accepted that due to labour saving technological progress and increased demand for service at higher income levels, the share of manufacturing employment would decline in matured industrialised economies. Rodrik (2016) shows that middle income and low-income economies have experienced premature deindustrialisation compared to developed economies. The reasons for this development is trade and globalisation. Countries without a strong comparative advantage in manufacturing ended up becoming net importers of manufactures after opening up for trade, thus reversing the initial process of import substitution. This is consistent with patterns observed in Latin America and Sub-Saharan Africa and also helps in explaining why this trend is not observed

among Asian economies with comparative advantage in manufactures. Globalisation also resulted in "importation" of deindustrialisation from developed economies by the developing countries (Rodrik 2016). Perhaps the decline in manufacturing among these countries may be due to commodity price booms and dependence on commodity exports among these countries.

2.3 Presence of a Resource Curse: Transmission Channels

The empirical literature on resource abundance and its implication for resource rich countries generally revolves around the resource curse hypothesis and the channels through which the curse plays out. These studies suggest that natural resource abundant countries or at least the ones that are heavily dependent on natural exports have performed poorly, particularly the point-sourced economies. This view has received support from several researchers (Auty 1997, Auty 2001a, Sachs and Warner 2001, Sachs and Warner 1995). Sachs and Warner (1995) found a negative relationship between natural resource abundance and economic growth between the period 1970-1990. They show that a higher ratio of primary export to GDP in 1970 is associated with lower growth in the twenty subsequent years. Many studies after Sachs and Warner (1995) have either confirmed or challenged the negative relationship between natural resource abundance and economic growth by using alternative measures of resource abundance and different techniques.

A major criticism of the empirical studies supporting the resource curse hypothesis is their use of primary export intensity as a measure of resource abundance. According to Stijns (2005), one major limitations of the papers by Sachs and Warner and subsequent papers on the resource curse hypothesis is that resource abundance is measured by primary exports intensity. Brunnschweiler and Bulte (2008) argues that, to examine the effect of natural resources on growth, it is important to differentiate between resource abundance which is a stock measure and resource dependence, which is the extent to which an economy do or do not have alternative source of revenue except for the extraction of resources at a point in time. The concern raised is that, resource abundance and resource dependence are not equivalent despite their possible correlation and so assuming a strong positive correlation is not obvious. For instance, Germany and Australia have relatively less primary exports despite being resource-rich countries (Brunnschweiler 2008). Some argue that resource exports may be endogenous in so many ways. A country may have higher share of natural resource (for instance minerals) in total exports not necessarily because the country is rich in mineral endowment compared with other countries but because the country lacks the ability to export manufactures. In other words, as the basic trade theory predicts, the country may not have an absolute advantage in mineral production but may show a higher share of minerals in exports because it has a comparative advantage in mineral production relative to manufactures (Frankel 2010).

Brunnschweiler and Bulte (2008) find a positive relationship between resource abundance and growth using resource abundance (stock measure) instead of resource dependence (primary products export) as explanatory variable. Contrary to the resource curse hypothesis, the results show a significant positive effect of resource abundance on both growth and institutional quality. Clearly there is less consensus on the measurement of resource abundance/dependence. Although measurement of natural resource abundance/dependence used in these studies as well as their empirical validity is beyond the scope of this paper, the fact remains that natural resource-abundant countries or at least the ones that are highly dependent on resource exports have performed poorly relative to their resource-poor counterparts.

However, Resource abundance or boom does not necessarily mean the country is doomed. Countries such as Botswana and Norway are a representation of how natural resources can actually be a blessing rather than a curse. These countries have managed to "escape the curse" and have performed so well over the years. Although Botswana and Congo are both endowed with diamonds, the performance of Botswana is rather exceptional in the African continent, being the best in terms of rapid economic growth, democracy and stability. Congo on the other hands is the worst in every regard. The question therefore is, why does resource wealth results in growth successes in countries such as Botswana while leading to growth collapse of others such as Congo? To answer this question, some group of theories and studies attempt to explain the "channels' through which natural resource abundance affects growth. The 'Dutch disease', rent seeking behaviour, institutional impact and price volatility among many others have been identified as the means through which the resource abundance or boom translates into growth enhancement or collapse (Gylfason 2001, Papyrakis and Gerlagh 2004, Corden 1984, Okpanachi and Andrews 2012). The following sub-sections focus on some of these transmission channels identified.

2.3.1 Dutch Disease channel

Dutch disease is the phenomena named after the appreciation of the Dutch real exchange rate following the discoveries of natural gas in the 1960s and its negative impact on Dutch manufacturing sector. It is the most common impact associated with natural resource boom. Instead of dependence on natural resource-based exports, the Dutch disease is associated with a resource boom. It could be a windfall discovery of new resource or a sudden increase in the price of a resource commodity, increased inflow of aid or remittances. Either way, resource boom result in the crowding out of the economy's leading sector (Murshed 2004). The increase in exports from the resource sector associated with resource boom leads to real exchange rate appreciation which causes harm to export as they become relatively expensive. In other words, the resulting current account surplus

leads to appreciation of domestic currency under flexible exchange rate regime and therefore the existing tradable exports become uncompetitive in the world market. In effect, domestic production is shifted from tradables to non-tradables (Murshed 2004). Corden (1984) outlines the effect as "spending effect" and "resource movement effect". According to (Sachs and Warner 2001), due to higher relative price of the tradable exports, these countries miss the opportunity to benefit from export-led growth that many resource-poor countries have enjoyed. In the long run, a country may not be able to restore competitiveness even after the exchange rate normalised after the boom.

However, resource boom does not automatically lead to contraction of the traded sector and expansion of the non-traded sector. It is argued that resource boom effect of crowding out the leading sector (either Manufacturing or Agriculture) as predicted by the Dutch disease theory depends on the nature of the natural resource economy and resource production structure (i.e diffused or point linkages). According to Murshed (2001), under the diffused linkage condition of high propensity to consume domestically produced traded good, the traded good sector could expand. Murshed (2001) suggests devaluation which is the opposite of a resource boom as well as taxing non-traded good consumption as a policy initiative to mitigate the adverse impact of resource boom. He noted however that the policy is more likely to work for an economy with a diffused resource production structure.

2.3.2 Volatility Channel

Resource dependent economies are exposed to volatility especially commodity price and revenue volatility that adversely affects economic growth. Volatility has been presented as a viable explanation for the resource curse. Natural resource exports such as oil, mineral, Agriculture products and commodities in general are characterised by price fluctuations over short periods of time. This volatility could be potentially problematic as the resulting revenue volatility presents governments with fiscal challenges. It makes it difficult for governments to implement prudent fiscal policies (Stevens 2003). There are of course a lot of empirical support for the existence of such volatility. Blattman et al (2007) used panel data of 35 countries to estimate the effect of terms of trade volatility on the performance of countries over the period 1870 to 1939. Their findings show that volatility explains a considerable degree of the divergence in income and the underperformance of commodity-dependent countries (periphery) relative to the industrialised countries (Core). They identify foreign investment as a channel for the adverse impact of volatility. Van der Ploeg and Poelhekke (2009) decomposes the effect of resource dependence on economic growth into direct and indirect. The results suggest that natural resource dependence negatively affect growth via the volatility channel. Frankel (2010) argues that, volatility in itself may not be necessarily harmful to

long run economic growth as some historical examples suggest that periods of high volatility can be accompanied by rapid growth. However, a diversified economy may be better off compared to one that is specialized in the production of few commodities.

2.3.3 The Relevance of Productive Investment

Gylfason (2007) outlines the six key factors of recent growth theory. First, savings and investment for real capital accumulation including physical infrastructure; machinery, equipment, factories, bridges and roads. Second, investment in training, education, social security and provision of health care for the accumulation of human capital. Third, international trade of goods, services and capital to accumulate foreign capital. Fourth, the existence of democracy, honesty and freedom; limited corruption for the building of social capital, enhance social cohesion and help keep together the economic system. Fifth, building of financial capital that depends on economic stability and low inflation. Finally, the existence of manufacturing and service sectors that allows for diversification of the economy away from over dependence on resource based and low-skilled intensive primary production.

There has been concerns about windfall revenues from natural resource exports being consumed rather than being invested. Stevens (2003) points out that, the permanent income hypothesis suggests that windfall revenues would most likely be saved/invested rather than consumed. Venables (2016) argues that in low-income resource rich economies, savings has generally been low and presents evidence of negative correlation between resource rents and savings among these countries. Gylfason (2001) presents evidence that resource rich countries invest less share of national income in education. Hence, less attention is paid to human capital accumulation which is crowded out.

2.3.4 Rent Seeking

Political economy of resource rent has been identified as one of the transmission channels of the resource curse. Natural resource abundance generates rent seeking behaviour in different forms. For instance, governments may be tempted to offer tariff protection to domestic producers. Producers in resource-rich economies are susceptible to rent-seeking behaviours that are socially destructive (Gylfason 2001). Others have argued that resource provides rents which results in rent-seeking competition instead of productive activities. It may also promote corruption in business and government that distorts efficient allocation of resource. In some cases, competition over natural resource rents results in civil wars (Leite and Weidmann 1999, Gylfason and Zoega 2006, Mavrotas et al. 2011, Sala-i-Martin and Subramanian 2003, Collier and Hoeffler 2005). There is a

general consensus that rent-seeking behaviour generate undesirable outcome for the economy. Auty and Gelb (2001) posit that the type of political state presents a link between resource endowment and economic outcomes. Resource poor (low rent) economies generally creates developmental political states where governments embark on economic policies that maximises social welfare. They therefore embark on early industrialisation, following competitive industrialisation model that leads to sustained and rapid growth. In contrast, the high rent and contest for rent in the resource rich economies engender factional and predatory (non-developmental) state which tends to distribute rents indirectly and hence distorts the economy (Auty and Gelb 2001). According to Auty (2006), the distribution of rent tends to lock the economy into a staple trap with high risk of growth collapse. Closely linked to the rent argument is the significant of quality institutions. Auty argues that rent grabbing deviates attention from long-term developmental goals towards the maximization of rent creation and capture.

2.3.5 Institutions

Another stand is taken by a group of theories that emphasise the significance of quality institutions. Acemoglu et al (2005) argue that the quality of economic and political institutions (including property rights and rule of law) are required for long run economic growth while Stevens (2003) argues that the poor performance of resource abundant economies is the result of misguided policies that are a product of poor institutions. Again, resource booms tend to reinforce rent grabbing, particularly in the context of bad institutions, thereby keeping in place bad policies that are detrimental to growth (Van der Ploeg 2006). Mehlum et al (2006) provide evidence that resource dependence adversely affects growth via bad institutions (grabber friendly) but may boost growth in countries with quality institutions (producer friendly).

The question then is what determines good institution? Acemoglu et al (2001) argue it depends on whether or not Europeans settled on a colony while Mavrotas et al (2011) claim that rather than geography, culture or colonial heritage, institutions are determined by natural resource dependence (either point sourced or diffused). In line with Mavrotas et al (2001), Gylfason and Zoega (2006) argue that the dependence on natural resource affects current institutions and several macroeconomic outcomes. The conclusion is that institutions are of utmost importance. Some findings from different studies suggest that the point-sourced resource economies are particularly predisposed to weak institutions which in turn hampers economic growth (Isham et al. 2005, Mavrotas et al. 2011). The findings of Murshed (2004) suggests that, endowment of point-sourced resources impedes democracy and institutional development which in turn retards growth. The type of endowment may not entirely explain the emergence of institutions and democracy as Murshed (2004) points

out but the argument is that, point source resources such as minerals/coffee-cocoa economies are the worst with regards to the effect of endowment on institutions and democracy.

