UNIVERSITY OF CAPE COAST

ASSESSMENT OF PETROLEUM REVENUE MANAGEMENT IN GHANA, FROM 2011 TO 2017

BY

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DECLARATION

Candidate's Declaration

I hereby declare that this dissertation is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature: ..... Date: .....

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Supervisor's Declaration

I hereby declare that the preparation and presentation of the dissertation were supervised in accordance with the guidelines on supervision of dissertation laid down by the University of Cape Coast.

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ABSTRACT

Ghana commenced the commercial production of oil in 2010 with the subsequent passage of the Petroleum Revenue Management Act, 2011 (Act 815) and the Income Tax Law to govern the management of the petroleum revenues. In spite of Act 815 as amended, Act 893 in 2015, regarding sustainable revenue management; government's expenditure from the Ghana Petroleum Fund on recurrent and non-capital items creates sources for concern. This study therefore, was set out to examine the various petroleum revenue sources in Ghana, their trends and proportions over a seven-year period (2011-2017). Secondary petroleum revenue data from the annual reports of the Ministry of Finance were subjected to descriptive statistics, frequencies, graphs, cross tabulations and content analysis. During the period under review, the operations of three oil fields such as the Jubilee, TEN and Saltpond fields had been identified. With respect to the provisions of Section 21(4), no further revenue allocations had been made into the Ghana Infrastructure Investment Fund after it received a total of US$6.92 million from the first TEN lifting in the first quarter of the 2017 budget. This, in addition to weakening the fundamentals of the economy has damning implications for other sectors of the economy as well. In other to encourage allocations into the GIIF, Section 21(4) can be amended to set a minimum cap of say 10% or 15% and also restrict the implementation of policies whose infrastructural needs have not been met by say 70 to 80 percent. This would boost public investment expenditure in the domestic market and increase development of other sectors in the economy, leading to direct or indirect income gains to supplement any marginal gains of Petroleum Holding Fund income (PHFI).

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DEDICATION

To my beloved late sister, Esene Ami Atokple

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LIST OF ACRONYMS

ABFA	Annual Budget Funding Amount
BOG	Bank of Ghana
BR	Benchmark Revenue
CAPEX	Capital expenditure (CAPEX)
CAPI	Carried and Participating Interest
CIT	Corporate Income Tax
GCAPI	Gas Carried and Participating Interest
GHF	Ghana Heritage Fund
GIIF	Ghana Infrastructure Investment Fund
GNPC	Ghana National Petroleum Corporation
GPF	Ghana Petroleum Fund
GR	Gas Royalties
GSF	Ghana Stabilization Fund
IOC	International Oil Company
IOLP	Interest on Late Payment
ITLOS	International Tribunal for the Law of the Sea
JCAPI	Jubilee Carried and Participating Interest
JR	Jubilee Royalties
MFEP	Ministry of Finance and Economic Planning
MOF	Ministry of Finance
NOC	National Oil Company
PA	Petroleum Agreement
PC	Petroleum Commission
PD	Price Differentials

PHF	Petroleum Holding Fund
PHFI	Petroleum Holding Fund Income
PIAC	Public Interest and Accountability Committee
PRMA	Petroleum Revenue Management Act 2011 (Act 815)
ROA	Return on Assets
ROE	Return on Equity
ROI	Return on Investment
ROS	Return on Sales
SOPCLR	Saltpond Royalties
SR	Surface Rentals
SWF	Sovereign Wealth Fund
TEN	Tweneboa-Enyenra-Ntomme
TENCAPI	Tweneboa-Enyenra-Ntomme Carried and Participating Interest
TENR	Tweneboa-Enyenra-Ntomme Royalties

CHAPTER ONE

INTRODUCTION

Background to the Study

This chapter provides the introduction of the study; it provides the reasons behind the study and possible objectives and significance of the study. It is the desire of almost all-natural resource rich countries to use proceeds from extracting their natural resources – crude oil, coal, steel, uranium, etc., to develop their economies (Hobenu, 2010). However, when the inflows of proceeds start, these same countries realize that managing the natural resource proceeds for sustainable economic development is not as easy as anticipated. Economists have tended to believe that economies of most resource rich countries grow slowly with the exception of few countries. This rather stems from the over reliance on the revenues from the resource sector with little/least emphasis on investments, such that any plunge in the revenues affect the economic growth significantly (Fasano, 2000). This is an indication of the fact that the prudent uses of proceeds from natural resources have implications for sustainable economic development (Auty, 2008: Hobenu, 2010).

In the year 2007, Ghana ended the long search for viable crude oil. The country even became more relaxed when it was proven that the oil reserve was in commercial quantities. Since the commencement of commercial production of oil in 2010, Ghana has emerged as a net producer of oil (Gatsi, 2012). Thereafter, petroleum/oil revenues have since been the major feature of every debate and talking point. Petroleum revenues have since 2011 become a feature of Ghana's Annual Budget. The revenues increased from US$444million in 2011 to US$542 million in 2012 to US$847 million in 2013 and US$978million

in 2014, largely resulting from increases in production and the marginal increases in the international oil prices (MFEP, 2015). Despite the huge inflow of these proceeds, the question still remains "what the monies have been used for?" The question is in tandem with the view of Ebrahim-zadeh (2003) that the imprudent expenditure and misappropriation of the natural resource funds/revenue could trigger inflation and may to a larger extent downsize the economy. It was against this background that in 2011 Ghana adopted fiscal rules for the distribution of petroleum revenues to the Ghana National Petroleum Corporation and, net to Annual Budget Funding Amount (ABFA) and Ghana Petroleum Funds (GPFs). These efforts aimed to drive better budget outcomes and equip Ghana's public finances with the means to manage the fiscal challenges often associated with becoming a resource-rich country.

According to the Ministry of Finance and Economic Planning's [MFEP] (2015) Annual Report on the petroleum funds, the parliament of Ghana following the commercial production of oil, passed the Petroleum Revenue Management Act (PRMA) 2011, (ACT 815) to govern the management of petroleum revenues. The Act defines the framework for accounting for crude oil production, petroleum receipts and expenditure from petroleum revenues. It also provides investment and savings rules. In particular, the Act made provisions for financing the National Oil Company (NOC), for transfers to the country's budget annually and for savings (Ghana Stabilization Fund [GSF] and Ghana Heritage Fund [GHF]). The purpose of GSF and GHF (together called the Ghana Petroleum Fund [GPF]) was to cushion the budget against oil price and production volatilities and for intergenerational equity objective respectively. Moreover, provision for GSF and GHF were made in order that

proceeds from the oil and gas sector would be well accounted for and they are also in line with the Sovereign Wealth Funds (SWFs). According to Truman (2007) the SWF may be a descriptive term for a pool of government-owned or government-controlled financial assets that includes some international asset. SWFs take many forms and are designed to achieve variety of economic and financial objectives.

Since the commencement of the Act 815, the savings (both GSF and GHF) have been invested in "qualifying instruments" mostly in Euroclear Bank bonds, mortgage for loans, amortizing of loans and other recurrent expenditures and by the end of 2013, the total balance of the savings stood at US$609.9 million. This therefore means that approximately US$1.2 billion have been spent. These expenditures were not in consonance with some of the provisions of the law and as a result made lots of people to talk about the way oil monies are being spent. This in a way cast doubts on the sustenance of the fund or put the development and sustenance in suspect. Both experts and politicians all talked about the way oil funds are spent. Almost all the talking points by experts and lay-men centred on how to sustain the flow of income, savings and also on how to invest to cater for the next generation.

Although the Act 815 had the objectives to (1) encourage a careful scaling up of spending in line with absorptive capacity constraints, (2) create a savings buffer to manage revenue volatility, (3) build an endowment for future generations and (4) use petroleum revenues to mobilize financing for development priorities. Like every law, the implementation of the Act 815 has faced some challenges including, interpretation of sections of the law, compensating errors, forecasting problems among others. This however made

way for the amendments of some sections of the Act to give rise to the new Act 893 passed by the parliament of Ghana in 2015 (MFEP, 2015). The amendments among other things, establishes a constant transfer of petroleum revenue (not less than 30% of the net government receipts) into the GPF, irrespective of the amount. It also affords the Minister for Finance the opportunity to revise the Benchmark Revenue when there is material evidence that price and/or output projections will not be attained.

In spite of all these amendments and interventions, the expenditure of government from the GPF on recurrent and non-capital items creates sources for concern. According to experts, it puts the sustainability of the fund and stability of the economy in jeopardy. Auty (2008) explained that when expenditures of governments of resource-rich countries do not follow best practices and laid down laws and processes, it is able to put the economy in serious disarray. It even becomes a conduit for the 'Dutch Disease'. Provisions in the amended Act 893 which affords the government the opportunity to relax the rigidities in the calculations of estimation of amounts to save. Thus it removed the ambiguities associated with PRMA and granted government the opportunity to spend on other activities or projects. This situation rather has fuelled debates on the fact that the continuous behaviour of government in this regard blights the economy and leaves in its wake a fragile, unstable and unsustainable economy.

Statement of the Problem

In the year 2007, Ghana discovered oil and gas in the jubilee field, which ended the nation's long search for the important commodity. When a nation discovers oil, it is in most cases considered as a form of blessing rather than

curse when it is managed very well for the benefit of the people in such countries (Auty, 2008). Globally petroleum revenue management is done through a well-crafted legal regime to avoid corruption, mismanagement and political mistrust. Many countries did not have proper legal framework to effectively manage the revenue (Gatsi, 2012).

Following the commercial production of oil, Parliament of Ghana passed the Petroleum Revenue Management Act, 2011 (Act 815), and the Income Tax Law to govern the management of petroleum revenues. The Act clearly outlines the framework that is needed for accounting for crude oil production, petroleum receipts and other expenditure from the petroleum revenues. As the Directive Principles of State Policy, Article 36 of the 1992 Constitution implies in a way how to measure the benefit of the oil for Ghanaians through the use of revenue in dealing with rural economic development and addressing imbalances across the country. Gatsi (2012) stipulates that, the approach to each country's management of the petroleum revenue is variously described as a model and no model is insulated from the challenges that the dynamics of time may bring. As a result, revenue from the production of the petroleum products must be analysed critically to examine the nature of the revenue generated and its sustainability.

Objectives of the Study

The aim of the study was to examine the nature of petroleum revenue from first the quarter of 2011 to the fourth quarter of 2017. Specific objectives formulated to attain the aim were to:

i. identify the sources of the petroleum revenue from 2011-2017.
ii. estimate the allocations of the petroleum revenue from 2011-2017.

iii. compute the investment expenditures of the petroleum revenue from 2011-2017.

iv. examine the nature of petroleum revenue from 2011-2017.

Research Questions

Consequently, the researcher formulates four main research questions in other to achieve the research objectives.

i. What are the sources of the petroleum revenues from 2011 to2017?

ii. How were petroleum revenues allocated from 2011 to 2017?

iii. How were the investment expenditures of the petroleum revenues computed from 2011 to 2017?

iv. What was the nature of petroleum revenues from 2011-2017?

Significance of the Study

The growing demand for natural resources is premised on the increase in the revenues from the resource. It is worth mentioning that almost all the natural resources are limited or non-renewable over time therefore the quest for good and proper strategies for the management of revenues accruing from natural resources (oil) cannot be overemphasized. This is because it brings peace and stability in the economy of the host country since natural resources are necessary for life and growth. It is not surprising that resource scarcity and unsustainable consumption sometimes contribute to conflicts and volatilities in many countries.

It is the expectation of the study to examine the management and sustainability of oil revenues in Ghana. The study also hopes to shed lights on the dynamics of inflow of revenue and expenditure of proceeds of the oil

revenue. The study would also assist in the adoption of appropriate revenue management strategies and a comprehensive long-term policy on sustenance and management in the oil industry.

Scope of the Study

The scope of the study was to examine management and sustenance of oil revenues in Ghana. The study also assessed the dynamics in the inflows and outflows of revenues from the oil proceeds. The study relied on secondary data, in the form of the petroleum revenue from the 2011 to 2017 fiscal year.

Organization of the Study

This study was organized into five chapters. Chapter one, the introduction of this research, presented the background to the study, statement of the problem, objectives of the study, significance of the study, scope of the study, and then the organization of the study. Chapter two reviewed related literature on the topic. The chapter highlighted the theoretical implored and empirical perspectives of the revenue management and the sustenance thereby. Chapter three elaborated the methodology adopted for the study. The methodological issues included: research design, the research instrument, data collection procedure and the analysis of data. Chapter four presented the results and discussions of study in line with the objectives. The final chapter, presented the summary, conclusions and recommendations from the study, and suggestions of areas for further research.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter covers a review of literature on the nature of petroleum revenue management in Ghana. The financial risk theories were contextualized. The Financial Management Act 815 as amended by Act 893, the 1992 Constitution of Ghana and the theories of capital expenditure were discussed for this study. Finally, the empirical studies in the financial risks managements, expenditure management and sustainability were defined and reviewed.

The discovery of natural resource such as oil is very important for the development of any nation. When it comes to economic growth and development, revenue from oil could help in the development of the economy. The revenue that is accrued from the discovery of oil is huge and nations that have discovered this natural resource must utilize the revenue adequately for their development. Edame & Efefiom (2013), in an earlier study, indicated that the discovery of oil in Nigeria was a blessing to the economy because it brought about economic growth and development of the nation as compared to the period when the oil had not been discovered. The researchers claimed that the oil sector through the petroleum revenue provided jobs for the people, engaged manpower development, foreign exchange earnings and many other benefits, all to the development of the economy. From their study, it could be deduced that when measures are put in place for the discovery and management of oil, there would be massive economic transformation especially in developing countries, including Ghana. However, most leaders as a result of greed and selfish interest, amass wealth rather than investing the money generated from

the oil in the development of their national economies. When leaders who are managing the affairs of the nation resort to this negative attitude, the discovery and production of oil in the country becomes a curse rather than a blessing to the nation.

Most Asian countries such as Thailand, Malaysia, China, India and Indonesia were far behind Nigeria in terms of Gross Domestic Product per capita as at 1970. In those days that Nigeria started exploration of oil, there was not much transformation in the economy. Today, these Asian countries mentioned above, can boast of economic transformation, to the extent of even exporting human capital to most parts of the world. They are now major players in the world of business and technology even though these countries have not got much oil as compared to Nigeria (Sanusi, 2010). This could be attributed to the kind of leaderships we have in Africa. Most leaders are self-centred and do not hold the nations at heart but rather what they could accumulate for themselves and their families.

A study carried out by Ablo (2015), indicated that with over one hundred million barrels export of crude oil, cocoa had been displaced to the second most important export commodity in Ghana. This is positive and must have impact on the economy of Ghana. In the year 2011, oil revenue towards the Gross Domestic Product (GDP) was unprecedented and contributed heavily to the GDP. With the expected increase in oil production in Ghana due to the discovery of new commercial wells, Ghanaians want to know how the revenue generated from the oil is been managed and used for the development of the economy.

Theoretical Review

Several investment theories and principles have been put forward on petroleum management. This section reviews some of the theories that link financial sustainability and capital expenditure. These include, portfolio theory, social contract and legitimacy rules and stewardship and agency theory.

Portfolio theory

Modern portfolio theory (MPT) is a theory on how risk-averse investors can construct portfolios to optimize or maximize expected return based on a given level of market risk, emphasizing that risk is an inherent part of higher reward (Markowitz, 1991).

Portfolio theory studies the behaviour of an optimizing investor. This theory differs from that of the theory of the consumer or firm in the following ways; first, it centres on investors rather than the consumers and the manufacturing firms. Secondly, it centres on economic agents who act under uncertainty. It is a theory which can be used to direct practice, at least by large (usually institutional investors with sufficient computer and database resources (Markowitz, 1991). Practically, there is a time lag between the decision to produce, the time of production and the time of sale. Hence, the selling price of the product may differ from estimated price at the time when production decision was made. This uncertainty of eventual sales price is important in actual production planning but, quite reasonably is ignored in classical economic models.

According to Markowitz (1991), uncertainty cannot be dismissed so easily in the analysis of optimizing investor behaviour. An investor with market knowledge of certain future returns would invest in only one security, namely

the one with the highest future return. If several securities had the same, highest, future return then the investor would be indifferent between any of these, or any combination of these.

Social contract and legitimacy rules

According to Bowles (1998), a contract is "the mutual transferring of right" as such the social contract is the agreement by which individuals mutually transfer their natural right.

Locke (2005) defended in the two treatises of government the claim that men are by nature free and equal against claims that God had made all people naturally subject to a monarch, for example, the right to life, liberty, and property independent of the laws of any particular society.

Social contract can then be said to be the voluntary agreement among individuals by which organized society is brought into being and invested with the right to secure mutual protection and welfare or to regulate the relations amongst its members.

Suchman (1995) in his article, "Managing Legitimacy: Strategic and Institutional Approaches" posits legitimacy as 'a generalized perception or assumption that the actions of an entity are desirable, proper, appropriate within some socially constructed system of norms, values, beliefs, and definitions."

Legitimation or Legitimization is the act of providing legitimacy. In the social sciences, it is referred to as the process whereby an act, process, or ideology becomes legitimate by its attachment to norms and values within a given society. Otherwise, in political science, legitimacy is the right and acceptance of an authority, usually a governing law or regime.

Legitimacy gap as an expectancy gap indicates a discrepancy between an organization's actions and society's expectations of this organization (Carroll & Shabana, 2010).

The problem of Constitutional legitimacy is to establish why anyone should obey the command of a constitutionally-valid law. A law making system is legitimate if there is a prima facie duty to obey the laws it makes. Neither "consent of the governed" nor "benefits received" justifies obedience. A written constitution should be assessed as one component of a law making system to the extent, a particular Constitution establishes law making procedures that adequately assure the justice of enacted laws. It is legitimate even if it has not been consented to by the people. This does not assume any particular theory of Justice but rather is intermediate between the concept of justice and concept of legal validity.

Notwithstanding this, legitimacy is important for all regimes as it sustains political stability by establishing reasonableness of a regime, or say provide reason for the regime to exist 'legitimacy belief of the people'.

Stewardship and agency theory

The Agency theory is used to understand the relationships between agents and principals. The agent represents the principal in a particular business transaction and is expected to represent the best interests of the principal without regard for self-interest. Agency theory is concerned with resolving problems that can exist in agency relationships due to unaligned goals or different aversion levels to risk. Hence, providing; (a) unique insight into information systems, outcome uncertainty, incentives and risks and (b) is an empirically valid perspective particularly when coupled with complementary perspectives.

Stewardship theory, on the other hand, posits that managers, left on their own, will act as responsible stewards of the assets they control. As an alternative view of agency theory, which assumes managers act in their own self-interest at the expense of shareholders, the theory specifies certain mechanisms that reduce agency loss such as levels of benefits and also managers' incentive schemes by rewarding them financially or offering shares that align financial interest of executives to motivate them for better performance. A good example, is a president practising a governing style based on belief and with the duty to do whatever is necessary in national interest, unless prohibited by the Constitution. The government of Ghana recently restructured the priority areas of the Annual Budget Funding Amount (ABFA) which is constitutional.

According to Donaldson and Davis (1991), Agency theory argues that shareholders' interests require protection by separation of incumbency of roles of Board Chair and CEO. Stewardship theory on the other hand, argues that shareholders' interests are maximised by shared incumbency of these roles. Results of an empirical test fail to support agency theory and provide some support for stewardship theory.

Sovereign Wealth Fund (SWF)

A Sovereign Wealth Fund (SWF) consists of pools of money derived from a country's reserves, set aside for investment purposes to benefit the country's economy and citizens (Truman, 2010). This SWF or Sovereign Investment Fund is a state-owned investment fund that invests in real and financial assets such as stocks, bonds, real estate, precious metals, or in alternative investments such as private equity fund or hedge funds. Sovereign Wealth Funds invest globally.

According to Jen (2007), a SWF is a government investment vehicle that invests in foreign currency denominated assets and whose management is distinct from that of official reserves. How the managers operate the funds, both in terms of their portfolio allocation and the way in which they communicate and interact with the private sector will have great implications for the financial markets. With the exception of the Norges Bank, Norway, most of the SWFs are not transparent, in that they do not reveal either, (1) their investment objectives and strategies or (2) their activities and performance. The most important determinant of the level of transparency an SWF chooses to have may be their obligations to the ultimate 'shareholders,' that is, the public. In a democratic society such as Norway, accountability and transparency are closely intertwined, and the Norges Bank does not have options other than to be ultra-transparent, at the expense of some side effects of being very transparent.

However, the situation may be quite different in other countries. Without the pressure from the populace to be transparent, the side-effects of being transparent could discourage many of the SWFs from being overly transparent. Having said this, there are two other arguments in favour of greater transparency. First, transparency could help deal with corruption. Second, greater transparency could help recipient countries accept capital inflows and refrain from imposing barriers to investment. The key here is for the recipient countries to feel equally comfortable with foreign state or private funds. Most countries don't have major issues with foreign investment, but many are sensitive to foreign state investment as such being as transparent as private funds could help the market access of SWFs. There may be a role for the International Monetary Fund (IMF), in helping to guide the SWFs through a set

of recommended 'best practices'. This could help the SWFs being welcomed as a new class of investors.

Some Principles of Oil Revenue Management

The framework of petroleum revenue management must deal with issues relating to intergenerational legacy principles and investment in the interest of the present generation through the annual budget in areas considered as public investment expenditure and not consumption. Issues relating to mitigating funds or buffer in times of general economic difficulties must also be considered by management of petroleum revenue.

Issues of governance

In the quest to find solutions to perceived agency problem, governance issues arise. Good governance ensures consolidation of managerial legitimacy with project managers acting within acceptable social contracts. Many stakeholders are identified in the management of oil and gas resources which includes but not limited to citizens, civil society groups and political parties who demand accountability, disclosure and transparency in managing petroleum revenue in general and petroleum revenue funds in particular (Gatsi, 2012).

In the case of Ghana, a content analysis reveals that its model to managing petroleum revenue is a hybrid one that drew lessons from star ones such as Alaska and Norway (Gatsi, 2012). Article 257(6) of the 1992 Constitution, to a large extent entrusts the ownership of all oil and gas resources in their natural state in the hands of the Republic of Ghana. The president on the other hand, holds these resources in trust for the people of Ghana implying the

state as principal and International oil companies as agents from the principal-agent perspective.

However, in managing the petroleum funds, the state becomes the agent in whose hands the citizens have entrusted all forms of petroleum revenue collected while the citizens become the principal in the principal-agent discourse. The state again is represented by a number of officers and institutions such as the Minister of Finance, Ghana Revenue Authority, Bank of Ghana who manages the petroleum account, Investment Advisory Committee which provides professional advice to the Minister of Finance as to how the Stabilization and Heritage Funds are to be invested and Public Interest and Accountability Committee who is expected to monitor and report on the overall management of oil and gas in Ghana. Hence, governance of the petroleum fund is about ensuring maximum collection of all petroleum revenue and allocating same in accordance with principles outlined in the law in a responsible, accountable and transparent manner so that both present and future generations derive enhanced benefits.

Transparency and accountability

According to Gatsi (2017), transparency implies that managers of the revenue should make every effort to let the public know about how much has been collected, where it is kept, and how it is being used. Section (8) provides the obligations of the Minister of Finance. Firstly, the records of petroleum receipts in whatever form shall simultaneously be published by the Minister in the Gazette and in at least two state owned daily newspapers, within thirty calendar days after the end of the applicable quarter. Secondly, the information required to be made public shall also be published online on the website of the

Ministry and presented to parliament on the date of the Gazette publication. Thirdly, the Minister shall publish the total petroleum output lifted and the reference price in the same manner as provided in subsections (1) and (2).

Hedging Practices and Instruments

The first phase in financial risk management and hedging process is to identify and evaluate the risk exposure, which can be a difficult task (Okochi, 2008). Identifying the risks is challenging as companies are exposed to a portfolio of risks which contains both companies' specific risks and risks that are common to all firms in the economy. When analysing financial risks exposure meant to be hedged, companies must identify those risks that are subject to asset prices such as interest rates, exchange rates and commodity prices. Companies use hedging instruments as derivatives in order to handle and reduce the risks they must face in their business. Advances in financial theory have created wide variety of hedging instruments such as derivatives and made them easily available for market participants.

Financial performance

Financial performance is a measure of companies' or countries' policies and operations in monetary terms. It is a general measure of a firm's overall operation health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. There are many different ways to measure a companies' or countries' financial performance. This may be reflected in the firm's return on investment (ROI), return on assets (ROA), value added, among others and is a

subjective measure of how a firm can use assets from its primary mode of business and generate revenues (Iwata & Okada, 2011).

The financial industry like other industries is in business to earn profits by selling its products. To maximize the profits, financial institutions or exporting countries develop new products to satisfy their own needs as well as those of their customers. In other words, innovation-which can be extremely beneficial to the economy is driven by the desire to get or stay rich. This view of the innovation process leads to the following simple analysis: A change in the financial environment will stimulate a search by firms/countries for innovations that are likely to be profitable. Companies/countries had found that many of the old ways of doing business were no longer profitable; the products and services they had been offering to the market were no longer selling (McNamee & Selim, 1999). To survive in the new economic environment, oil companies have to research and develop new products and services that would mitigate financial risks and improve profitability (Ball & Shivakumar, 2008).