In sum, the mechanism through which natural resource wealth affect growth differs depending on the hypothesis and the reasons and so are the remedy for the curse if there is one. The theoretical literature providing explanation of the transmission channels follow two trajectories; the ones that stresses on resource misallocation associated with resource wealth or temporary boom which distorts relative prices and exchange rate. Emphasis is placed on non-traded goods and intersectoral linkages (Sachs and Warner 1999, Murshed 2001). This causes resource abundant economies to miss out on export-led growth. The second presents political economy considerations with emphasis on linkages through rent seeking behaviour and strategic behaviour of major economic player (Auty and Gelb 2001), the nurturing of non-development institutions (Acemoglu et al. 2001, Acemoglu et al. 2005). Thus, from political economy perspective, the adverse effect of natural resource rent only arises when it results in rent seeking competition, corruption and conflict that destruct normal productive investment and hence growth. The conclusion therefore is that resource wealth does not necessarily lead to poor political or economic development through any of the channels identified. It may be viewed as double-edged sword ((Frankel 2010) with both benefits and risks.

Chapter 3 : Background of the Ghanaian Economy

3.1 Introduction

Ghana has tried different approaches towards achieving acceptable growth rate and development since independence in 1957. In the 1960s a push for rapid industrialization began, using several control measures and state intervention. These interventions continued through the 1970s, but the main development goals were less apparent (Aryeetey et al. 2000). By the beginning of 1983, the economy experienced severe deterioration in economic performance due to inappropriate macro-economic policies, institutional development policies coupled with several external shocks. During the mid-1980s, the country embarked on a comprehensive reform programme based on liberalized policy regime. Ultimately, the return to constitutional rule and multi-party democracy in the early 1990s marked the dawn of a stable political and economic process. This chapter provides an overview of the Ghanaian economy from independence till present. The discussion begins with an overview of growth performance, focusing on growth records. The structure and changing structure of the economy as well as development plan and sectoral policies are discussed in the subsequent sections.

3.2 An overview of Growth Performance

The growth record of Ghana has been uneven and has fluctuated since the country's independence, especially, when one compares the period before reforms (1960-1983) to the post-reform period (the period after 1984). The economy experienced a reasonably high GDP growth of about 8% on average between the 1950s and mid-1960s (World Bank, 2012). The excess reserves inherited from the colonial administration and import substitution industrialization policy that led to the establishment of industries in the country contributed to the relatively high GDP growth experienced in the country (Bonga-Bonga and Ahiakpor 2016). The Economy however began to experience turbulence and a slowdown in economic growth from 1964. Growth was unstable and highly volatile for the most part of the period after 1964 and only began to stabilize after 1984. The economy experienced negative growth rate of real GDP during the periods 1966, 1972, 1975-1976, 1979, and 1983 (see fig 3-1). The negative growth of real GDP over this period coincides with the period when the country experienced continuous political instability (coup d'état), change of government and policy reversals. The years 1982 and 1983 particularly were marked with several attempted coups, a major drought and low levels of investment. Figure 3.1 shows the trends in real GDP growth from 1960 to 2015. During the pre-reform period, the growth rate of GDP was the highest

in 1970 under Prime Minister K.A Busia, the leader of the second Republic constitutional administration. The economy recorded an unprecedented growth rate of 9.7%. The economy could not sustain this highest record of growth in the subsequent years following the Coup d'état in February 1972 led by General Acheampong. For the most part of the years from 1972 until the reforms in the mid-1980s, growth performance of the economy remained very poor and negative with the lowest growth rate of -12.4% in 1975.

Figure 3-1 *Trends in Real GDP Growth Rates (1961-2016)*
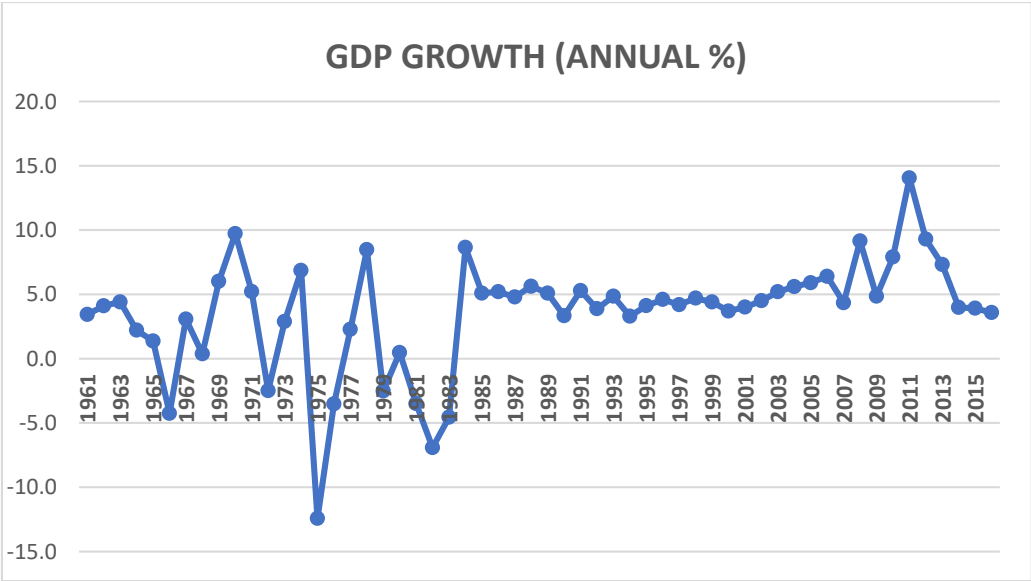
Source: Chart Created by Author Using Data from World Bank (World Development Indicators)

Prior to 1985, economic growth in Ghana remained very volatile, alternating between positive and negative at irregular intervals as observed from figure 3-1. It is worth noting that growth rate was even more volatile during pre-reform period (1960-1983) as depicted on figure 3.1. The average GDP growth rate in the period prior to the Economic Recovery program in 1983 was 0.9%. The highly volatile growth rate in real GDP observed over the period may probably be due to the political instability, poor external relations, mismanagement and corruption that characterized the military regime of General Acheampong. The growth rate was relatively stable from the period 1986 following the adoption of Structural Adjustment Programme that aimed at liberalizing the economy and stimulating investment. The economy recorded an average growth rate of 5% between 1986 to 2008. Between the period 2008 and 2012, real GDP grew at an average rate of 8%. In recent times, the economy recorded the highest growth of real GDP in 2011. Real GDP growth of 14% recorded in the year 2011 is the highest in the history of the Economy. This growth rate is

mainly attributed to the exploitation of oil in commercial quantities that began at the latter part of the year 2010.

3.3 Structure of the Economy

The economy of Ghana consists of the Agriculture Sector, Industry and Service with production centred around these three main sectors. Production in Ghana has been dominated by the agricultural sector since independence and it remained the sector with the highest share in GDP until recent times when the sector has been overtaken by the Service. The service sector has the greatest share of GDP (57% in 2016) in Ghana, followed by the industrial sector which contributes about 24% of GDP (see fig. 3.2 below).

Agriculture, formerly the dominant sector of the economy is currently the sector with the lowest share in GDP (19%) in 2016. Agriculture which consists of "Crops", "Cocoa", "livestock", "fishing" "forestry and logging" accounted for more than half of GDP in the 1960s. The sector was also an important source of foreign exchange and revenue for the government with foreign exchange largely driven by cocoa exports. Food exports which was mainly made up of cocoa was the major source of foreign exchange for the economy prior to the year 2011, constituting over 50% of total merchandize exports (WDI 2010). However, the sector has declined over the years as there is a shift in dominance from Agriculture in favour of service (see Figure 3.3). Trends in recent time suggests that not only has the share of Agriculture in GDP declined but also the overall performance of the sector.

Figure 3-2 *Sectoral Share in GDP (2016)*
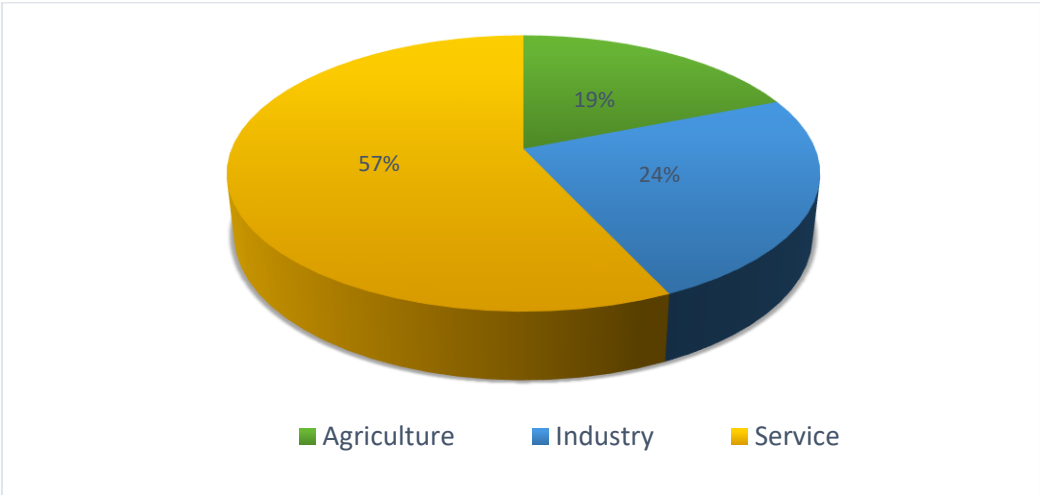
Source: Chart Created by Author Using Data from GSS

Figure 3-3 *Sectoral Contribution to real GDP period average (%) (1970-2016)*

	1970-1975	1976-1982	1983-1986	1987-1990	1991-1995	1996-2000	2001-2005	2006-2010	2011-2016
■ Service	29	32	36	40	44	33	48.6	49.6	52
■ Industry	19	17	12	14	14	28	20.8	20	26
■ Agriculture	52	51	52	46	42	40	30.6	30	22

■ Agriculture ■ Industry ■ Service
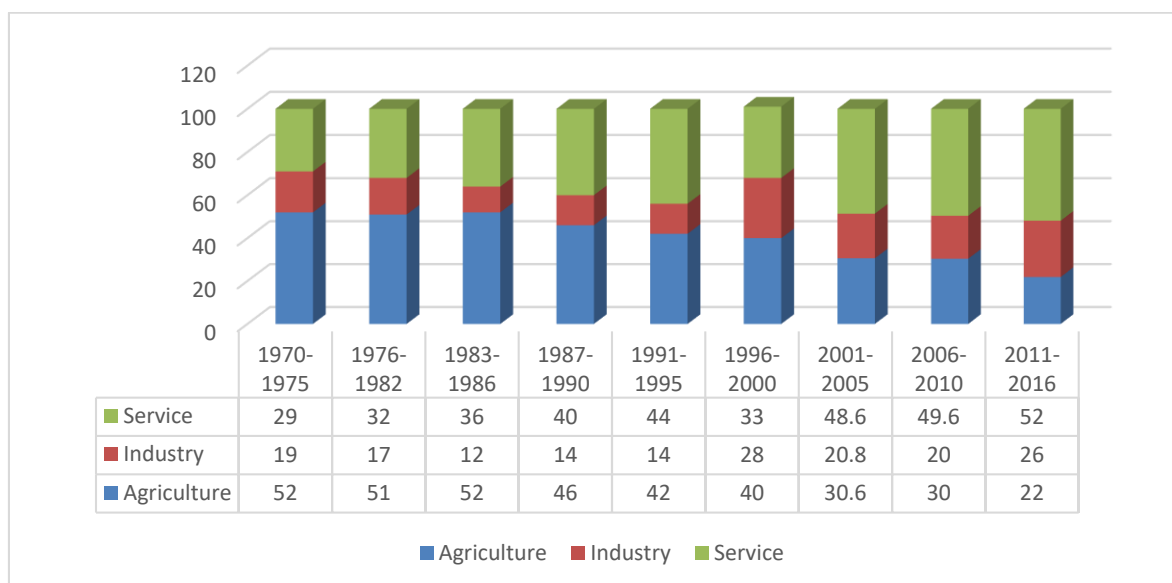
Source: Chart Created by Author Using Data from GSS and (Aryeetey and Kanbur 2005)

The service Sector on the other hand has increased over the years in terms of its share in GDP of over 50% compared to about 30% in the 1970s. The sector is made up of "Trade, Repair of Vehicles, Household Goods", "Hotels and Restaurants", "Transport and Storage", "Information and communication", "Financial and Insurance Activities", "Real Estate, Professional, Administrative & Support Service activities", "Public Administration & Defence; Social Security", "Education" "Health and Social Work". Growth in the sector in recent times has mostly been driven by Financial and Insurance activities as well as telecommunication.