Various empirical studies in their review paper using content analysis, reveal that financial measures such as stock market returns, Tobin's Q, and accounting profits ratios such as Return on Assets (ROA), Return on Equity (ROE), and Return on Sales (ROS) are targeted. Most scholars choose ROE, ROA, etc., as important financial variables in their studies (Iwata & Okada, 2011; Hart & Ahuja, 1996).

These accounting-based measures emphasize the firm's historical performance. Stock market-based measures refer to investors' evaluations and expectations of firms. However, these measures may not reflect the real evaluation if there is asymmetric information (Scholtens, 2008). In the

Ghanaian oil and gas industry, firms would face all types of stakeholders, and it is not feasible for them to only focus on investors.

Financial risk management

Financial risk or sustainability is only one category of a broad field of financial management. Furthermore, financial sustainability can be classified into three subclasses such as, credit risk, liquidity risk and market risk. Market risk can be classified into four broad classes; foreign currency, interest rate, commodity, and equity risk. For Financial Risk Management (FRM), there are many different kinds of definitions with no globally accepted one (Yakup & Asli, 2010). It is such a complex and extensive concept, so much so that, even the experts in the field tend to specialise in just an aspect of it.

However, Ekwall (2010) with a relatively narrow view of risk management, defines it as the risk handling process. Furthermore, Jansson and Norrman (2004) think, risk management leads to avoiding, reducing, transferring, sharing or taking the risk. On the other hand, risk management can be considered as a very broad term due to the wide range of risks and thus there are several categories of risk management as financial risk management, operational risk management and supply chain risk management. Jansson and Norrman (2004) define risk management process as focusing on understanding the risks, and minimizing their impact.

Definitions of Sustainability

'Sustainability cannot be simply a 'green' or 'environmental' concern, important though 'environmental' aspects of sustainability are. A truly sustainable society is one where wider questions of social needs and welfare,

and economic opportunity are integrally related to environmental limits imposed by supporting ecosystems' (Agyeman et al., 2002 cited in Agyeman & Evans 2004). Dyllick and Hockerts (2002) defined corporate sustainability as 'meeting the needs of a firm's direct and indirect stakeholders (shareholders, employees, clients, pressure group and communities), without compromising its ability to meet the needs of future stakeholders as well. Sustainability is also defined as the need to ensure better quality of life for all, now and into the future, in a just equitable manner whilst living within the limits of supporting ecosystem (Agyeman et al., 2003 cited in Agyeman and Evans, 2004).

Sustainability again is defined as developments that improve economic efficiency, protect and restore ecological systems, and enhance the well-being of all peoples (IISC, 2003 cited in Du Pisani, 2006). Sikdar (2003) defined sustainability as 'a wise balance among economic development, environmental stewardship and social equity'. According to (WBCSD 2003 cited in Azapagic, 2003) Sustainability is the business commitment to contribute to sustainable economic development, working with employees, their families, the local community, and the society to improve their quality of life .Sustainability was also defined as creating shareholders and societal value while reducing the environmental footprint (Dupont, 2004 cited in Tebo 2005).

Sustainability is also defined as '. . . equal weightings for economic stability, ecological compatibility and social equilibrium's (Goncz et al., 2007 cited in Carter and Dale, 2008). Labuschagne, Brent & Van-Erck (2005),concluded that business sustainability is 'adopting business strategies and activities that meet the needs of the enterprise and its stakeholders today

while protecting, sustaining and enhancing the human and natural resources that will be needed in the future'.

According to Figge & Hahn (2005), organisations pursue sustainability by actively managing and enhancing five assets such as natural capital (the environment), human capital (people), social capital (social relationships and structures), manufactured capital (fixed assets) and financial capital (profit, sales, shares, and cash). Aras and Crowther (2009) stressed that sustainability is 'development that attempts to bridge the gap between economic growth and environmental protection, while taking into account other issues traditionally associated with development. Brinkerhoff & Jacob (1999) argued that if a concept is contestable, it does not mean it has no meaning at all - words have meaning when there is a consensus among a language community about what they mean.

Sustainability has many definitions because it depends on economic, environmental and social components and each may have its own definitions (Brown & Ulgiati, 1997); and because it is directly linked to different disciplines and each discipline may have its definition (Kidd, 1992). The adopted definition for this study is that of Labuschagne et al. (2005) which defines financial sustainability as 'adopting business strategies and activities that meet the needs of the enterprise and its stakeholders today while protecting, sustaining and enhancing the human and natural resources that will be needed in the future.

Capital Expenditure

Capital expenditure (CAPEX) indicates critical company's capital budgeting decisions such as equipment replacement, plant expansion etc. The significance of capital expenditure to company or government prosperity is well

known and established in economics, accounting and finance literature (Kerstein & Kim, 1995). It causes positive effects on two major levels. Corporate capital expenditures at the macroeconomic level, are an important subcomponent of national GDP, business cycles, economic growth and aggregate demand (Liang, Lin & Hsu, 2013). At the microeconomic level, Capital Expenditure determines strategic projects, development plans and company's production release (Bromiley & Rau, 2014).

However, company's policy and decision processes lend confidence to the abilities that capital expenditure levels depend on influences of insider ownership (Ahmad, Ahmed, Mushtaq, & Nadeem, 2014). These apply to the government expenditure trend system which could be treated as corporate financing dynamics and financial sustainability. The Ghana's government economic management in the oil and gas sector is a hybrid of well performing Funds such as Alaska and Norway. Its hybrid nature lends it to study in context of its content.

Empirical Studies on Sovereign Wealth Funds

Some countries have chalked successes in the creation of SWFs. A good example is the Norway's Government Pension Fund Global (GPFG) which by 2011 was ranked the largest investor in the world (Barbary and Bortolotti, 2011). It has for some time been ranked the second-largest sovereign wealth fund, behind the Abu Dhabi Investment Authority whose market value is not publicised (SWFI, 2011 as cited in Chambers, Dimson & Ilmanen, 2012). Only 15 years earlier, it had been the smallest. In a short period, this fast-growing fund has become an exemplar for investors around the world. The Norway model has become a coherent and compelling alternative to the Yale model for

endowment investment. The transition from zero to hero has not been smooth, and there has been turmoil along the way. Norway is among the world's most visible investors, and consequently the Fund's rollercoaster experience has been scrutinised closely. Short-term underperformance during the recent financial crisis provoked widespread soul-searching and criticism within Norway. Yet the GPFG fared better through the 2007-08 turbulence than most institutional investors, and by 2010 it had fully recovered the absolute and relative losses it experienced over that period. Although this outcome was not preordained, the Fund's long horizon and low spending needs equipped it exceptionally well to bear short-term losses. The Fund has enhanced Norway's reputation as an investor. While Yale is often cited as a thought leader for endowment management (Swensen, 2000), high esteem is nowadays expressed for Norway's management of its wealth. In line with the Fund's formidable reputation in terms of structure, governance, transparency, and responsible investing, it has been awarded the highest ranking, a score of 97%, among 53 sovereign wealth funds in 37 countries (Truman, 2010).

However, among countries in which the Norwegian template has been promoted are several whose political and institutional dynamics vary significantly from those prevailing in Norway. In Nigeria, where the oil industry has been beset for decades by inefficiency and corruption, legislation is being considered that would create a separation of institutional roles strikingly parallel to that of Norway, with a National Petroleum Directorate setting policy (in the manner of Norway's Ministry of Petroleum and Energy), an independent commercial NOC analogous to Norway's Statoil, and an autonomous regulator in the mold of the Norwegian Petroleum Directorate (NPD). In new petroleum

frontiers across Asia and Africa, governments are examining the Norwegian Model as a means of promoting dynamism and good governance amidst heavy exploration and nascent production. In Latin American countries such as Brazil and Columbia, policy makers have parceled out regulatory functions to autonomous agencies after decades of operation in which NOCs largely filled those roles. And in research and technical assistance projects the world, advisors from international institutions and donor governments – including Norway itself – treat a strict separation of functions as something of a 'sine qua non' of effective oil sector governance (Heller, Hults, & Thurber, 2011).

Petroleum Revenue Management Act, 2011 (Act 815), as amended (Act 893)

Section 5 of Act 815 amended, provides that the PRMA, 2011 (Act 815) referred to in this Act as the principal enactment is amended in section 5 by the substitution of for subsection (2) of "In other to preserve revenue streams from petroleum and ensure the object of this Act, there shall not be any borrowing against the petroleum reserves."

The PRMA identifies the Petroleum Holding Fund, the Stabilisation Fund and Heritage Fund as the main funds in managing petroleum revenue in Ghana. The Annual Budget Funding Amount (ABFA) is treated as a fund due to the allocations directed by the Act.

The PRMA authorizes the Ministry of Finance (MOF) and subsidiaries to set Benchmark Revenue (BR) price for petroleum revenue accounting to balance expenditure to accommodate the petroleum receipts. The PRMA posits some BR rigidity which sometimes causes budgetary unbalance. The case in

point was envisaged at the time of laying the 2015 Budget in Parliament in November 2014. However, the rigidity in the PRMA on the estimation of the BR prevented a revision to the BR price of US$99.38 per barrel, which was estimated in line with the formula set in the First Schedule of the PRMA. The Ministry, therefore, presented a proposal to allow for some flexibility in the determination of the BR to allow for changes at the time of laying the Budget or during the Mid-Year review. The continuing situation justified the initiative to amend the PRMA, which was passed by Parliament and assented to by H. E. the President for the amended Act 893.

Among other things, the amended Act 893 allowed for a revision to the BR when there is material evidence that price and/or output projections may not be achieved. This allowed the Ministry to revise the BR price from US$99.38 per barrel to US$57 per barrel during the Mid-Year Review in July 2015. In addition to the PRMA amendments being passed, the year 2015 became a watershed year for a lot of things. The year marked the first full year of domestic gas production, which was processed by the Gas Processing Plant and fed to power stations in the country. The year 2015 also witnessed the signing of the contracts pertaining to the nation's flagship gas project, the Sankofa-Gye Nyame Field, to make way for the production of crude oil and large volumes of gas to boost power generation in Ghana-the project commenced in 2017. The year also witnessed the ruling by the International Tribunal for the Law of the Sea (ITLOS), which allowed Ghana to continue developing the Tweneboa, Enyenra and Ntomme (TEN) Field, while barring any further drilling in the disputed area with Cote d'Ivoire. TEN's first oil came in August 2016.

Government has or is committed to ensuring transparency in the upstream-to-midstream petroleum sector by making full disclosure on receipts, payments and management of petroleum revenue by the PRMA. The Ministry of Finance and all other stakeholders in the sector have been publishing periodic reports to update Ghanaians on developments in the sector. In furtherance of this objective, the Ministry developed a roadmap for developing the PRMA regulations to remove any ambiguities associated with the PRMA.

Petroleum Income Tax Act, 2015 (Act 896)

The Petroleum income tax came into action under the Petroleum Income Tax Law, 1987 (PNDCL 188). However, a new income tax law, Income Tax Act, 2015 (Act 896) which was promulgated in 2015 covers all matters in relation to the taxation of petroleum in Ghana in PART VI. The law spans Sections 65 to 76 of ACT 896.

Revenue from Petroleum includes but not limited to corporate tax related to the production of oil and gas, revenue from the sale of the share of the host nations' in the production including surface rentals.

Petroleum Commission (PC)

The section 2 of the Act 821 provides the objective of the Commission as regulating and managing the unitization of petroleum resources and to co-ordinate the policies in relation to them. Given the functions of the petroleum Commission as stipulated in section 3 of Act 821, it is clear that the Commission is the upstream regulator who co-ordinates related policies. The responsibilities of the Minister are the core mandates of the Petroleum Commission as such it

is required of the Minister to depend on the regulator to perform such roles assigned by the Petroleum Exploration and Production Law.

Revenue Allocations in the Oil and Gas Sector

Petroleum funds are established to ensure effective oil and gas revenue management. Also, these funds serve as significant governance and investment mechanisms to mitigate petroleum revenue volatility and maximise the benefits of depletable petroleum resources in the interest of the citizens of the resource-rich nations.

According to (Gatsi 2012) the funds must be flexible in nature, allocate some portion to finance the current annual national budget and provide for future generations. These funds when established on good governance principles with strong institutional structures meet their expectations.