The share of industrial sector in GDP has not changed much over the years. Industry in Ghana is made of five main sub-sectors including "Mining and Quarrying", "Manufacturing", "Electricity", "Water and Sewerage", "Construction". The push for industrialization between 1960s and 1970s saw increased investment which led to an increase in the share of Manufacturing in GDP. Productivity in the manufacturing sector was not sustained as the performance of the sector was not a result of an actual structural change but a reflection of the bias in government policy at the time. The share of manufacturing seems to remain the same despite improvements during the early years of reforms as the sector continues to experience slow growth. In recent times, increase in the share of industrial sector is mainly attributed to performance of the mining and quarrying sector of which crude oil has become a dominant sub-sector.

Although it could hardly be described as structural change, it is worth mentioning that Structural change in Ghana has not evolved with declining Agriculture and rising industrialization but rather, a decline in Agriculture and a rise in Services.

3.4 Development Plan and Sectoral Policies

Governments at every point in time since independence have pursued several policies and programmes geared towards accelerating economic growth, poverty reduction and improving the standard of living of the people of Ghana. In accordance with the constitutional injunction that stipulates that government pursues policies that helps create a free and just society, several policies and programmes have been pursued within a framework of development plan. Such development plans include "Ghana Vision 2020 (1996-2020): The First Step (1996-2000); the First Medium-Term Plan (1997-2000); Ghana Poverty Reduction Strategy (GPRSI) 2003-2005, the Growth and Poverty Reduction Strategy (GPRSII) 2006-2009, the Ghana Shared Growth and Development Agenda (GSGDAI) 2010-2013, Ghana Shared Growth and Development Agenda (GSGDAII) 2014-2017" (NDPC 2010).

The Ghana Vision 2020 aimed at raising Ghana to a middle-income economy by the year 2020. The medium-term plan under the vision 2020 emphasized growth acceleration, rural and urban development as well as infrastructure development.

Ghana Poverty Reduction Strategy (GPRSI) and the Growth and Poverty Reduction Strategy (GPRSII) which followed the Vision 2020 focused on restoring macroeconomic stability and poverty reduction. GPRSI revolved around the themes of "Production and Gainful Employment", "Human Resource Development and Basic Services", "Special Programmes for the Poor and Vulnerable", and "Governance" while focusing on areas such as infrastructure, Rural Development based on Modernized Agriculture, Good Governance, Private Sector Development for immediate action. Adoption of the GPRSI was a requirement under the Heavily Indebted Poor Countries (HIPC) debt relief initiative of the World Bank and IMF in 2002. GPRSII also emphasised sustained poverty reduction based on economic growth to achieve a middle-income status within the stipulated period (NDPC 2010).

Ghana Shared Growth and Development Agenda (GSGDA) was motivated by the fact that Ghana was on a verge of becoming an oil producing country. The government recognized how critical this transition was in terms of development given the opportunities and risks that oil production presents. Managing petroleum revenue judiciously is not enough to change the development status

of the economy. The recognition that total transformation requires economic and social modernisation is the basis for the shared growth agenda. GSGDA sought to address the challenges and drawbacks of the previous decade such as macroeconomic and structural challenges including over-reliance on primary commodity production with little linkages to other sectors, reliance on rain-fed agriculture and limited use of technology and innovation in the productive sectors. In this regard GSGDA aimed at ensuring that revenues from oil and gas are directed towards raising the growth potentials of other sectors. The focus was on accelerating agriculture modernization, human development, infrastructure, ICT and energy.

In sum, these development plan and policy frameworks generally aim at accelerating growth, achieving macroeconomic stability, provision of infrastructure and basic amenities, transparent and accountable governance among others while seeking to address the drawbacks and challenges of the previous ones. Within these development policy frameworks, special policy and programmes are geared towards the productive sectors of the economy to ensure that the growth poles of the economy are reinforced.

3.4.1 Agricultural Sector Policies

Agriculture has remained the main economic activity in Ghana during the post independent period and so the sector received much attention from all political leaders and heads of states. All successive heads of states after independence aimed at transforming the Agricultural sector into a source of inputs for the industrial sector and to also promote self-sustaining growth. This however did not yield positive results as the Agriculture sector experienced decline in growth rate of -0.5% between 1970 and 1983 (Aryeetey and Fenny 2017). The pre-reform period (1960-1983) was characterized by political instability and inconsistent economic policies that had great consequence in the agricultural sector.

In 1970, economic policies by the civilian government emphasized on reducing state control of agricultural enterprises that it inherited and to restore the country to market economy that existed at the time of independence (Nyanteng and Seini 2000). Policies for economic development focused on reliance on the private sector and market-oriented system instead of the dominance of the state in the agriculture and Industry. State-owned enterprises as well as Agricultural equipment and machinery were privatized. Efforts were made to reduce the state's involvement in Agriculture while small and medium scale agriculture development was emphasized. Agricultural policies in the 1970 was characterized by the formation of Single Product Development Board to provide incentives and guidance for production of commodities as well as raw materials that were essential for the newly established factories (Nyanteng and Seini 2000).

Following the coup d'état in 1972, the experiments and measures adopted by the civilian government were abandoned and the state regained control over the Agriculture sector and production. The experiment of open market policies was short lived, import and price controls were restored while a monopolized system of cocoa purchasing was again introduced in 1977. The focus at the time was on food crop production to achieve self-sufficiency. Programme such as Operation Feed Yourself (OFY) and Operation Feed Your Industries (OFYI) which emphasized the production of food crops and raw materials were established. The programme aimed at expanding small farm production with little interest in export products. This however resulted in the decline of cocoa production with output falling by about 41% in 1978 (Nyanteng and Seini 2000). The policies from 1970s seemed to yield positive results until after 1975 when poor macroeconomic and fiscal policies made it unfavourable for agricultural development. The period was characterized by high inflation combined with trade deficit and overvalued currency. The controlled and low prices for cocoa and other crops also discouraged production and encouraged smuggling to neighbouring countries for higher prices (Aryeetey and Fenny 2017). Consequently, the growth in the Agriculture sector began to decline.

The next wave of Agricultural policies began during the launch of a set of reforms under the Economic Recovery Programme (ERP) in 1983. The agricultural sector received great attention under ERP mostly because it was the largest sector of the economy. The increase in producer prices, particularly for cocoa was a major feature of Agricultural policy during the period. The main policy objective for the sector among other things was to stimulate a rise in foreign exchange earnings from the sector by providing incentives to cocoa farmers, given that cocoa has been the major source of foreign exchange in the Agricultural sector. Agricultural policies in the first phase of ERP included the Agricultural Sector Rehabilitation Project (ASRP) which aimed at promoting the achievement of policy objective in the sector. Policy Planning, Monitoring and Evaluation Department (PPMED) of the Ministry of Agriculture was also established as part of institutional reforms to ensure that agricultural projects are carried out. During the second and third phase of reforms (1987-1990) which consisted of Structural Adjustment Programme (SAP), policies in the sector emphasized on increased productivity especially in the cocoa sector. With funding from the World Bank, the Cocoa Sector Rehabilitation Programme was executed. The size of Cocoa Board was reduced, and higher share of world price of Cocoa was passed on to producers. As part of liberalization, the procurement of agricultural inputs was privatized, subsidies for inputs and guaranteed minimum prices for maize and rice were all removed to ensure competition and efficiency marketing of agricultural inputs (Nyanteng and Seini 2000).

Since 1992, democratically elected governments have sought to achieve higher growth rate and for that matter have introduced several programs to increase growth in the Agricultural sector. The Medium-Term Agricultural Development Programme in 1991 consist of specific programme to deal with credit access, extension services and research. The Accelerate Agricultural Growth Development Strategy (AAGDS) since 2000 aimed at enhancing agro-technology, rural infrastructure, financial access and human resource development (Aryeetey and Fenny 2017).

Despite the different policies and agricultural-led initiatives established by different governments, growth in the agricultural sector has remained low. However, the sector continues to drive economic policies due to the country's comparative advantage in Agriculture.

3.4.2 Industrial Sector Policies and Development

Rapid industrialization was seen as the key to development following independence and so Ghana, like many other African countries adopted growth-oriented development strategies with much emphasis on industrial development. Aryeeteh and Harrigan (2000) write;

> *The fascination with growth through industrialization would explain why, under Ghana's Seven-Year Development Plan (1963/64-1969/70), as much as 20% of total investment budget was devoted to the development of industry and trade. That this fascination could not be linked to any one political group is demonstrated by the fact that, under the Stabilization Plan (1967-69) following President Nkrumah's overthrow in 1996, this proportion rose to 56.8% and then fell marginally to 54.8% under the One-Year Plan (1970/71). The importance African governments attached to industrial development throughout the 1960s was made clear by their public investment policies (Aryeetey and Harrigan 2000: 6)*

The adoption and implementation of state-led import-substitution industrialization in the 1960s led to huge expansion in manufacturing capacity. Despite attempts of liberalization between 1966 and 1970 which resulted in the decline of state-owned enterprises, the state-led ISI strategy was reintroduced in 1970. Propelled by the principle of self-reliance, the objective was to expand manufacturing capacity through ISI. Similarly, industrial policy statements also emphasized on expansion of manufacturing exports since export diversification was considered essential to overcome foreign exchange constraint. Primary export at the time was considered incapable of generating the required foreign exchange to spur rapid economic growth (Aryeetey and Harrigan 2000).

In the implementation of ISI strategy, foreign exchange control through the use of tariff and non-tariff measures were undertaken to protect the domestic industries. At the same time, the country relied on imports for the required machinery, raw materials and other inputs for the industries while these inputs were to be funded by export revenue. Therefore, expansion of the manufacturing

sector could take place within the framework of ISI strategy if measures were put in place to curb the anti-export bias that characterized the ISI strategy. This however, could not be achieved in the 1970s given inconsistency between policy objective and implementation. As expected, the initial expansion of manufacturing share in national output reversed during the 1970s. The economy remained dependent on cocoa and gold exports for which incentives were declining (Auty 2000). Exchange rate overvaluation discouraged exports while sufficient foreign exchange could not be generated to meet the demands of the manufacturing sector that was highly dependent on imports. The mining sector was consequently affected as it was impossible to purchase the required spare parts and machinery. The anti-export bias in the trade regime resulted in inadequate supply of foreign exchange needed to acquire inputs for the mining sector (Aryeetey and Harrigan 2000).