Petroleum holding fund (PHF)

The Petroleum Holding Fund only receives petroleum revenue for subsequent transfer and as such the fund shall not be treated as part of the normal tax revenue. The Section 5(1) of (Act 815) stipulates the prohibited use of the Petroleum Holding Fund. Also, Section 11(1) of the PRMA, stipulates that the Ghana Stabilisation Fund and the Ghana Heritage Fund are to be collectively called the Ghana Petroleum Funds (GPF).

However, Section 7 of Act 815 amended, stipulates that the principal enactment is amended by the substitution for section 7 of "Carried and participating interest. Revenue due from the direct or indirect participation of the Republic in petroleum operations, including the carried and participating interest, shall be paid into the Petroleum Holding Fund."

Section 16 of Act 815 amended stipulates that disbursement from the Petroleum Holding Fund (PHF) shall be made in the following order of priority and only: (a) to a national oil company for the purposes of subsection (2); (b) to the Consolidated Fund in support of the national budget; (c) to the GPFs for purposes of savings and investments; and (d) for exceptional purposes according to the provisions of this Act. For the purposes of subsection (4) The Minister shall ensure that the Bank of Ghana transfers to a national oil company, the relevant portion of the petroleum revenue due to that national oil company under subsection (2) not later than three working days after the receipt of petroleum revenue into the Petroleum Holding Fund".

Ghana national petroleum corporation (GNPC)

Ghana National Petroleum Corporation (GNPC) was established under the PNDC Law 64 and made responsible for managing the resources in Ghana. As the national oil company for Ghana, it is a special purpose vehicle with the core mandate of co-investing with IOC's and in some cases act alone so as to increase the direct participation of the state in the oil and gas industry.

The coming into force of Petroleum Commission as a regulator necessitates that GNPC to be well resourced with managerial, technological support and funding to focus and perform its current core mandate.

Annual budget funding amount (ABFA)

Section 21(4) of Act 815 amended explains that for any financial year, "A minimum of 70% of the Annual Budget Funding Amount shall be used for public investment expenditure consistent with the long-term national development plan and with subsection (3) and (5).

Section 11(2) suggests that financing the ABFA is paramount to investment in strategic infrastructure for current and future generations. Section 21(4) states that not more than 70% of the benchmark revenue shall be allocated to the ABFA and that a minimum of 70% of the disbursement of the ABFA priority areas shall be for public investment expenditure. This implies the greatest priority of the PHF is to finance the ABFA as it caters both for the present financial and infrastructural needs and also future generational needs.

Ghana infrastructure investment fund (GIIF)

The Ghana Infrastructure Investment Fund has been established pursuant to The Ghana Infrastructure Investment (GIIF) Act, Act 877 of 2014. Section 21(4) of Act 815 amended stipulates that, "for any financial year, (b) a maximum of 25% of the amount allocated for public investment expenditure under paragraph (a) shall be allocated to the GIIF for the purpose of infrastructure development; and (c) the amount allocated to the GIIF under paragraph (b) shall be included in the national budget and approved by parliament. Thus, the mandate of the fund is to provide financial resource to manage, coordinate and invest in a diversified portfolio of infrastructure projects in Ghana for national development. Section 48 of Act 815 amended directs the Minister to provide a report describing the stage of implementation of the programmed activities funded by and the expenditure incurred on the activities covered by the Annual Budget Funding Amount, and indicating the portion of the Annual Budget Funding Amount allocated to the Ghana Infrastructure Investment Fund in the financial year of the report.

Public interest and accountability committee (PIAC)

The Public Interest and Accountability Committee is a statutory committee established under Section 51 of the PRMA, 2011 (Act 815) with the following objectives provided in Section 52: (a) monitoring and evaluating compliance with the Act by the Government and other relevant institutions in the management and use of petroleum revenues, (b) providing a platform for public debate on spending prospects of petroleum revenues in line with developments priorities, and (c) providing an Independent assessment of the management and use of revenues. Thus, the committee is required to issue a report every six month to keep track of how petroleum revenues received during such period are being used and accounted for by the government and various state agencies which have responsibilities in managing the resource. The Amended Section 57(1) stipulates that the Accountability Committee submit a budget annually to the Minister for inclusion in the ABFA, (2) as determined by the Minister.

Ghana stabilization fund (GSF)

The Section 9(2) of Act 815 states the objective of the fund as to cushion the impact on or sustain public investment expenditure capacity during periods of unanticipated petroleum revenue shortfalls. The interest of the Fund as the ABFA seems to be skewed towards satisfying the needs of present generation than future generations as it finances public investment expenditure which has lasting effects on the socio-economic development of the country.

The Section 12 of Act 815 as amended Act 893, states (a) the substitution for subsection (5) of (5) A transfer from the Ghana Stabilisation Fund shall only be done for the purposes of: alleviating shortfalls in actual

petroleum revenue in accordance with subsection (1) to (4); and a transfer into the Contingency Fund and for debt repayment in accordance with section 23(4) and 23(5)'; and (b) a new subsection (6) 'that a withdrawal from the Ghana Stabilisation Fund for the purpose of alleviating a shortfall in actual petroleum revenue shall not exceed 75% of the balance standing to the credit of the Ghana Stabilisation Fund at the beginning of the financial year".

Ghana heritage fund (GHF)

The objective of the fund is to serve as an endowment to enable strategic development for the future generations at a time when petroleum reserves are completely depleted. However, Section 10(4) provides that fifteen years after the commencement of the PRMA in 2011, which is after the year 2026, restrictions on the interests of the fund can be reviewed by parliament. This study therefore carried out expenditure disaggregation analyses based on the content of PRMA and explored the financial sustainability options of the country if they are to take a particular path and oil revenue management.

CHAPTER THREE

RESEARCH METHODOLOGY

Introduction

The chapter presents the methodology for the study detailing the information on how and why certain decisions were taken. The chapter is organized into the following: research design, the empirical model, description of the data sources and the data analysis.

Research Design

The study made use of the qualitative approach to research using Content analysis. According to (Gatsi 2012), the content analysis entails the study of recorded information on a subject matter using the number of words, specific words and coding. The study made use of the technique as it could be subjective or objective based on benchmark variables.

A type of qualitative content technique known as a directed approach Gatsi (2012) was adopted where the analyses started with theories or relevant research findings as guidance for research codes. In his earlier studies on Petroleum Funds, Gatsi (2012), based the analysis on whether there were proper governance structures, whether the investment of the fund took into account diversification and risk reduction and adhered to international best practice by using the inherent and subjective meaning embedded in directives provided by sections of the Petroleum Revenue Management Act. This approach was adopted in this study in order to establish the fact that proper oil revenue management is sustainable or to find the relationship that exists between revenue management and its sustainability. Secondly, there was also the need

to describe how oil money had been managed from the inception till date and finally to assess the dynamics of flow (inflow and outflow) of oil revenues in Ghana.

Source of Data

The study employed secondary data since the primary data collection might not be enough to serve the objectives set for this study (Gatsi, 2012). The data was sourced from the Annual Reports of the Ministry of Finance and the Bank of Ghana since the two outfits are responsible for safe keeping and the investment expenditure of the oil proceeds by the Government.

According to the Petroleum Revenue Management Act, 2011 (Act 815), as amended (Act 893), the Annual Report on the Petroleum Funds since 2015 are to be prepared in line with Section 48 of the Act, and are to cover the collection, utilisation and management of petroleum revenues during the first three quarters of each year. The reports are to be submitted together with the Budget Statements and Economic Policy to Parliament. These Annual Report on the Petroleum Funds must, highlight the events in the upstream petroleum sector, including, the activities of the Ministry of Petroleum, Petroleum Commission, Ghana National Petroleum Corporation (GNPC) and its subsidiaries. They also account for the petroleum revenue received during the period and the returns on the Ghana Petroleum Funds.

Data Collection

Data on the proceeds and disbursement or allocations of petroleum funds (net transfers to GNPC and Net GOG receipts) were culled out from the published information primarily from the Annual Reports of the Petroleum

Fund submitted to Parliament. Since the inception of large scale oil exploration and production in Ghana, these reports have been published annually. In this regard, the data were taken from 2011 to 2017 fiscal year.

The sets of data on the Revenue Sources from the upstream and midstream of the Oil and Gas Sector included; Royalty, Carried Interest, Additional Interest, Petroleum Income tax, Additional oil entitlement, Surface rentals, Technology allowance and Training allowance.

Royalty

Royalty is the percentage of gross production entitled to the resource owner without contributing to the cost of production. It may be received in oil or money as stipulated in the PRMA, 2011 (Act 815). In Ghana's case, royalty rates ranges from 5% to 10% but depends on the negotiation capabilities of each contractor. The Petroleum Agreement (PA) indicates payable royalty for gas at a rate of 3%.

Carried interest

The PRMA, explains this as the equity interest given to the state to participate in sharing petroleum revenue. Petroleum Commission (PC) is entitled to a 10% revenue cut of any participating interest.

Additional interest

The state through GNPC by the oil and gas laws allows an acquisition of a maximum of 10% of any distribution of revenue. Upon discovery of oil in commercial quantities by the IOC, this rate is granted the state when through its

vehicle GNPC it informs the IOC within 90days of the IOC announcing this to the Minister of Energy

Petroleum income tax

The petroleum income tax is fundamentally the tax payable on the income gained from oil and gas production. This includes, the corporate tax, withholding tax of subcontractors and employment tax.

Additional oil entitlement

The additional oil entitlement is an additional profit tax based on the rate of return achieved against the targeted rate of return. That is when the Contractor achieves a determined after tax real rate.

Surface rentals

This is the amount paid by oil companies by law to the state for surface rentals of blocks applied for and assigned to them for petroleum operations. An amount of US$30 per sq. Km is paid for the initial exploration period, UD$50 per sq. Km is paid for 1st extension period, US$75 per sq. Km is paid for 2nd extension period and finally a US$100 per sq. Km is paid for development and Production Area which include the following government property, public lands and specific services provided by public enterprises (at not more than "commercial rates").

Technology allowance

It is a onetime payment demanded of the IOCs to assist GNPC procure plants, equipment and machinery required for petroleum operations.

Training allowance

A regular annual payment is demanded of the IOCs to support GNPC in human resource capacity building to be adept in its mandated activity.

Ghana national petroleum corporation (GNPC)

Transfers are regularly made to the National Oil Company (GNPC) to invest the interest of the Republic of Ghana in the activities of oil production.

Annual budget funding amount (ABFA)

Allocations are regularly made to into this fund to maximise the rate of economic development, to promote equality of economic opportunity with a view to ensure the well-being of citizens and to undertake even and balanced development of the regions.

Ghana stabilisation fund (GSF)

Allocations are regularly transferred into this fund to cater for expenditure smoothening, savings for future generations and financing specific projects.

Ghana heritage fund (GHF)

Allocations are regularly transferred into this fund to serve as an endowment to enable strategic development for the future generations at a time when petroleum reserves are completely depleted in line with the Hubert curve

Data Analysis Technique

The technique used for the analysis of the dataset is the Content analysis (Gatsi, 2012). The technique distinguishes between manifest and latent content. Manifest deals with concrete terms contained in the Act which are obvious to

the rational reader. Latent content deals with the underlying meaning and implications of terms and words used in the sections of the Act.

Petroleum revenue management framework is designed to ensure the sustainable socioeconomic development for citizens of oil rich nations. Civil Society Organisations and political parties, including contributions from International bodies such as World Bank and International Monetary Fund (IMF), uphold the interest of stakeholders by ensuring the collection, disbursement and any other management strategy are guided by laws that lend themselves to transparency, responsibility and accountability as the main governance pillars for petroleum revenue management (Gatsi, 2017).

In the case of Ghana, the petroleum revenue management is guided by the Petroleum Revenue Management Act, 2011 (ACT 815) as amended by ACT 893, the 1992 Constitution and the Income Tax Act, 2015 (ACT 896). Revenue from Petroleum includes but not limited to corporate tax related to the production of oil and gas, revenue from the sale of the share of the host nations' in the production including surface rentals (SR).

Data was recorded in a Microsoft Excel file and then transferred to SPSS version 19 (IBMCorp, 2010) for statistical analysis. Descriptive statistics, frequencies, graphs, cross tabulations and correlations were used during the analysis.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

Introduction

This chapter presents the results obtained from the analyses of the dataset. The dataset used for the study were the revenues for each quarter (January – December) received from the petroleum production in Ghana during the fiscal years of 2011 up to 2017.