Following the adoption of ERP 1983 the focus of policy for the industrial sector centred on privatization of SOEs, improving the incentive structure using exchange rate and trade taxes and reorganising the regulatory framework. The world Bank considered privatization of SOEs a way of creating an atmosphere for private participation. It was also seen as a means of avoiding the waste of government resources on unprofitable enterprises. During this period, trade liberalization was a major policy instrument for the industrial sector. Trade liberalization policies and strategies was to provide incentives for private sector investment into the industrials sector. Therefore, policies enacted aimed at stimulating private participation and investment in the sector. While tariff rates were reduced, quantitative restrictions were also removed. It was expected that the removal of trade barriers would stimulate competition and enhance efficiency in the manufacturing sector. Similarly, several acts including the Manufacturing Industries Acts 1971, Price Control Decree of 1974 and the 1976 Control of Sale of Specific Goods Decree were all repealed to improve the regulatory framework (Aryeetey and Harrigan 2000).

In recent times, industrial policy in Ghana is set within the context of Ghana's long-term vision of achieving upper middle-income status by 2020. In that regard, the main development objectives of industrial policy are to increase technological capacity and employment in the manufacturing sector as well as promoting the development of agro-based industrialisation (Ministry of Trade and Industry, n.d).

3.4.3 Crude Oil Boom and Petroleum Policies

Exploration of oil in Ghana dates to the 1890s when oil wells were drilled in the Half-Assin area at the onshore of the Tano Basin. However, the first significant discovery was made in 1970s off the coast of Saltpond. It was abandoned for a while due to the insufficient commercial quantities of the reserves. As part of the ERP adopted in 1983, efforts were made to develop the oil potential

of Ghana as well as restructure the energy sector. The government at the time therefore set up the legal framework within which the industry would operate. This led to the enactment of the "Ghana National Petroleum Corporation (GNPC) Law (PNDC Law 64) of 1983", "The petroleum (Exploration and Production) Law (PNDC Law 84) of 1984" and "The Petroleum Income Tax Law (PNDC Law 188) of 1987". Ghana National Petroleum Corporation (GNPC) which began operations in 1985 was established under PNDC law 64 as the statutory institution to oversee exploration and production activities.

In July 2007, Ghana joined the league of oil producing countries in the Gulf of Guinea following the announcement of discovery in commercial quantities offshore at Cape three points in the Western region of Ghana. The discovery of oil in commercial quantities was the main driver of a new Medium-term Development Policy framework, Ghana Shared Growth and Development Agenda (GSDA) which was developed in 2010. Just like the preceding development plans GSGDA aimed at achieving macroeconomic stability, provision of basic amenities and infrastructure as well as transparency and accountability. GSGDA also included oil and gas development, income inequality and employment. The idea was to spur economic development and poverty reduction with the combined revenues from Cocoa, gold and oil (Aryeetey and Fenny 2017).

While government polices emphasized development of the oil sector, community and rural infrastructural development of oil rich communities, measures were put in place to address concerns and to avoid a "resource curse". Aside from GNPC that was made a national oil company assigned with commercial task, the government set up Petroleum Regulatory Authority (Petroleum Commission) responsible for regulating and managing upstream petroleum operations. Similarly, the Petroleum Revenue Management Act which aims at ensuring transparency and efficient management of Ghana's oil resource was passed in 2011. The act provides a "framework for the collection, allocation and management of petroleum revenue in a responsible, transparent, accountable and sustainable manner for the benefit of the citizens of Ghana in accordance with Article 36 of the Constitution and for related matters." (MOFEP 2011: 4). As part of the oil revenue management, the Petroleum Holding Fund, Ghana Stabilization Fund and Ghana Heritage Fund were established under the Act.

To ensure that the people of Ghana benefit from the production of Crude oil , A "Local Content and Local Participation in Petroleum Activities-Policy framework" was set up. The objective of the policy is to achieve at least 90% local participation in every sphere of oil and gas industry value chain by the year 2020. These legislative and policy initiatives indicate governments attempt to ensure the development of oil and gas sector as well managing the oil resources effectively. As

indicated in the GSGDA, "Together with cocoa and gold, oil and gas would be the main drivers of economic growth; Ghana's growth would therefore continue to be natural resources-driven. For this reason, the GSGDA is aimed at ensuring that the new growth poles are reinforced to accelerate poverty reduction without becoming enclaves" (NDPC 2010: 4).

Chapter 4 : Analysis and Findings

4.1 Introduction

This chapter analyses data on Ghana's exports, Export composition, Terms of trade, human capital accumulation, real GDP and non-oil GDP growth, and sectoral growth. Second 4.2 analyses the extent to which Ghana is dependent on natural resource exports and its implication for growth. Section 4.3 analyses data on human capital accumulation while section 4.4 engages analysis of oil production and its effect on growth as well as sectoral performance. The focus is this section (4.4) is specifically on post 2010, that is the period after oil production. The data presented however ranges from the period 2000-2016 for comparison purpose.

Data for the analysis in this chapter generally ranges from the post-independence period that is, 1960 to 2016. The data set and time frame chosen for each specific analysis is based on availability and relevance of the period for the analysis. Data used is collected from both local and international sources including Ghana Statistical Service, Bank of Ghana, World Bank and Organisation of Petroleum Exporting Countries.

4.2 Dependence on Natural Resource Exports (1960-2016)

Exports have remained one of the major drivers of growth in most countries in Sub-Saharan Africa, mostly driven by commodity exports. Similarly, most governments of developing countries depend heavily on revenues from exports of commodities to stimulate growth and development of their economies. Countries such as Congo, Nigeria, Equatorial Guinea in the Sub-Saharan region for instance, derive more than 50 percent of their revenues from oil.

Ghana has made a mark in the global economy and has played an active role in world trade despite being a small economy. As mentioned earlier, the country is known for being the second largest producer and exporter of Cocoa in the world, the second largest exporter of Gold in Africa and a major exporter of Timber in Africa. Ghana's exports declined for most periods before 1990. This was mainly due to overvaluation of real exchange rate, production problems in the cocoa sector, external factors among others that the economy faced at the time. The country's relationship with the rest of the world as indicated by trade (exports plus imports) as a percentage of GDP shows how the economy has liberalised its trade regime over the years (See Fig 4.1). Trade liberalisation in Ghana since 1990s has been characterised by cutting down average tariffs and removal of non-tariff barriers to imports. For instance, the average most favoured nation (MFN) tariff applied was reduced from 14% in 2000 to 12.7% in 2007 (Ackah et al. 2009).

Ghana is heavily dependent on export earnings for its growth. The share of exports of goods and services in GDP indicates how important exports are for the economy. The share of exports of goods and services in GDP averaged 39.3% between 2011-2016 compared to 15% in the 1970s and 12% in the 1980s. Trade liberalization following the reforms and structural adjustments in the late 1980s has clearly been associated with increasing exports and trade. The pre-reform period was associated with a decline in the share of exports in GDP as well as trade as a percentage of GDP as depicted in figure 4.1. However, since 1990s the share of exports in GDP has been increasing

Figure 4-1 *Exports and Trade as a Percentage of GDP 1961-2016 (Period average)*

Source: Author's construction based on Data from World Bank (World Development Indicators)

from an average of 12% in the previous decade to 28.3% in 1991-2000, 33.8% in 2001-2010 and an average of 39.3% in the past six years. Trade liberalization, by removing barriers makes it less difficult to import, resulting in cheap imports. Imports has therefore increased faster than exports over the years as exhibited by the share of trade (exports plus imports) in GDP. The share of trade in GDP has increased to an average of about 90% over the last six years as against exports share of 39%. The resulting trade deficit has remained a constraint for growth. Having said that, export earnings have remained a major source of government revenue.

The country's export composition as illustrated on figure 4.2 shows that Ghana's exports have been dominated by natural resource/primary commodity over the years. The principal export commodities over the years have been cocoa, gold, timber and (crude oil since 2011). Cocoa, timber and minerals constituted over 80% of merchandize exports for most periods in the 1970s. Cocoa was the largest foreign exchange earner, with its earnings averaging 65% of total merchandize export in the pre-reform period (Oduro 2000). Being the largest producer of cocoa in the world at

Independence, the economy of Ghana was heavily dependent on food exports for foreign exchange earnings. Food exports, mainly made up of cocoa constituted over 70% of total merchandise exports in the period 1960-1970 and 1971-1980. Merchandise exports has been dominated by food exports (more than 50%) prior to 2010 mainly because cocoa which is the dominant food export was one of the largest export earners.

Figure 4-2 *Composition of Exports as a share of Total Merchandise Exports (1960-2016)*
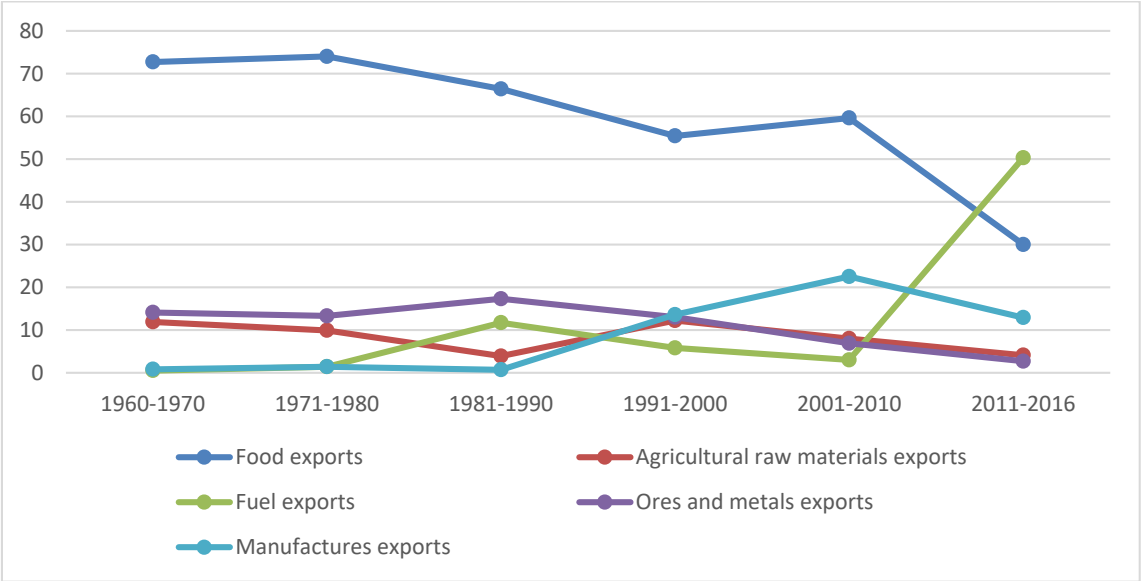
Source: Author's construction based on Data from World Bank (World Development Indicators)

The 1970s witnessed a decline in the country's share in world exports. This was largely due to a fall in world market prices for cocoa and contraction in volumes of cocoa exports. According to Oduro (2000) the East Asian Economies emerged with their exports of manufactures during the same period. Therefore, failure of domestic policies at the time as mentioned in the previous chapter also explains why Ghana was not successful in maintaining its share in the widening world market through export diversification. The decline in external sector performance manifested in the overall performance of the economy as real GDP growth hit negative values by 1983 (see fig 3.1 in the previous chapter).