Descriptive Statistics on Petroleum Revenue Management

Royalty trend

The Figure 1 showed the royalty trends towards the petroleum receipts from the first quarter of 2011 to the fourth quarter of 2017 comprising the Jubilee Royalties (JR), TEN Royalties (TENR), Gas Royalties (GR) and Saltpond Royalties (SOPCLR). The maximum total contribution of US$887,568,508 came from the Jubilee field and the minimum of US$659,455 from the Saltpond field. The amounts of US$51,601,583 and US$933,370 were contributed by TEN and Gas Royalties respectively (Figure 1).

The Saltpond field was long in operation before the Jubilee field but its overall royalty rate indicated why records of its production did not lead to an enactment of an oil and gas law earlier on as this quantities produced did not amount to commercial quantities. The PRMA specifies that royalty rate should be between the ranges of 5% to 10%. On the other hand, the initial need to attract IOC's to invest in the exploration and development of petroleum in Ghana spurred the need for a 3% royalty rate to be agreed upon in the Petroleum Agreement. This has come to stay as specific laws supersede general laws.

Generally, this rate can be viewed as been on the lower side but this does not downplay the overall contribution from royalty, as it constituted 24% for the fiscal year 2011-2017 (Figure 12). Hence, an increase in the rate of royalty with subsequent contracts with IOC's would tremendously beef up the overall petroleum receipts generated since Ghana is now a well-known producer of petroleum in commercial quantities.

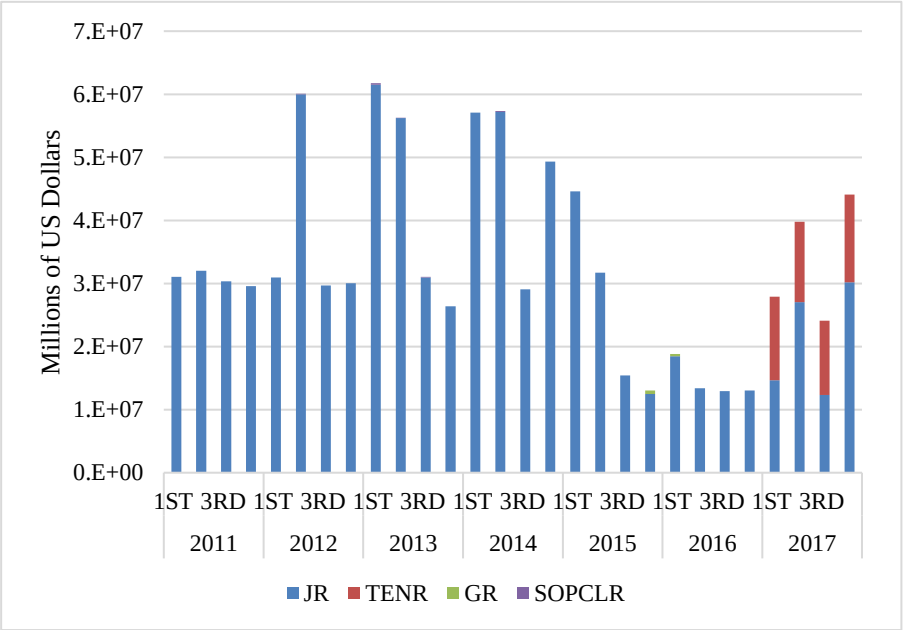

Figure 1: Royalty trends

Source: Ministry of Finance

Composition of Carried and participating interest

The Figure 2 revealed the composition of Carried and Participating Interest (CAPI) in the revenue trend. The Jubilee Carried and Participating Interest (JCAPI) with an amount of US$2,302,913,163constituted 94% of total CAPI. Whilst TENCAPI was 6%, Gas CAPI (GCAPI) was comparatively negligible (almost 0%) with the amounts of US$147,064,512 and US$8,923,252 respectively.

GNPC at the time of petroleum production by the Saltpond field was not mandated to act as a special purpose vehicle that could invest the CAPI of the government of Ghana in the operational activities of the IOC's as the PRMA had not been constituted or come into being. Hence, there was no contribution to CAPI with respect to the Salpond field. Notwithstanding this set back, the highest contributor to petroleum receipts was the CAPI which constituted 62% of overall petroleum receipts. This shows that insider ownership and capital expenditure when prudently executed could lead to a surge in petroleum production.

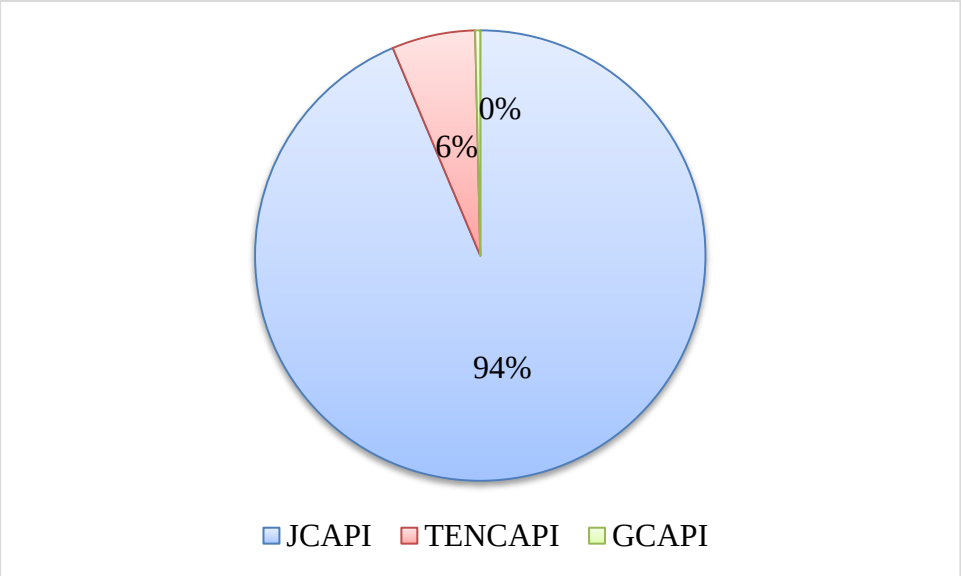

Figure 2: CAPI revenue composition (2011-2017)

Source: Ministry of Finance

Surface rentals plot

The initial Surface Rentals receipts which amounted to US$448,225 came in the second quarter of 2012 with the last and the highest amount of US$4,624,451.

Contrary to the provisions of the PRMA regarding surface rentals, the Petroleum Agreement exempted the IOC's from such tax payments in the initial year of production. The subsequent lapses in quarterly report from 2012-2017 that did not reflect payments of such tax were due to lags between actual receipts and reporting periods.

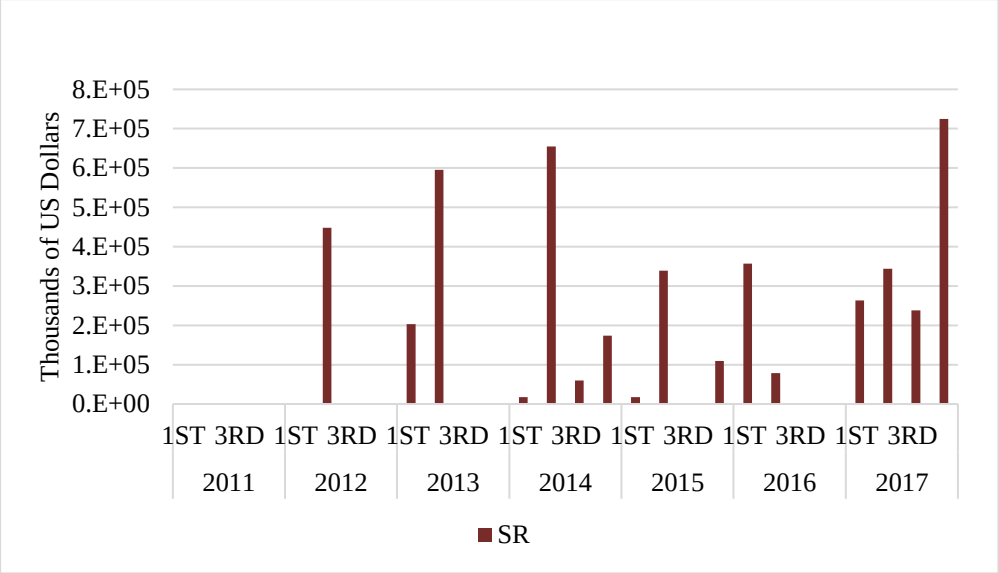

Figure 3: Plot of Surface Rentals

Source: Ministry of Finance

Corporate income tax trend

The first two years of 2011and 2012 were tax exemption years for the IOC's (Figure 4). The subsequent years depicted increase in prices where production was high with a surge in inflows from CIT. The sharp fall in international price of crude oil was depicted in 2015 before stabilizing marginally in 2016. Finally, the year 2017 showed favourable inflows mainly due to the production from the TEN field and marginal increases in prices internationally.

Tax exemption in the first two years was a good and attractive incentive for IOCs in the PA regardless of the provisions in the PRMA. The contributions of CIT towards receipts in the subsequent years were remarkable as they constituted 14% of overall receipts in 2017.

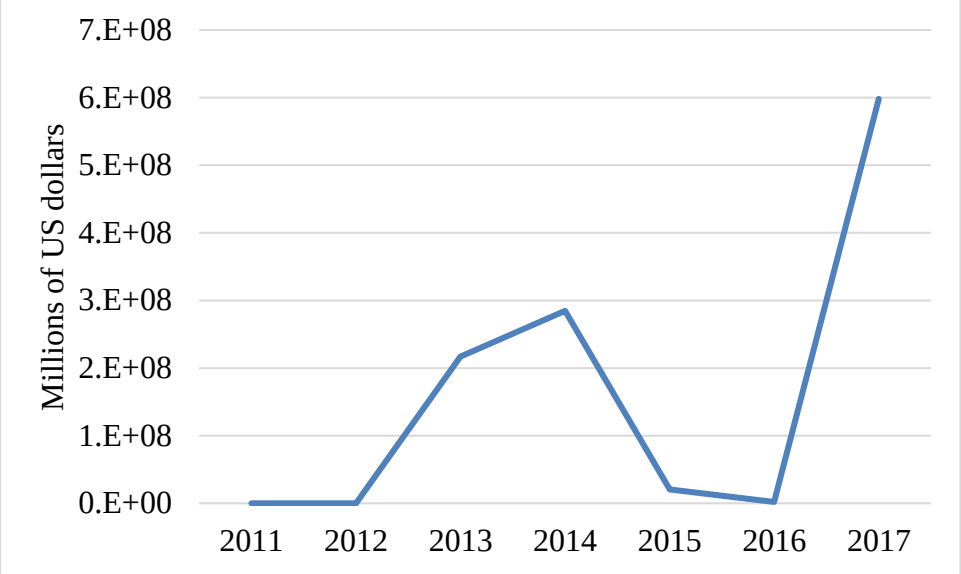

Figure 4: Corporate income tax trend

Source: Ministry of Finance

Other streams of revenue inflows

The Petroleum Holding Fund Income (Figure 5) depicted similar trend in nature to that of the CIT in Figure 4. Hedging against shocks of international price differentials seemed favourable as it shifted the fall in returns on productions during the period of 2015 to 2016 when compared to the poor financial performance of the IOC's in 2015. Interest on late payments was relatively flat or insignificant which was good as it depicted a discouraging trend in late payments from IOC's.

Amended provisions in the PRMA for surpluses in excess of benchmark revenue to be transferred into the PHF is responsible for the abnormally high performance of the PHFI in 2017 notwithstanding the game change at the commencement of operations on the TEN field . Hence, the high income attracted on the PHF in 2017 could not be directly linked to the performance of PHF on the whole as previous years showed low returns.

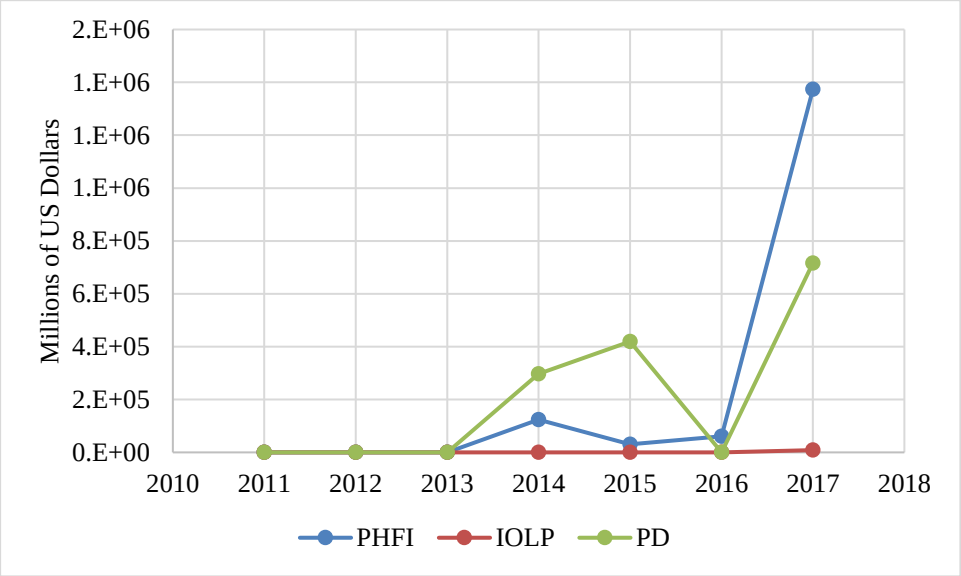

Figure 5: PHFI, IOLP and PD trends

Source: Ministry of Finance

Quarterly segments of revenue receipts

Figure 6 depicted how segments of revenue inflows changed quarterly over the 2011 to 2017 fiscal year. The first quarter of 2011 saw the start of revenue inflow which attained a peak in the second quarter of 2013 with a sharp fall in the third quarter and plateaued between the second and fourth quarter of 2016. Commencement of production in the TEN field and marginal increases in crude oil prices internationally shifted the revenue inflows upwards between the first and fourth quarter of 2017 fiscal year.

On a whole, production levels and prices are the main indicators that bring about variations in each quarter. Hence, with expected increases in future prices and the mandate upon GNPC, more explorations and developments would be made in the future leading to higher production. High receipts are thus expected outcomes in the subsequent quarters of 2018.

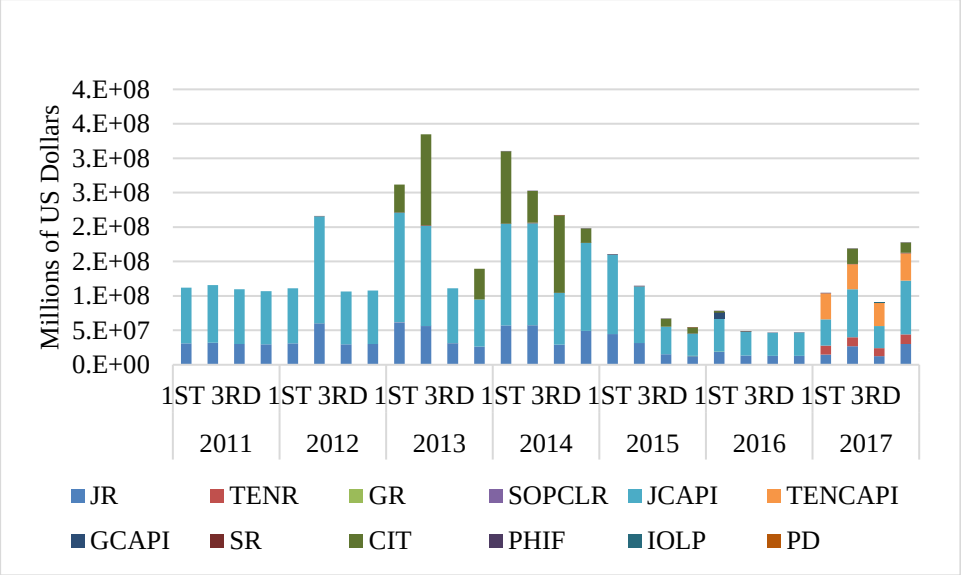

Figure 6: Quarterly segments of revenue receipts

Source: Ministry of Finance

Quarterly revenue inflows and outflows from 2011-2017

Figure 7 depicted that inflows equalled outflows in each quarter over the period, 2011 to 2016 with the exceptions of the fourth and first quarter of 2015 and 2016 respectively. The trend in 2017 seemed erratic after reconciliation though, provisions regarding reconciliations of Petroleum Holding Fund are expressly stated in Section 15 of the Act.

Section 14, clearly states that an obligation to make payments into the PHF, the GSF or the GHF shall not be discharged until the 'entire' amount has been deposited integrally and unconditionally into the respective earmarked

funds. Allocations were done quarterly based on inflows in each quarter. Impliedly, total inflows must equal total outflows in each quarter of each fiscal year.

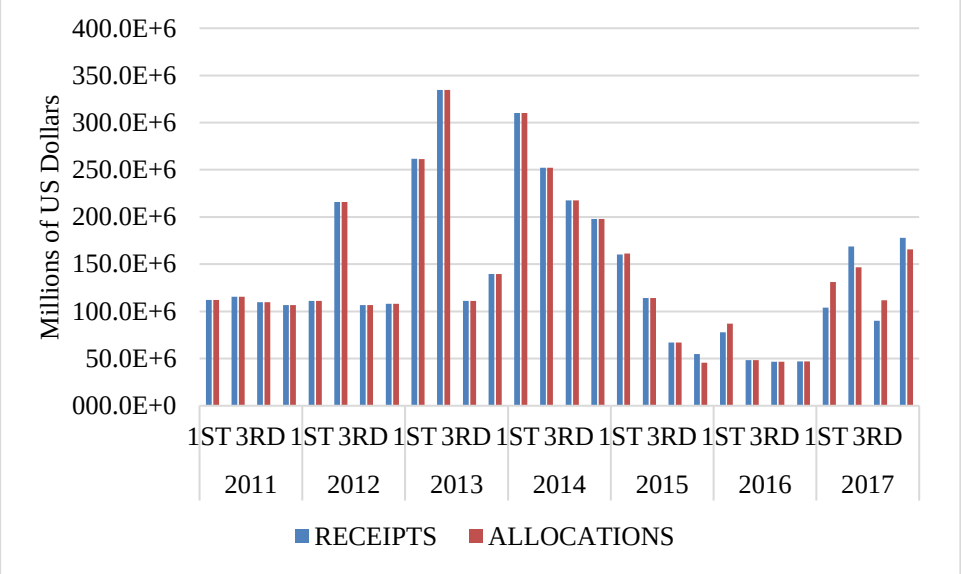

Figure 7*:* Quarterly inflows and outflows of revenue

Source: Ministry of Finance

Revenue receipts allocations

The Figure 8 showed that, the first quarter of 2011 saw GNPC having the highest allocation amounting to US$51,925,528. The highest allocation ever made in any quarter though was to the GSF in the second quarter of 2013 amounting to US$137,282,561. The lowest allocation in any quarter was to the GHF amounting to US$1,521,006. The upwards trend in quarterly allocation in 2017 was due to the commencement of production in the TEN field after the downward trend in the quarters of 2016.

Disbursement of receipts were done in line with the provisions in Section 16 of the PRMA 815, as amended Act 893.

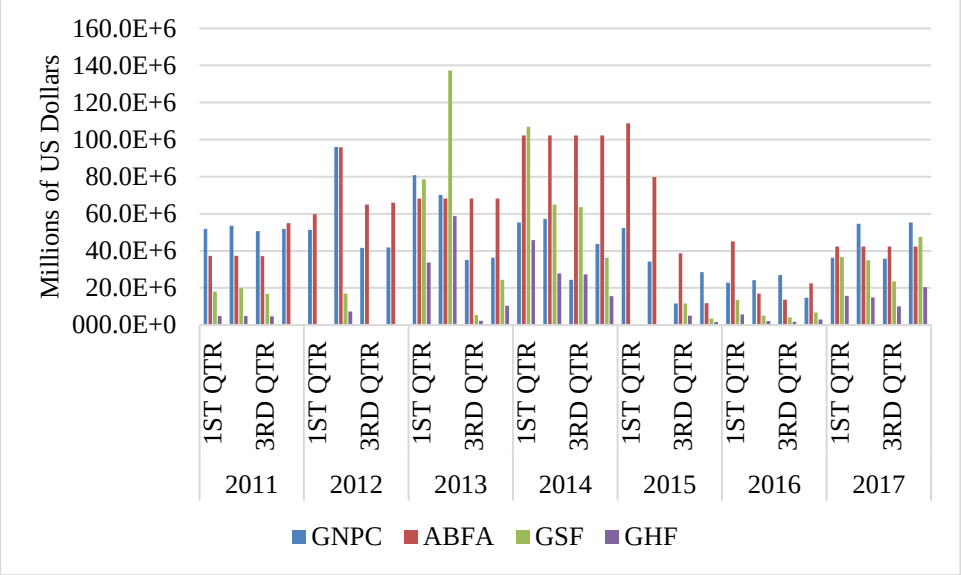

Figure 8: Quarterly allocations of revenue receipts

Source: Ministry of Finance

Quarterly performance trends

The Figure 9, depicted the quarterly performance of each year. The second quarter outperformed the other quarters in allocations from 2011 to 2013 but was outperformed by the first quarter from 2014 to 2016. Lastly, the fourth quarter outperformed the other quarters in the final year 2017.

On the whole, the first and second quarters of each year performed better than their corresponding third and fourth quarters over the period, 2011-2017. This could aid in the categorizing the commencement periods of public investment expenditures. Those that demand huge start up capitals could commence in the first and second quarters of each year when expected inflows tended to be higher and those that demand low start-ups but gradually scale up commenced in the third and fourth quarter of any given fiscal year.

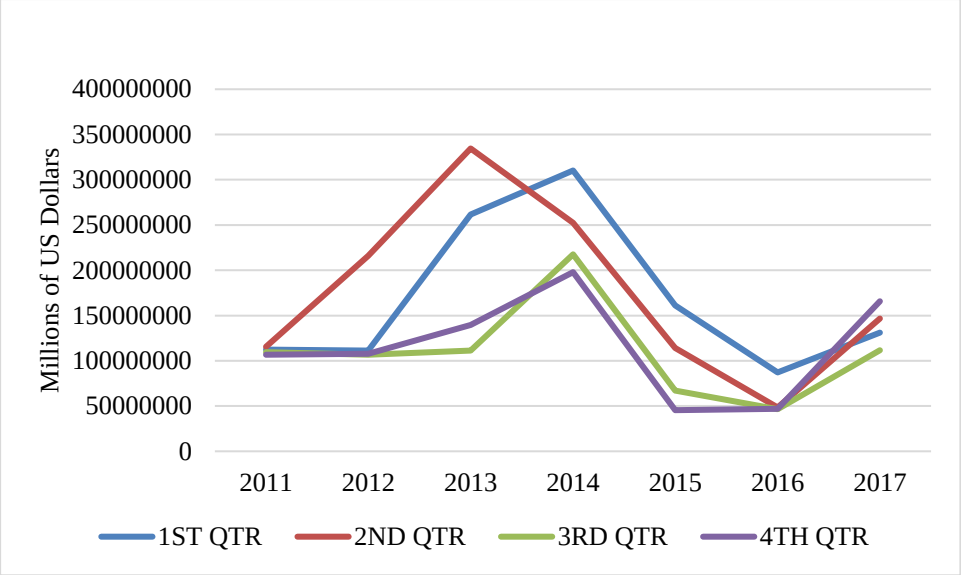

Figure 9: Quarterly performance trends

Source: Ministry of Finance

Public investment expenditure

The Table 1 showed allocations of some important public investment expenditure hidden in the quarterly allocation to the ABFA. GIIF like any other Fund, had its allocation done in the US-Dollar currency whilst that of PIAC was done mainly in the Ghanaian Cedis. PIAC is the committee mandated to check the transparency and accountability of the petroleum revenue management towards all stakeholders. The increasing costs of being a public oversight is reflected in the yearly budget allocation to PIAC.

To sustain development through the management of petroleum revenue, strategies and activities through public investment expenditure that meet the financial and infrastructural needs of the Republic and its stakeholders of both current and future generations must be given the necessary allocations due. This can be viewed in the revised Annual Budget Funding Amount priority arrears for the 2017-2019 period in compliance with the PRMA, by the Minister in consultation with Parliament. The new priority areas are agriculture, physical

infrastructure and service delivery in health, road, rail and other critical infrastructure development.

Table 1 : Public investment expenditure

	Currency	2015	2016	2017	Total
PIAC	GHc	0	967,000	1,345,078	2,312,078
GIIF	US$	51,271,666	17,215,698	6,915,408	75,402,772

Source: Ministry of Finance

Infrastructure is the foundation of any social and economic developmental project and this fund is supposed to aid investment in a diversified portfolio. However, a look at the trend of allocations into this fund clearly shows a lack of priority been given to solid foundation outlay for the implementation of projects. An example is the free SHS solid policy which is hurriedly implemented without recourse to its infrastructural needs of both physical and human resources leading to a moment spur decision making of the introduction of the double track system. The sustainability of many good projects are at stake due to poor infrastructure or hurried implementation with inadequate infrastructure.