Following the reforms in 1983, export volumes increased considerably although growth in export values were minimal due to falling prices of cocoa and gold in the world market between 1984 and 1992. The period of falling share of food exports interestingly coincides with the period of decline in world prices of cocoa and gold. The world market price of cocoa by 1989 was less than half the value of 1984 (Oduro 2000). The share of exports in GDP over the same period declined (see fig 4.1 above) with declining exports mainly due to poor performance of cocoa exports. Although

cocoa, gold and timber constituted about 85% of total exports (Oduro 2000), cocoa has remained a dominant foreign exchange earner in the 1960s and 1970s. Gold exports however dominated merchandise exports in the 1990s as indicated by an increase in the share of ores and metal exports in the 1980s. Looking at the share of principal exports in total exports, little diversification of exports has taken place over the years. Little progress was made in reducing the share of primary and resource commodities including food exports, ores and metals, agricultural raw materials and fuel exports in total merchandise exports until the 1990s when manufactures share in merchandise exports saw a significant increase and more than tripled between 2000-2010.

The production of crude oil in the latter part of the year 2010 saw an increase in the share of fuel exports, about 50% of total merchandise exports between 2011 and 2016. On the other hand, the share of food exports have declined over the same period despite an increase in the previous decade. The crude oil boom as expected increased the economic activities of the sector which is directly related to the commodity boom thereby increasing the share of fuel exports which includes crude oil and gas. The period also witnessed a decline in the share of manufactured exports from 22.5% in the previous decade, the largest share over the entire 56 years under review to about 13%.

Table 4-1 *Share of Principal Export Commodities in Total Exports*

Year	Cocoa (% of total exports)	Gold (% of total exports)	Timber (% of total exports)	Crude Oil (% of total exports)	Other Exports (% of total exports)
2000	25	40	N/A	0	35
2001	22	36	N/A	0	41
2002	19	34	N/A	0	46
2003	26	32	7	0	34
2004	36	31	8	0	26
2005	27	31	7	0	35
2006	28	34	5	0	33
2007	23	41	6	0	30
2008	23	43	6	0	28
2009	24	44	3	0	29
2010	20	48	2	0	30
2011	15	38	1	22	23
2012	16	42	1	22	19
2013	12	36	1	28	23
2014	16	33	1	28	21
2015	19	31	2	19	29
2016	17	44	2	12	24

Source: Authors calculations based on data from BOG
*Other exports include exports of cocoa products, electricity, residual fuel oil, manganese, bauxite and diamonds, crude oil (jubilee)
N/A: Data missing from source

Table 4.1 above also illustrates Ghana's dependency on natural resource exports by showing the country's exports of main commodities as a percentage of total exports. The data from Bank of Ghana indicates that Cocoa, Gold and Timber accounted for about 73% of Ghana's total merchandise exports prior to oil production. Export of Gold contributes an average of about 41% of total exports earnings. The data shows that cocoa has lost its dominance in foreign exchange earnings to Gold.

The decline in cocoa's share could be attributed to the significance of gold and other minerals as well as the increase in gold prices especially in the 2000s. However, unlike cocoa, gold do not constitute more than 50% of total merchandise exports as cocoa has done over the past decades. Since 2011, the main export commodities including crude oil accounts for about 77% of export earnings. The structure of the Ghanaian economy as reflected in the country's export composition indicates that the economy is highly dependent on natural resource based traditional exports. Although there is evidence of an increase in the share of non-traditional exports including manufactures over the past two decades, figure 4.2 and table 4.1 shows that natural resource exports continue to dominate the country's total merchandize exports.

4.2.1 Terms of Trade and Economic Growth

The structuralist/dependency theorist argument suggests that there is a link between terms of trade and economic growth and that terms of trade is significant in explaining the long-run economic growth performance of a country. Both the trends in terms of trade as well as volatility in the terms of trade have been argued by economists to have a relationship with economic growth performance. The underlining assumption is that secular improvement in the terms of trade results in investment and therefore stimulates growth in the long run while volatility in the terms of trade leads to a decline in investment and growth (Blattman et al. 2003). It is argued that the terms of trade of natural resource and primary products are more volatile than manufacture (Blattman et al. 2007). The classic Prebisch-Singer hypothesis (1950) suggests that countries that specialize in the export of natural resource and primary product experience deterioration in terms of trade as the prices of such commodities face secular decline in the long run. Since the analysis of Ghana's export composition indicates that the economy is largely dependent on natural resource exports, it is important to explore the terms of trade that the country faces. This section therefore explores changes in the terms of trade for Ghana and how it relates to GDP growth.

Figure 4.3 below shows changes in the net barter terms of trade and real GDP growth in Ghana. The data used for the analysis starts from 1981 as available data on net barter terms of trade index does not go beyond 1980.

Figure 4-3 *Changes in Net Barter Terms of Trade and Real GDP Growth (1980-2015)*
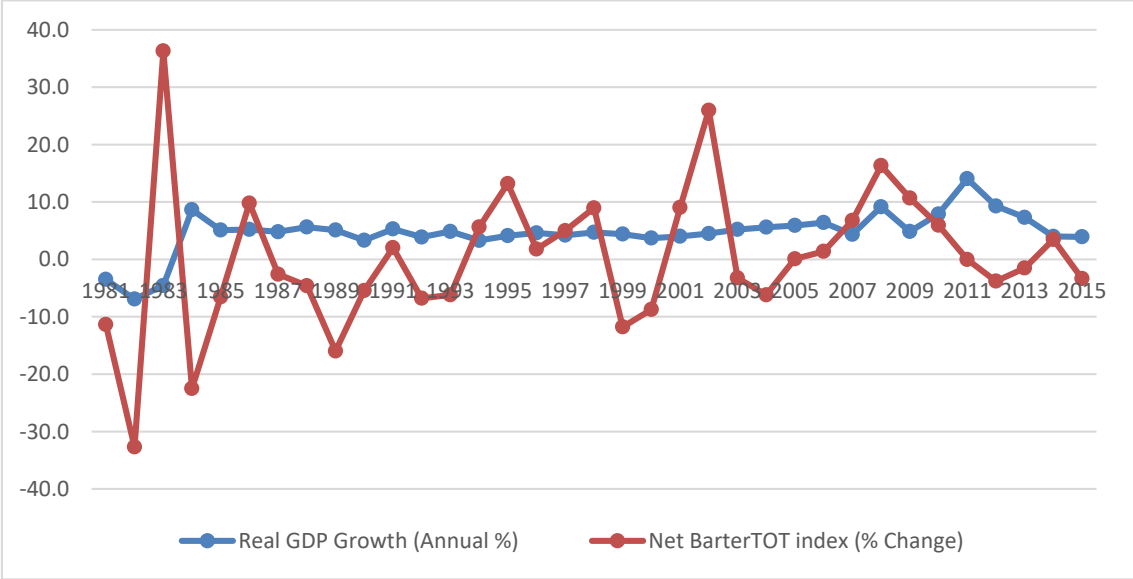
Source: Author's construction based on data from World Bank and UNCTAD statistics

 Figure 4.3 indicates that TOT for Ghana has been volatile for most of the years under review. This is not surprising given the fact that the country's exports over the years have been dominated by resource and primary products, hence confirming the argument of volatility in the prices of such commodities relative to manufactures. Also for most part of the period, improvement in TOT has been associated with increased real GDP growth while declining TOT is associated with a fall in real GDP growth. However, despite the general volatility in TOT that is observed, there was a sustained real GDP growth of about 4% in the late 1980s through 1990s and accelerated growth that is observed in the early 2000s. Political stability, improvement in policy and macroeconomic management following ERP/SAP mainly explains the stable economic growth experienced by the economy. This trend is in contrast with the volatile growth which characterised the 1970s and early 1980s. Unlike the 1980s when the country experienced unfavourable terms of trade for most of the years (7 out of 10), terms of trade improved for the most part of the 2000s. This is the same period when manufacturing share in export also exhibited significant increase (see fig 4.2). The early 2000s were also characterised by increasing commodity prices and hence Ghana enjoyed improvement in the terms of trade and increasing trend in real GDP growth.

4.3 Human Capital Accumulation

It is widely accepted that the accumulation of human capital is essential for sustained growth thus, the relevance of human capital in fostering economic growth and human development cannot be overemphasised. This is generally associated with spending on education; public expenditure on education. Resource rents or windfall revenues from natural resources should therefore provide government additional resources to invest in education.

While both primary and secondary enrolment were increasing during the pre-reform period, particularly in the 1970s, public expenditure on education decreased over the same period (Osei 2001). Quality of education is what matters in human capital accumulation, not just quantity. Therefore, it can be argued that human capital accumulation was deficient during the period of growth collapse. Figure 4.4 provides government expenditure on education as a percentage of total government expenditure. The data presented is between 1999 to 2014 because earlier data is not available.

Figure 4-4 Expenditure on Education as a share of total Government Expenditure (1999-2014)
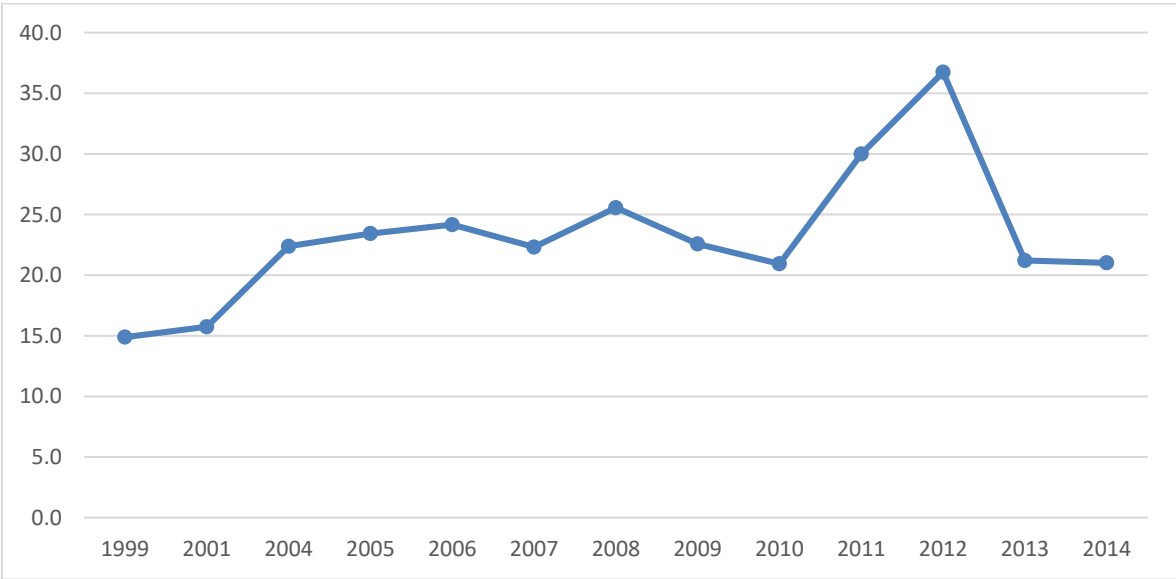
Source: Author's construction based on Data from World Bank (World Development Indicators)

Generally, Expenditure on Education increased steadily from 14.9% in over 20% in the 2000s, despite occasional decline. The highest value of expenditure on education over the years was 36.7% in 2012 and 30% in 2011 while the lowest values were 14.9% and 15.7% in 1999 and 2001 respectively. Interestingly, the years that recorded the highest value for expenditure on education coincides with the year after which Ghana began the production of crude oil in commercial quantities. Similarly, Government expenditure on Education as a percentage of GDP was the highest in 2011 and 2012. The values recorded were 8.1% and 7.9% respectively with the lowest being 1.8% and 1.9% in 1981 and 1982 respectively (see Appendix 1). It therefore appears that perhaps revenues

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obtained from oil, stimulated an increase in government spending on education. Expenditure on education as a share of total public expenditure increased by about 43% in 2011 and 22.5% in 2012 although it has been decreasing since.