Section 48 of Act 815 amended directs the Minister to provide a report describing the stage of implementation of the programmed activities funded by and the expenditure incurred on the activities covered by the Annual Budget Funding Amount, and indicating the portion of the Annual Budget Funding Amount allocated to the Ghana Infrastructure Investment Fund in the financial year of the report.

Composition of revenue sources (2011-2017)

The nature of the revenue contribution in Figure 10 could be said to have been largely sourced by the CAPI activities of GNPC which was 62% as compared to the 24% of Royalty and the 14% of CIT. The other sources of contribution were seemingly negligible in percentage wise.

The core mandate given GNPC as the national oil company for Ghana is to act as a special purpose vehicle for co-investing with IOC's and in some cases act alone so as to increase the direct participation of the state in the oil and gas industry. This is paying off well as it has been the highest generating receipts stream.

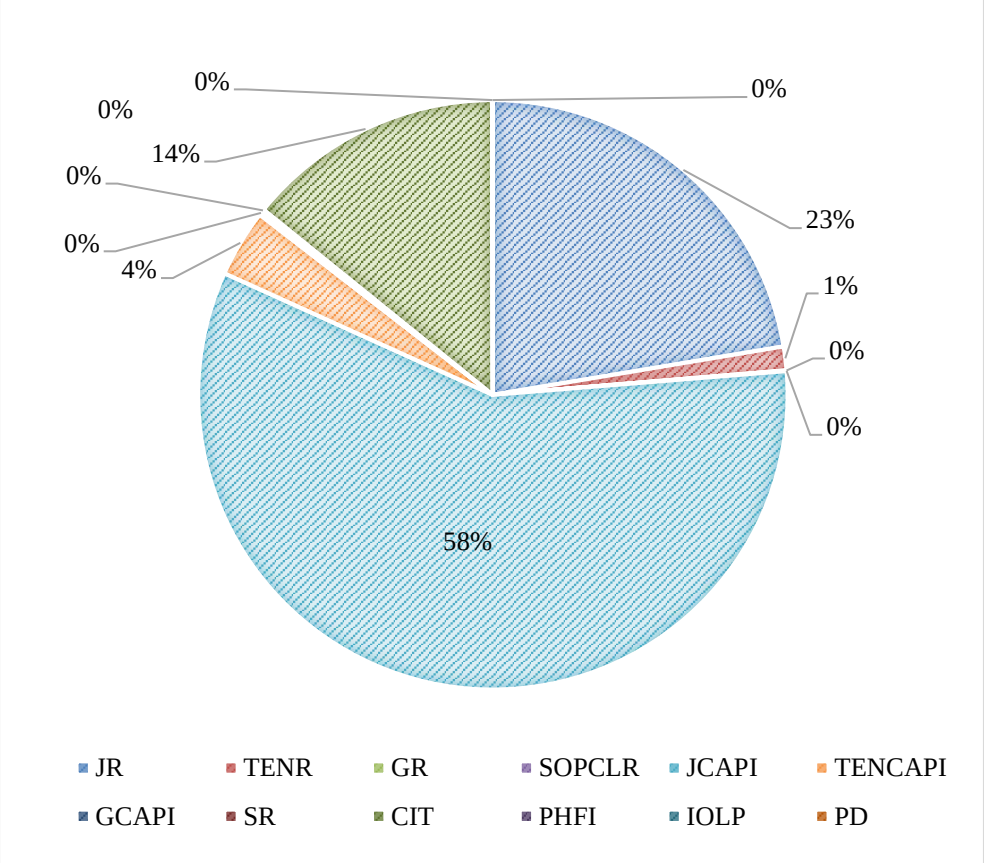

Figure 10: Composition of revenue sources (2011-2017)

Source: Ministry of Finance

Revenue distribution (2011-2017)

The nature of revenue distribution in Figure 11 showed the transfers to GNPC as 31% and the net of GOG receipts as 69%. Section 16 of Act 815 as amended 893 gives direction as to order of priority with which disbursement from the PHF is to be made. Allocations to GNPC as the national oil company for the purposes of subsection (2) is less than the 55% benchmark of the net CAPI specified before the 15 years duration.

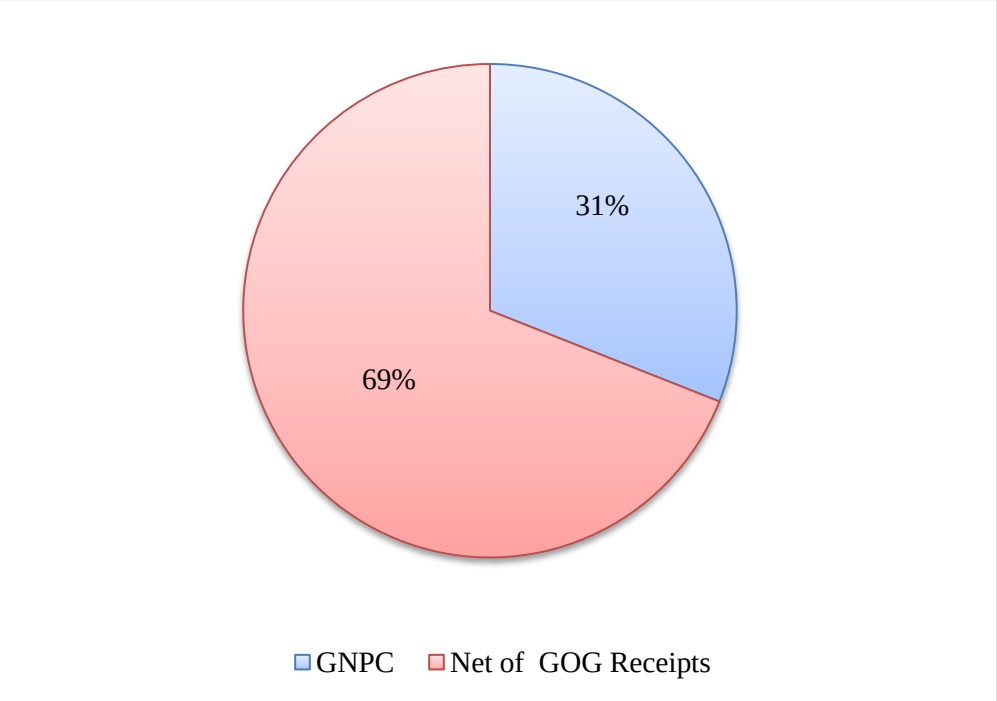

Figure 11: Composition revenue distribution (2011-2017)

Source: Ministry of Finance

Net of GOG receipts transfers

The Figure 12 showed the percentage of allocations of net GOG receipts after transfers to GNPC over the period (2011-2017). This percentage was allocated to ABFA and GPF at 60% and 40% respectively. A further percentage

allocation of the 40% transfer to the GPFs consisted of 29% to GHF and 71% to GSF.

Allocations in the GPFs fell short of the requirements of the amended PRMA which states in Section 11 (2) subject to section 17 and the First Schedule that, (b) where the actual petroleum revenue net of the allocation to the national oil company is equal to, more or less than the Benchmark Revenue: (ii) not less than 30% of the Benchmark Revenue shall be paid into the GPFs; and (3) not less than30% of the amounts under paragraphs (a)(ii) and (iii) and (b)(ii) of subsection (2) shall be transferred into the Ghana Heritage Fund and balance shall be transferred into the Ghana Stabilisation Fund.

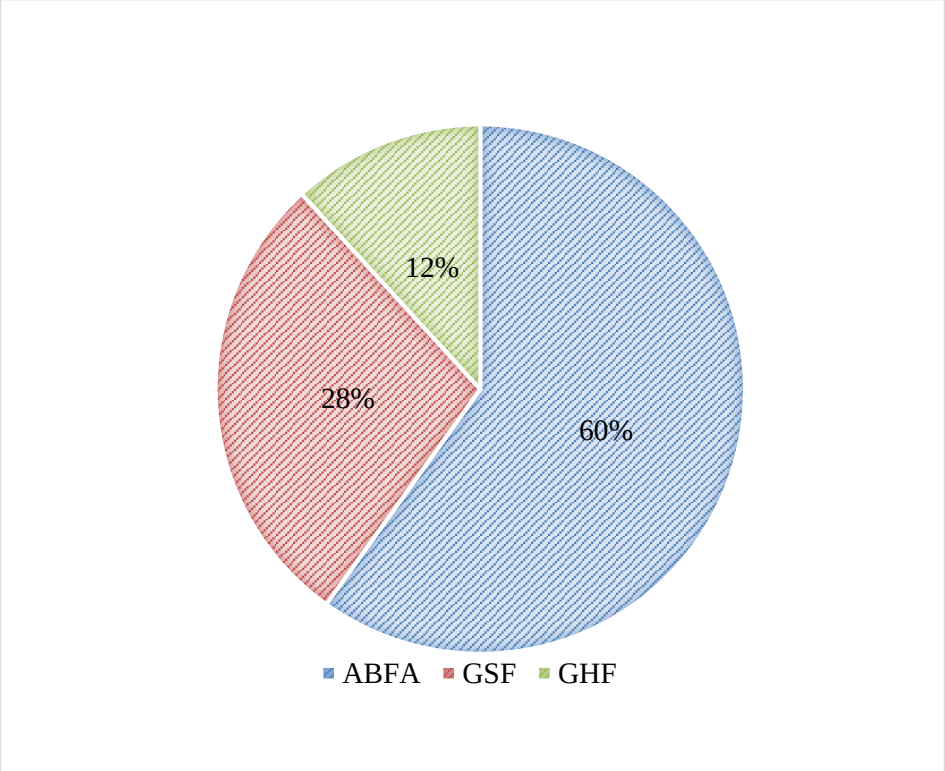

Figure 12: Net GOG receipts transfers (2011-2017)

Source: Ministry of Finance

Discussion of Findings

The fundamental objective of this study was to assess petroleum revenue management from 2011 to 2017. Owing to the objective of the study, data collected was subjected to a rigorous content analysis to critical ascertain the prevailing conditions in the Ghanaian economy. This rigorousness ensured the reliability and validity of the outcome.

The first research question was, to know the sources of the petroleum revenue from 2011-2017? Figures 1-5 depicted the composition of petroleum receipts from 2011-2017 as Royalty, Carried and participating interest, Surface rentals, Corporate income tax, Interest on late payment, Price differentials and Petroleum holding fund income. These came from three operational fields chronologically as Saltpond, Jubilee and TEN fields. The span of time between the operational activities of these fields depicted that policy makers in Ghana had shifted the peak production with more discoveries in line with policies formulated. However, policy makers in Ghana were somewhat failing to pay heed to the Hubert curve analysis as in most developing and new emerging economies with huge expectation to grow and invest in social and economic infrastructure (Gatsi, 2012) by consistently making expenditures on recurrent and non-capital items.

The second research question was on how petroleum revenues were allocated from 2011 to 2017? Figure 6 showed the petroleum receipts realised in each quarter from 2011 to 2017 for necessary allocations. Figure 7 further depicted side by side, receipts realised for each quarter and actual allocations in each quarter. After reconciliation, inflows might equal outflows but the erratic nature mostly in 2017 showed that separation of functions was not a prerequisite

to successful oil sector development. Previous study showed that countries where separation of functions had worked, were characterized by the combination of high institutional capacity and robust political competition. Unchallenged leaders often appear able to adequately discharge commercial and policy/regulatory functions using the same entity although this approach may not be robust against political changes. Where institutional capacity is lacking, better outcomes may result from consolidating commercial, policy, and regulatory functions until such capacity has further developed. Countries with vibrant political competition but limited institutional capacity pose the most significant challenge for oil sector reform: Unitary control over the sector is impossible but separation of functions is often difficult to implement according to Heller, Hults, & Thurber (2011).

The third research question was on how to compute the investment expenditures of the petroleum revenue from 2011-2017. Previous study showed that, since 1972, Norway had separated policy, regulatory, and commercial functions in the government's administration of petroleum development (Al-Kasim, 2006). This approach, particularly its requirement that the national oil company (NOC) only carry out commercial activities, has inspired admiration and imitation as the canonical model of good bureaucratic design for the hydrocarbons sector. Development institutions have explored whether oil-exporting countries should adopt this so-called "Norwegian Model" of administrative design and as a route to both better performance and enhanced transparency in their hydrocarbon activities (Al-Kasim, 2006). This study reveals institutional roles strikingly parallel to that of Norway, with a Ministry of Energy and Petroleum (in the manner of Norway's Ministry of Petroleum

and Energy), an independent commercial NOC (GNPC) analogous to Norway's Statoil, and Petroleum Commission as an autonomous regulator in the mold of the Norwegian Petroleum Directorate (NPD).