4.4 Oil Production and Economic Growth (2010-2016)

The adoption of economic reforms in the late 1980s and the return to democratic and constitutional rule in 1992 created stable environment that set the pace for a sustained growth in Ghana. The past two decades unlike the pre-reform period was marked by significant and steady real GDP growth rate. There has been an improvement in macroeconomic policies since 2000 and the possibility of policy reversal seem very unlikely given the current environment (Aryeetey and Kanbur 2005). Following improvement in macroeconomic and political situation coupled with increased prices for gold and cocoa, the economy has over the past two decades enjoyed relatively stable and significant economic performance.

Figure 4-5 *Real GDP and Per capita GDP growth (Annual %) 1990-2016*
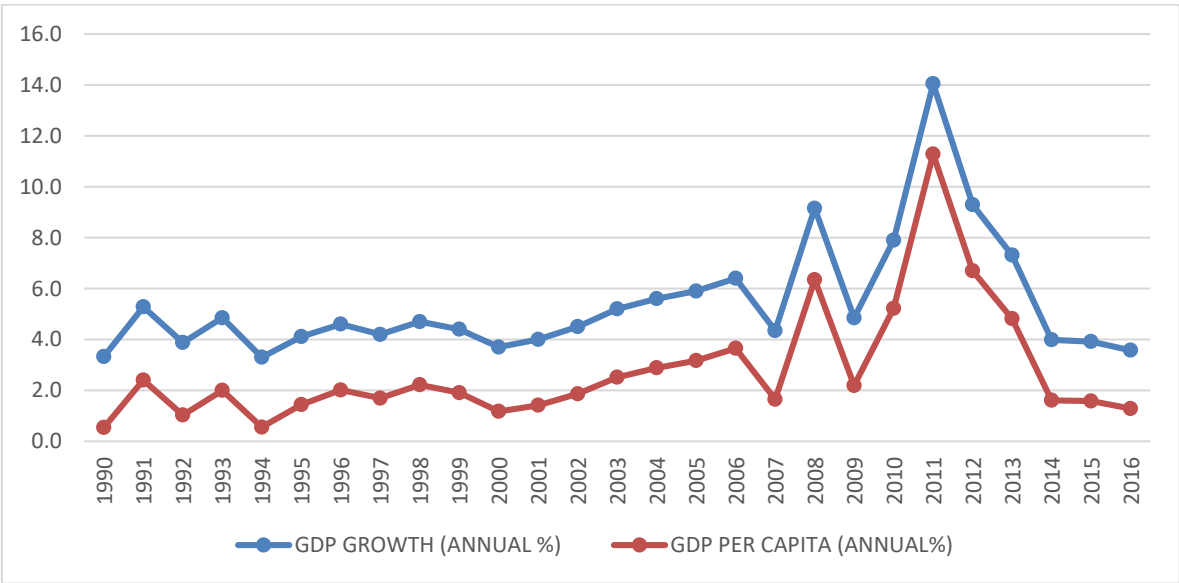
Source: World Bank (World Development Indicators)

Between 2003 and 2007, the country maintained an average real GDP growth of 5.5% (see fig 4.5 above). The comovement of real GDP and per capital GDP suggests population growth rate has not changed over the years. The performance of this period was particularly impressive and is mainly attributed to significant debt relief resulting from the adoption of HIPC initiative, inflow of external aid and rising commodity prices (Ackah et al. 2009).

The structure of the economy took a different turn in 2011 when the production of oil led to real GDP growth of 14% making it the fastest growing economy in Africa. Ghana currently produces over 100,000 barrels of oil per day. It is expected that production would increase by more than twice the value by the year 2021 as output in the Jubilee field increases while production in other fields begin. Since 2011, oil production has had a significant bearing on economic growth in Ghana. Similarly, government budget as well as macroeconomic performance is also affected by revenues of crude oil exports.

Data from Bank of Ghana presented on table 4.2 shows that in 2011 Ghana exported about 2.8 billion dollars' worth of crude oil. The value of crude oil exports increased to about 3.9 billion US dollars in 2013 and decreased to about 3.7 billion US dollars in 2014. The corresponding total government revenue including royalties, surface rentals and taxes, carried and participation interest increased from about 444 million US dollars (16% of total oil exports) to about 978 million US dollars (26% of total oil exports) over the same period (Institute for Fiscal Studies, 2015). Crude oil joined Gold and Cocoa as the major export commodities in Ghana and has since 2011 altogether accounted for more than 75% of total merchandise exports and export revenue. It has since then

Table 4-2 *Merchandise Exports (In Millions of US Dollars) 2010-2016*

Year	Cocoa	Gold	Crude oil	Timber	*Other Exports	Total
2010	1,598.93	3,803.51		189.46	2,372.75	7,964.65
2011	1,934.39	4,912.85	2,780.66	166.45	2,978.39	12,772.73
2012	2,192.69	5,643.27	2,976.07	131.02	2,609.30	13,552.35
2013	1,612.06	4,965.71	3,885.31	165.77	3,123.07	13,751.92
2014	2,079.73	4,388.06	3,724.96	185.04	2,839.00	13,216.79
2015	1,970.93	3,212.59	1,931.28	208.75	2,997.63	10,321.18
2016	1,923.30	4,919.46	1,345.22	254.25	2,694.64	11,136.88

Source: Bank of Ghana

*Other exports include exports of cocoa products, electricity, residual fuel oil, manganese, bauxite and diamonds, crude oil (jubilee)

become the largest foreign exchange earner following gold until after 2014 thanks to the falling oil prices (see appendix 2). The data presented on table 4.1 shows that the share of oil in total merchandise exports has become increasingly important, about 22% in 2011 and 28% in 2014. Ghana's economic growth since 2011 has been stimulated by oil production and related activities.

Figure 4-6 *Trends in Non-oil GDP and real GDP growth rate (2007-2016)*
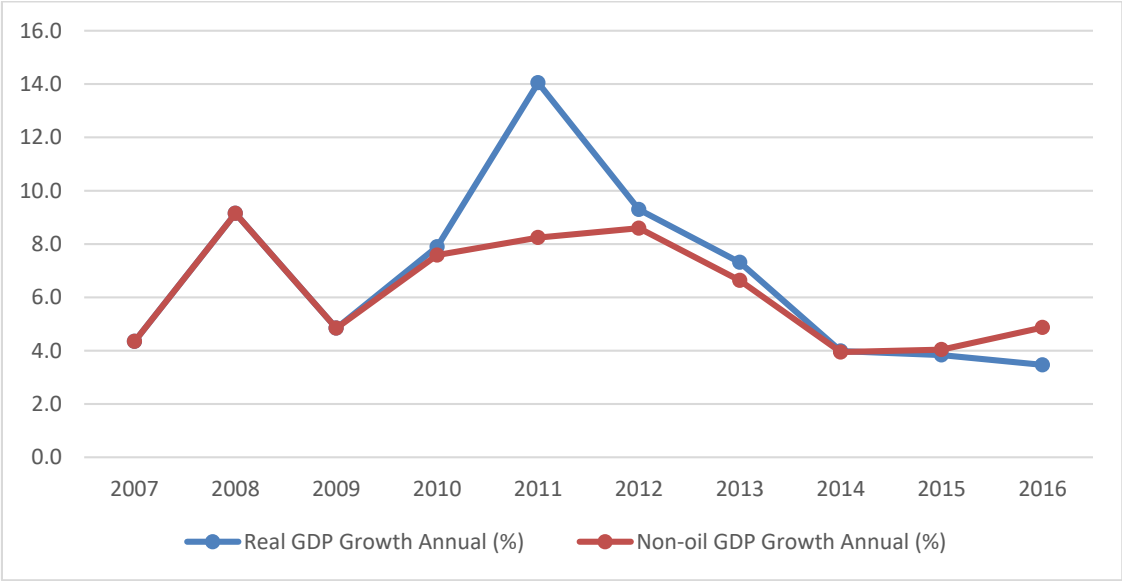
Source: Ghana Statistical Service, World Bank (World Development Indicators)

Figure 4.6 above shows the trend in non-oil GDP and overall GDP over the years. The trend shows a peak in overall real GDP growth of 14%. The 14% growth in overall real GDP which was recorded in 2011 is the highest growth rate recorded in the history of the Ghanaian economy. This is mainly attributable to the drilling of crude oil in commercial quantities that had begun in the Jubilee field during the latter part of 2010. The production of crude oil as well as increase in oil related activities therefore spurred growth, reaching a peak of 14%. The economy recorded non-oil GDP of 8.2% (2011), 8.6% (2012) and 6.6% (2013) compared to overall real GDP growth of 14% (2011), 9.3% (2012) and 7.3% (2013). However, from 2014, the contribution of the oil sector towards overall real GDP growth has declined significantly. In 2014, non-oil GDP grew at a rate of 3.9% compared to the overall real GDP growth rate of 4.2%. As for the years 2015 and 2016, the non-oil GDP growth rate was 4% and 4.9% respectively compared with the real GDP growth rate of 3.8% and 3.5%. This is an indication of the failure of the oil sector to contribute significantly toward overall real GDP growth. The growth momentum exhibited in 2011 could not be maintained in the subsequent years. The declining oil prices in the world market has significantly affected the performance of the oil sector and its contribution to real GDP growth. Again, this is an indication that perhaps the economy of Ghana is becoming an oil-dependent economy. The economy continues to be vulnerable to external shocks and fluctuations in commodity prices in the international market.

The implication is that changes in oil prices, in this case falling oil prices significantly affects government revenue and for that matter presents fiscal challenges to the government. As mentioned earlier, unlike manufactures, natural resource commodities, particularly oil is volatile and so dependence on such commodities implies that the economy is susceptible to revenue volatility. Oil revenue including surface rentals, royalties, carried and Participatory interest, corporate income tax decreased by over 50% (780 million US dollars to about 341 million US dollars) between January and September 2015 compared to the same period in 2014 (Government of Ghana 2016). The total petroleum receipts were below the Budget target. The shortfall of revenue is attributed to the decline in crude oil prices as indicated in the 2015 budget statement. The estimated Benchmark Revenue (BR) could not be revised due to the rigid nature of the Petroleum Revenue Management Act (PRMA) which did not allow for revision. Subsequently, the government had to amend the PRMA. With this amendment, the BR price was revised, reducing it from US$99.38 per barrel to US$ 53.69 during the semi-annual budget review. An amount of 53.69 million dollars was taken out of the 'Ghana Stabilisation Fund' (GSF) for the first time to cater for the 'Annual Budget Funding Amount' (ABFA) (Government of Ghana 2016). Again, the government was forced to reduce the quarterly ABFA established in the 2015 budget from the initial amount of 180.45 million US dollars to 59.13 million during the mid-year review. The revision of the quarterly ABFA is basically due to the continuous decline in crude oil price (Government of Ghana 2016).

 In sum, although Ghana's oil output remained unchanged in 2015, the declining oil prices had a significant impact on oil revenue with its associated fiscal implications. With the production of oil, the additional revenue was expected to reduce government borrowing. Falling oil prices has however undermined this expectation, thereby necessitating government borrowing. The falling oil prices has reduced the actual revenue, indicating that oil is not a source of income that the country should peg its fiscal policies to (Aryeetey and Fenny 2017).

For the structuralist, industrialisation and diversification is necessary for sustained economic growth. A diversified economy is less prone to volatility that is associated with a particular industry or sector. Diversification ensures that even with the underperformance of a particular sector or industry, other stronger sectors will stimulate growth and enable the economy to maintain a healthy and sustained economic growth. The economic base of Ghana remains narrow and vulnerable to fluctuations in commodity prices in the international market. To maintain accelerated and sustained growth in the long run, it is necessary that the economy is diversified from the narrow range of commodity exports.

4.4.1 Economic Structure and Sectoral Performance

It is widely recognized that sustained economic growth is associated with significant structural change. Yet trends in the structure of the Ghanaian economy shows there has scarcely been any structural change. Until the 1990s, Agriculture was the dominant sector of the economy with more than 50% share in GDP. Figure 3.3 in the previous chapter indicates a declining share of Agriculture in GDP since 1990. There has been a shift in dominance from Agriculture to service while changes in the industrial sector has been minimal. The declining shares in Agriculture was not necessarily a structural change. According to Aryeeteh and Kabur (2005), the rise in the Service sector was stimulated by relatively lower-order service activities including wholesale and retail, hotel and restaurants. Similarly, in the industrial sector, the share of mining and construction had increased over the years but that of manufacturing had barely changed.

Figure 4.7 below shows that in recent times, the service sector remains the largest sector of the economy. Industry has however replaced Agriculture as the second largest sector of the economy since 2011. The service sector continues to be the fastest growing sector of the economy constituting about 57% share of GDP in 2016 compared to 49% in 2011. Performance of the sector in recent time is underpinned by information and communication which is the fastest growing sub-sector in the service sector.

The contribution of Agriculture to GDP continues to decline despite the sector's relatively decent growth in recent times compared to its growth rate of 0.8% in 2011(see table 4.3 below). The declining trend is observed after the sector's contribution to GDP peaked at 31.8% in 2009. The sector's contribution to national output has declined from 29.8% in 2010 to 18.9% in 2016.

Figure 4-7 *Sectoral Contribution to real GDP 2009-2016*
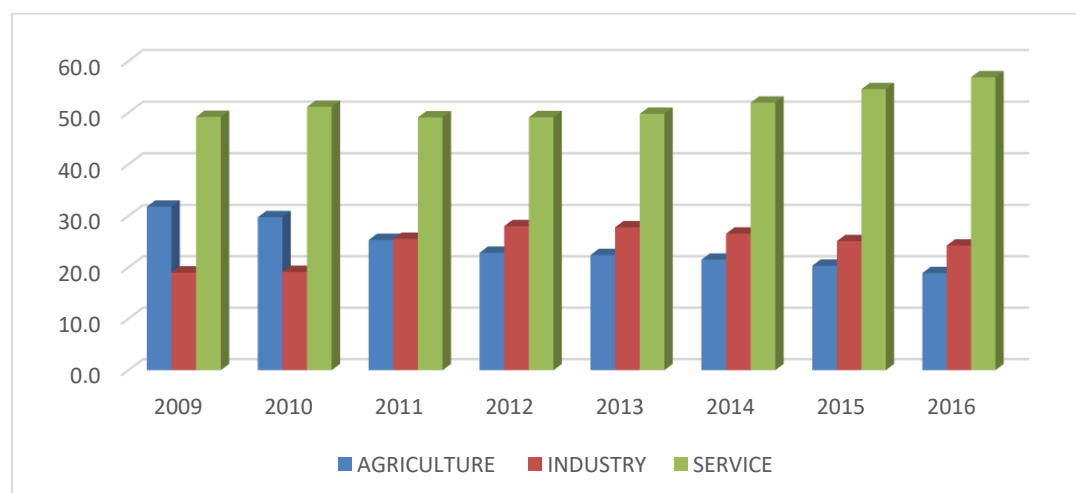
Source: Ghana Statistical Service

Table 4-3. *Sectoral and sub-sector Growth rate (%) 2009-2016*

	2009	2010	2011	2012	2013	2014	2015	2016
AGRICULTURE	**7.2**	**5.3**	**0.8**	**2.3**	**5.7**	**4.6**	**2.8**	**3.0**
Crops	10.2	5.0	3.7	0.8	5.9	5.7	2.5	2.5
Of which Cocoa	5.0	26.6	14.0	-9.5	2.6	4.3	-8.0	-7.0
Livestock	4.4	4.6	5.1	5.2	5.3	5.3	5.3	5.3
Forestry and Logging	0.7	10.1	-14.0	6.8	4.6	3.8	1.4	2.5
Fishing	-5.7	1.5	-8.7	9.1	5.7	-5.6	4.3	5.7
INDUSTRY	**4.5**	**6.9**	**41.6**	**11.0**	**6.6**	**0.8**	**-0.3**	**-1.4**
Mining and Quarrying	6.8	18.8	206.5	16.4	11.6	3.2	-6.1	-10.7
Of which Crude Oil		0.0	0.0	21.6	18.0	4.5	0.9	-16.9
Manufacturing	-1.3	7.6	17.0	2.0	-0.5	-0.8	2.2	2.7
Electricity	7.5	12.3	-0.8	11.1	16.3	0.3	-10.2	11.7
Water and Sewerage	7.7	5.3	2.9	2.2	-1.6	-1.1	20.0	-3.2
Construction	9.3	2.5	17.2	16.4	8.6	0.0	2.2	2.9
SERVICE	**5.6**	**9.8**	**9.4**	**12.1**	**10.0**	**5.6**	**6.3**	**5.7**
Trade; Repair of Vehicles, Household Goods	5.4	13.3	11.0	11.3	14.5	1.6	9.7	3.1
Hotels and Restaurants	-3.8	2.7	3.6	5.7	24.6	-1.2	1.5	0.9
Transport and Storage	4.4	8.0	11.0	9.2	-0.5	0.3	3.0	2.2
Information and communication	3.9	24.5	17.0	41.5	24.3	38.4	21.6	21.7
Financial and Insurance Activities	9.3	16.7	1.0	21.9	23.2	22.9	3.5	3.6
Real Estate, Professional, Administrative & Support Service activities	0.2	13.9	14.0	18.3	17.5	-1.5	7.7	3.8
Public Administration & Defence; Social Security	11.7	3.4	7.4	4.2	8.4	-4.7	1.4	2.2
Education	12.4	5.3	3.8	6.7	6.9	7.1	7.9	8.3
Health and Social Work	15.2	11.2	5.0	10.9	7.8	-1.7	15.7	16.8
Community, Social & Personal Service Activities	7.5	10.8	12.9	4.2	36.5	-1.6	-6.4	-5.2

Source: Ghana Statistical Service

This trend suggests that the sector's contribution to national output has been diminishing due to the rapid expansion of oil sub-sector and for that matter industry as well as the service sector. Hence despite the expansion of Agriculture in absolute terms, the sector's contribution to GDP continues to decline in relative terms. The declining growth in the Agriculture sector in recent times is underpinned by the to drop in cocoa production with the sub-sector also experiencing negative growth rates over the past two years.

Industry is currently the second largest sector of the economy. With the production of oil in 2010, the contribution of industry to GDP jumped from 19% in 2009 to 26% in 2011. However, the share of industry in GDP has been declining since its peak at 28% in 2012. Industry constituted 24.2% of GDP in 2016, a much lower proportion compared to 25.1%, 26.6%, 27.8% in 2015, 2014 and 2013 respectively. The industrial sector is the worst performing sector in recent times with growth declining from 41.6% in 2011 to -1.6% in 2016. The high growth recorded in 2011 is attributable the production and sale of crude oil which started in 2010 coupled with rising crude oil prices in the same year. The performance of industry is stimulated primarily by growth in the mining and quarrying sub-sector of which crude oil has been a major contributor. Hence the negative growth experienced in the sub-sector over the past two years which has resulted in the decline of the industrial sector is underpinned by the underperformance of the crude oil subsector. Interestingly, the share of manufacturing in real GDP has been declining over the years from about 11% in 2000 to about 4.7% in 2016. In contrast, the share of construction and mining/quarrying have increased from 5.4% and 3.2% to 13.7% and 18.9% respectively over the same period (see appendix 3). This indicates that the increased share of the industrial sector has nothing to do with expansion in manufacturing.

Like the mining sector before it, there are few spill overs and externalities from the FDI in the oil sector to the rest of the economy. Ghana lacks the physical and human capital to take full and active participation in the oil industry. Oil is drilled offshore and so with exception of upstream activities, majority of the value-chain activities takes place in the home countries of the multinational corporations. The pattern of production in the oil sector just like Gold in Ghana is such that the sectors are almost insulated from the rest of the economy (Ayelazuno 2014).

Chapter 5 : Conclusion and Policy Implication

Endowed with a wide range of natural resources, Ghana had a potential benefit for economic development given that the dominant export commodity which was cocoa generates diffuse socio-economic linkages. Yet, the growth record of the country during the pre-reform period (1960-1983) was disappointing. Ghana may have had a favourable pre-condition for competitive industrialisation compared with Malaysia. However, the economy's growth trajectory during the pre-reform period very much conformed to the staple trap model of resource endowment (Osei 2001). The staple trap model predicts that without a developmental autonomous benevolent state or consensual democracy, resource abundant country will be unable to manage the risks of longer dependence on resource based and primary commodity exports. The economy may shift toward inward looking trade policy and over reliance on primary commodity with declining competitiveness will result in decline of all forms of capital accumulation. The ISI strategy adopted in the early 1960s was mainly to be financed by domestic resources, particularly taxation of cocoa export. The creation of cocoa marketing board to create a gap between cocoa price on the international market and producer price was to generate rents for the government. Hence, political economy of resource rent played a role in Ghana's growth trajectory during the pre-reform period. Natural resource rents (taxation of cocoa exports in this case) provided Dr. Kwame Nkrumah, the first president of Ghana, the opportunity to pursue his political ideology (dogmatic pan-Africa ideology). Osei (2001) explains how these factors and others contributed to growth collapse from the mid-1960s which lasted until after 1983 when the country embarked on comprehensive reforms.

Analysis of the export composition of Ghana between 1960-2016 indicates that the economy is highly dependent on natural resource and commodity exports. Resource based commodities, particularly cocoa and gold, have dominated exports while manufacturing on the other hand accounted for an average of 0.8%, 1.4% and 0.7% of total merchandize exports in the 1960s, 1970s and 1980s respectively. In recent times, manufactures accounts for about 13% of total merchandize exports. Ghana has consistently relied on few commodities for exports with Gold, cocoa and crude oil currently accounting for over 77% of total export earnings. Crude oil production which began in 2010 has improved Ghana's export portfolio but the country's economic base remains narrow.

Examination of net barter TOT shows that, over the years, TOT for Ghana has been volatile, confirming the argument of volatility in argument of resource based exports. Rise in commodity prices and improvement in the net barter TOT has mainly been associated with increase in real GDP growth and vice versa. Despite the call to develop non-resource sectors and policy rhetoric

on the need for diversification, Ghana has been unsuccessful in doing so. Cocoa and gold has continued to dominate Ghana's exports since independence with crude oil joining the major export commodities in 2011. Dependence on resource exports implies that the economy remains vulnerable to external shocks, particularly commodity price volatility. Poor management of volatile revenues including misguided government expenditure and borrowing in periods of boom results in financial difficulties and budget deficits in periods of revenue shocks. This insight is basically the idea behind the stabilisation fund established under the PRMA.

In explaining what causes growth, new growth theories emphasise externalities and increasing returns to scale which implies that manufacturing is of relevance. The study by Findlay et al (1999) indicates that a major lesson from world economic history is the fact that the path to sustained growth goes through industrialisation which is underpinned by manufacturing. Again, the staples theory of growth emphasises the development of linkages between the export sector and an emerging manufacturing sector. Manufacturing tends to be a dynamic sector stimulated by technological progress. Secondly, manufacturing traditionally absorbs unskilled labour in high quantities and this distinguishes it from other sectors such as mining, finance which are equally of high productivity. This allows for growth and structural change. Therefore, accelerated growth could only be maintained if there is structural transformation. A critical look at the production structure of the Ghanaian economy suggests that there hasn't been any success in developing a viable industrial sector. Export of resource based product has not resulted in the creation of strong linkages to manufacturing. The mining sector in Ghana is very much an enclave with little contact with other sectors of the economy. Industrial sector in Ghana is underpinned by mining/quarrying (including crude oil) and construction. While the sector accounts for about 24% (in 2016) of real GDP, manufacturing constitute just about 4.7%. Trends in manufacturing share in national output appears to be consistent with Rodrik's argument of premature deindustrialisation. Ghana has basically turned into a service economy with declining manufacturing shares. Structural change that results in greater share of service in national output is not growth enhancing. Although high value-added services like finance may have productivity externality outcomes like manufacturing, it does not have the ability to absorb surplus labour because of its high skilled labour intensity.

The return to multiparty democracy and subsequent improvement in governance, combined with commodity price boom in the 2000s led to accelerated growth in Ghana. It also promoted exploratory activities that resulted in crude oil discoveries and production in commercial quantities. Certainly, Ghana still faces institutional challenges and must endeavour to foster transparent and sound governance on oil revenues. However, the country has done quite well in terms of putting measures

in place internally to minimize threats of a resource curse. Economic growth in Ghana since 2011 has been buoyed by oil but the growth momentum exhibited in 2011 could not be maintained in the subsequent years. With falling oil prices, the sector's contribution towards national output has declined. The dependence on natural resource as reflected in the large share of resource based commodities (gold, cocoa, crude oil) in total exports and the historic growth experience of Ghana indicates the need for a significant shift in the production structure of the economy. To maintain accelerated and sustained growth in the long run, it is necessary that the economy is diversified from the narrow range of commodity exports. Policies geared towards developing a viable manufacturing sector in the economy would be a step in the right direction. This includes policies that aim at promoting sectors that have forward and backward linkages with natural resource sectors, expanding public investment in human capital and infrastructural development.

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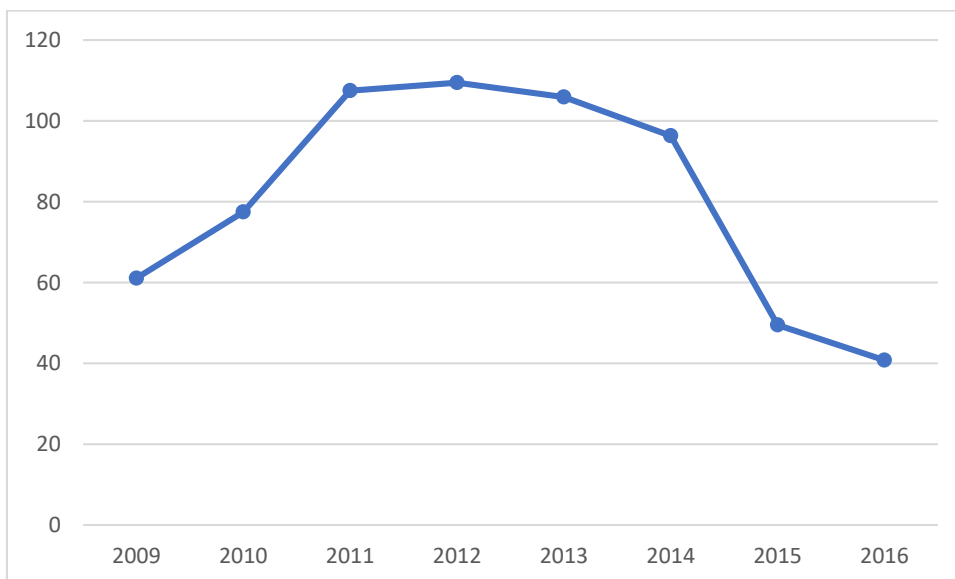
Appendices

Appendix 1: Government Expenditure on Education, total (% of GDP)
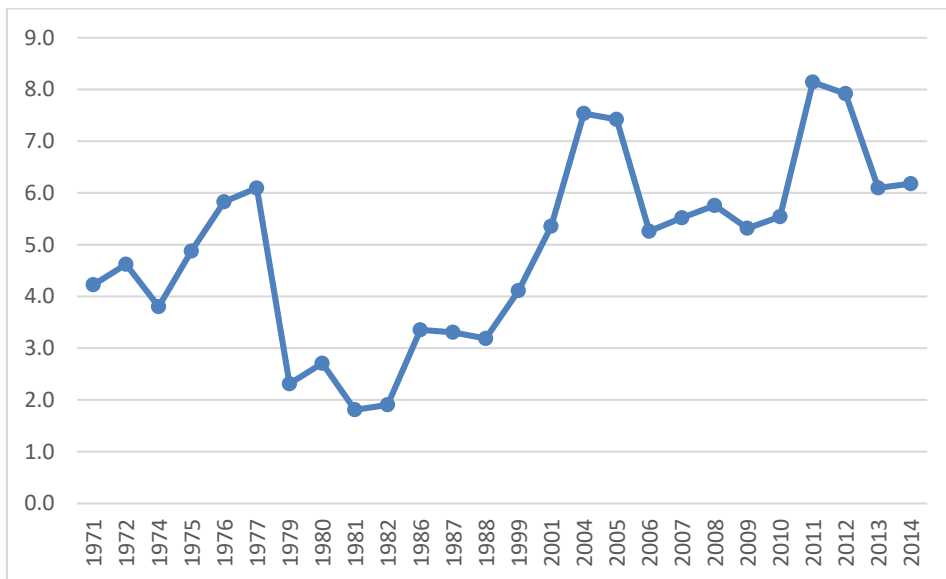
Source: World Bank

Appendix 2: OPEC Basket Oil Prices (Annual US Dollar Per Barrel)

Source: OPEC Basket

Appendix 3: Sectoral & sub-sector share of Real GDP (2000-2016)

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Agriculture	**29.94**	**29.80**	**29.70**	**30.61**	**31.75**	**31.23**	**30.40**	**29.05**	**30.96**
Crops	19.96	19.84	19.77	20.80	22.03	21.79	21.30	20.27	22.45
Of which Cocoa	1.90	1.80	1.72	2.26	2.96	3.14	3.02	2.67	2.46
Livestock	2.63	2.64	2.65	2.62	2.58	2.53	2.45	2.30	2.12
Forestry and Logging	4.37	4.39	4.41	4.41	4.34	4.31	4.13	4.18	3.74
Fishing	2.99	2.92	2.87	2.79	2.80	2.60	2.52	2.30	2.66
Industry	**21.25**	**21.01**	**21.04**	**20.81**	**20.37**	**20.65**	**20.80**	**20.75**	**20.42**
Mining and Quarrying	3.20	3.02	3.02	2.98	2.90	2.90	2.79	2.77	2.42
o.w. Crude Oil	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manufacturing	10.98	10.92	10.94	10.78	10.49	10.35	10.24	9.15	7.94
Electricity	0.69	0.72	0.72	0.71	0.72	0.78	0.80	0.60	0.54
Water and Sewerage	0.98	0.92	0.91	0.91	0.88	1.06	1.26	1.04	0.80
Construction	5.40	5.43	5.45	5.42	5.38	5.56	5.71	7.19	8.72
Services	**48.81**	**49.20**	**49.26**	**48.58**	**47.88**	**48.12**	**48.80**	**50.20**	**48.61**
Trade; Repair of Vehicles, Household Goods	5.98	6.02	6.04	5.94	5.91	6.06	6.40	6.14	5.97
Hotels and Restaurants	4.66	4.70	4.75	4.70	4.71	4.87	5.02	5.56	5.99
Transport and Storage	12.97	13.11	13.20	13.11	12.97	13.09	13.24	13.09	11.38
Information and communication	2.56	2.59	2.62	2.61	2.60	2.64	2.71	2.35	2.17
Financial and Insurance Activities	2.59	2.60	2.62	2.60	2.57	2.60	2.66	3.40	3.80
Real Estate, Professional, Administrative & Support Service activities	5.19	5.19	5.21	5.14	5.06	5.08	5.13	4.68	4.13
Public Administration & Defence; Social Security	5.16	5.19	5.14	5.04	4.89	4.83	4.84	5.93	6.28
Education	4.89	4.98	4.86	4.74	4.42	4.20	3.68	3.93	3.95

Health and Social Work	1.10	1.04	1.07	1.04	1.14	1.24	1.40	1.42	1.33
Community, Social & Personal Service Activities	3.71	3.78	3.76	3.68	3.61	3.52	3.71	3.71	3.63

	2009	2010	2011	2012	2013	2014	2015	2016
Agriculture	**31.81**	**29.75**	**25.34**	**22.85**	**22.40**	**21.50**	**20.32**	**18.90**
Crops	23.63	21.71	19.07	17.17	17.43	0.03	15.68	14.46
Of which Cocoa	2.45	3.21	3.57	2.56	2.19	0.02	1.84	1.67
Livestock	2.04	2.01	1.80	1.59	1.35	0.00	1.21	1.17
Forestry and Logging	3.68	3.72	2.77	2.58	2.24	0.00	2.27	2.12
Fishing	2.45	2.31	1.70	1.51	1.38	0.00	1.15	1.15
Industry	**19.00**	**19.12**	**25.56**	**28.02**	**27.81**	**0.00**	**25.11**	**24.24**
Mining and Quarrying	2.08	2.33	8.40	9.54	9.42	0.02	5.33	4.20
o.w. Crude Oil	0.00	0.41	6.71	7.74	8.24	0.00	4.13	2.06
Manufacturing	6.95	6.78	6.88	5.84	5.32	0.00	4.84	4.65
Electricity	0.47	0.61	0.50	0.46	0.44	0.01	0.90	1.14
Water and Sewerage	0.69	0.85	0.84	0.70	0.63	0.00	0.59	0.51
Construction	8.82	8.54	8.94	11.48	12.01	0.00	13.46	13.74
Services	**49.19**	**51.13**	**49.10**	**49.13**	**49.79**	**0.01**	**54.56**	**56.86**
Trade; Repair of Vehicles, Household Goods	5.91	6.23	5.88	5.57	5.78	0.04	6.13	6.38
Hotels and Restaurants	6.16	5.98	5.38	4.82	5.82	0.01	5.83	5.94
Transport and Storage	10.54	10.55	10.74	11.02	11.24	0.00	13.01	13.28
Information and communication	1.84	1.92	1.77	2.18	1.74	0.01	2.69	3.28
Financial and Insurance Activities	4.34	5.16	4.42	4.73	6.52	0.00	8.93	9.40
Real Estate, Professional, Administrative & Support Service activities	4.10	4.48	4.64	4.80	3.86	0.00	3.93	4.04
Public Administration & Defence; Social Security	6.95	6.97	6.98	6.79	5.87	0.00	5.32	5.44
Education	4.22	4.33	4.13	4.25	3.60	0.00	3.70	4.01
Health and Social Work	1.44	1.55	1.30	1.26	1.06	0.00	1.19	1.41

Community, Social & Personal Service Activities	3.70	3.97	3.87	3.70	4.30	0.00	3.83	3.67

Source: Ghana Statistical Service