The final research question was on the nature of petroleum revenue from 2011-2017? Previous study by Gatsi (2012) revealed that at different points in time depending on the economic and technical conditions, the Hubert curve showed different peaks. In this study, Figure 6 depicted various peaks, in the first quarters of 2014 and 2016 and also peaking in the second quarters of 2011, 2012, 2013 and 2017 and so the likelihood of depleting resources given current technological know-hows and economic conditions does not seem to be anytime soon.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

The goal of almost all natural resource-rich countries to develop their economies from the proceeds of these resources including crude oil is hampered by several political, managerial or administrative constraints. According to many Economists, managing the natural resource proceeds for sustainable economic development is not as easy as anticipated with the resultant slow economic growth of most resource-rich countries with the exception of few. These phenomena are attributed to the over reliance on the revenues from the resource sector with little/least emphasis on investments, such that any plunge in the revenues affect the economic growth significantly.

In the year 2007, Ghana ended the long search for viable crude oil and commenced the commercial production of oil in 2010, and petroleum/oil revenues have since 2011 become a feature of Ghana's Annual Budget. Following the commercial production of oil, the Parliament of Ghana passed the Petroleum Revenue Management Act, 2011 (Act 815), and the Income Tax Law to govern the management of petroleum revenues. In spite of the Petroleum Act 815 and its amendments into the new Act 893 in 2015 and the interventions of prudent and sustainable management, the expenditure of government from the Ghana Petroleum Fund on recurrent and non-capital items creates sources for concern. According to experts, it puts the sustainability of the fund and stability of the economy in jeopardy. The efficient production and effective management of the petroleum revenue could attract more foreign direct

investments which could contribute to the overall national economic development. Consequently, this study had critically examined the nature of the revenues generated from the petroleum products and recommended prudent managerial strategies for future sustainable economic development.

Summary of Major Findings

The results of the present study showed evidence of three oil fields that have been operational over the period 2011-2017. Chronologically, the oil fields included, Saltpond, Jubilee, and Tweneboa-Enyenra-Ntomme (TEN) fields. Though the productions from the Saltpond field commenced long before the period 2011-2017, the quantities were not in commercial quantities. It was the commercial oil productions from the Jubilee field in 2007 that placed Ghana on the map of oil producing nations. However, full production commenced in the last quarter of 2010 which was accounted for in the first quarter report of 2011. Production from the TEN field commenced in the last quarter of 2016 which was accounted for in the first quarter of 2017. These productions increased the general proceeds of 2017 as compared to 2016 in spite of the general low oil prices in the international markets during both periods. Nonetheless, petroleum receipts from the Saltpond field came to a halt in 2015 as production ceased leading to its decommissioning in 2016. The following receipts constituted the petroleum revenue sourced from the fields that were operational from 2011-2017: Royalty from Jubilee , TEN, Saltpond and Gas; Carried and Participating Interest from Jubilee, TEN and Gas; Surface rentals; Corporate Income Tax (CIT), Petroleum Holding Fund income; Interest on late payments and Price differentials. Total receipts amounted to approximately US$3.967 million,

constituting 62% as CAPI, 24% as Royalty, 14% as CIT and approximately 0% as other streams which were seemingly negligible percentage wise.

The amended Sections of the Petroleum Revenue Management Act had affected allocations of petroleum revenues one way or the other. Examples included but not limited to: Section 17 regarding the Benchmark formula for allocations into the various Funds; Section 16 regarding disbursement from the Petroleum Holding Fund; and Section 11 regarding allocations to the National Oil Company (GNPC), Annual Budget Funding Amount (ABFA) in support of the national budget, Ghana Petroleum Funds (GPFs) comprising the Ghana Stabilisation Fund (GSF) and Ghana Heritage Fund (GHF) for purposes of savings and investments; and any exceptional purposes according to the provisions of the Act. Allocations into the GPFs were invested in qualifying instruments outside the Ghanaian economy. This net of GOG receipts constituted 28% of the GSF to cushion actual shortfalls in petroleum revenues for the ABFA during the period and finally 12% to GHF for supposed future generations. Total allocations amounted to approximately US$3.983 million with the following proportions as, 31% to GNPC, 41% to ABFA and 28% to GPFs (consisting of 20% to GSF and 8% to GHF).

For a sustainable development in the Ghanaian economy, public investment expenditures were made during the period 2011-2017. The percentage net of Government of Ghana receipts after transfers to GNPC during the period was 60% to ABFA, showing the priority of government to meet the social and economic needs of current the generation. This was evident also in the revision of priority areas in the ABFA. The total allocation into the ABFA amounted to US$1.643million. The Ghana Infrastructure Investment Fund

(GIIF), like any other Fund had its total allocation for the period to be approximately US$2.3million which saw a falling trend with respect to governments' investment in the infrastructure fund short of the requirements by the PRMA. Total allocations to PIAC was approximately GHc75.4million as the public oversight committee.

The nature of petroleum revenue from 2011-2017 was examined according to its trend and composition. The petroleum revenue had an initial upward trend, attained a maximum point and depicted a downward and somewhat flat trend towards 2016. The production from the TEN field coupled with the marginal increases in oil prices caused the revenue to shift upwards in 2017. In terms of composition, CAPI constituted 62% as the highest contributor with the other streams totalling 38%.

Conclusions

Notwithstanding the best practices of some savings and investments been made internationally, current trends (irredeemable debts or financial crisis) in international market economies demand an alternative strategy by Ghana as depicted by its low PHFI as compared to interests on its debts.

The provisions by Section 11 on allocations of revenue from GPFs into subsequent GHF and GSF was not adhered to as both funds were a percentage less and more respectively. No further allocations with respect to the provisions of Section 21(4) has been made into the GIIF after it received a total of US$6.92 million from the first TEN lifting in the first quarter of the 2017 budget. This weakens the fundamentals of the economy and has damning implications for other sectors of the economy as well.

Generally, international oil prices currently have been on a lower side and teaming with the high exchange rate of Ghana Cedis to US Dollars, the actual petroleum revenue is most likely to fall short of expected petroleum revenue.

Allocations done in percentages as directed by the Act sometimes lend some constituents that run into thousands or millions of US dollars to be approximately zero.

Recommendations

Section 27 of the PRMA can be amended so that, investments into qualifying instruments would not mean to limit investments internationally but also extended domestically. This would help meet the demands of the domestic debt market. As SWFs are now major investment banks in the world, cue could be taken as to how well to invest for example, in real estates or defunct banks due to managerial issues and not necessarily viability. Due diligence must be the hallmark before such domestic investments which would attract higher income than otherwise internationally be made.

The success of any sovereign wealth fund requires fiscal discipline by the Minister and where due to unforeseen circumstances the Minister falls short of such requirements regarding allocations to the GPFs according to Section 15(d), the PIAC as an oversight committee or any interest group can bring this to the notice of the Minister.

Likewise the drastic reduction in allocation to the GIIF without recourse to the provision of the Act, has to be looked at and reconciled since the GIIF serves both as a vehicle for investing in the domestic market and conduit for supplementing any marginal gains of PHFI internationally through direct or

indirect income made from such investments. This will help build a solid fundamental for sustainable development in the economy. In order to encourage allocations into the GIIF, Section 21(4) can be amended to set a minimum cap of say 10% or 15% and also restrict the implementation of policies whose infrastructural needs have not been met by say 70 to 80 percent.

Given the available technology, all other things being equal, the current trend in the general low international oil prices with sporadic marginal increases, needs to be addressed not only through the GSF but also the strategy of enabling GNPC through its CAPI to intensify the oil exploration for increased oil production in compensation for low prices.

Finally, it is recommended that further studies be done to establish the impact erratic petroleum revenue trend has on the economy of Ghana.

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APPENDICES

APPENDIX A: Sources of Petroleum Revenue

		JR	TENR	GR	SOPCLR	JCAPI	TENCAPI	GCAPI	SR	CIT	PHIF	IOLP	PD	TOTAL
2011	1ST	31055938	0	0	0	81133638	0	0	0	0	0	0	0	112189576
	2ND	31994219	0	0	0	83584896	0	0	0	0	0	0	0	115579115
	3RD	30330589	0	0	0	79238665	0	0	0	0	0	0	0	109569254
	4TH	29560398	0	0	0	77226381	0	0	0	0	0	0	0	106786779
2012	1ST	30948012	0	0	0	80209778	0	0	0	0	0	0	0	111157790
	2ND	59987945	0	0	104193	155474274	0	0	448225	0	0	0	0	216014637
	3RD	29677076	0	0	0	76915819	0	0	0	0	0	0	0	106592895
	4TH	30029417	0	0	0	77829001	0	0	0	0	0	0	0	107858418
2013	1ST	61494873	0	0	249221	159379869	0	0	202735	40210100	0	0	0	261536798
	2ND	56209416	0	0	43501	145681239	0	0	595598	132006832	0	0	0	334536586
	3RD	30930231	0	0	110554	80163693	0	0	0	0	0	0	0	111204478
	4TH	26371694	0	0	0	68349065	0	0	0	44768566	0	0	0	139489325
2014	1ST	57074875	0	0	0	147924302	0	0	17864	105104943	96013	0	0	310217998
	2ND	57197839	0	0	151986	148242993	0	0	655186	46010013	8249	0	0	252266266
	3RD	29077092	0	0	0	75360805	0	0	60000	112778217	9768	0	297249	217583131
	4TH	49311005	0	0	0	127802223	0	0	174000	20653018	10052	0	0	197950298
2015	1ST	44622461	0	0	0	115650649	0	0	17797	0	10349	0	0	160301256
	2ND	31688929	0	0	0	82130056	0	0	338997	0	8369	0	0	114166351
	3RD	15427394	0	0	0	39984083	0	0	0	11617384	3314	0	0	67032175
	4TH	12469912	0	553815	0	32319003	0	0	109126	8793448	8435	0	419387	54673126

2016	1ST	18438681	0	379555	0	47788611	0	8923252	356844	2027780	19208	0	0	77933931
	2ND	13412181	0	0	0	34761137	0	0	78250	204770	8529	0	0	48464867
	3RD	12942621	0	0	0	33544150	0	0	0	0	24079	0	0	46510850
	4TH	13057727	0	0	0	33842478	0	0	0	0	8990	0	0	46909195
2017	1ST	14661507	13249022	0	0	37999087	37759714	0	262917	0	78728	0	0	104010975
	2ND	27040197	12732512	0	0	70081664	36287659	0	344165	22073745	107118	0	0	168667059
	3RD	12343658	11734012	0	0	31991782	33441933	0	238347	0	148276	4274	0	89902282
	4TH	30212621	13886037	0	0	78303822	39575206	0	724399	14883877	245157	0	0	177831119
TOTAL		887568508	516015833	933370	659455	2302913163	147064512	8923252	4624451	561132693	794635	4274	716636	3966936530

Source: Ministry of Finance

APPENDIX B: Allocations of Petroleum Revenue

		GNPC	ABFA	GSF	GHF	TOTAL
2011	1ST	51,925,528.00	37,396,576.00	18,059,341.00	4,808,131.00	112,189,576.00
	2ND	53,494,333.00	37,376,025.00	19,903,268.00	4,805,489.00	115,579,115.00
	3RD	50,712,717.00	37,227,412.00	16,842,745.00	4,786,381.00	109,569,255.00
	4TH	51,831,724.00	54,955,054.00	0.00	0.00	106,786,778.00
2012	1ST	51,334,258.00	59,823,532.00	0.00	0.00	111,157,790.00
	2ND	96,016,218.00	95,879,065.00	16,883,548.00	7,235,806.00	216,014,637.00
	3RD	41,683,633.00	64,909,263.00	0.00	0.00	106,592,896.00
	4TH	41,915,817.00	65,942,600.00	0.00	0.00	107,858,417.00
2013	1ST	80,930,285.00	68,299,392.00	78,544,945.00	33,662,119.00	261,436,741.00
	2ND	70,119,249.00	68,299,392.00	137,282,561.00	58,835,383.00	334,536,585.00
	3RD	35,141,266.00	68,299,392.00	5,434,674.00	2,329,146.00	111,204,478.00
	4TH	36,230,616.00	68,299,392.00	24,471,522.00	10,487,795.00	139,489,325.00
2014	1ST	55,218,538.01	102,268,194.45	106,911,885.69	45,819,379.58	310,217,997.73
	2ND	57,237,473.34	102,268,194.45	64,932,418.64	27,828,179.42	252,266,265.85
	3RD	24,471,694.21	102,268,194.45	63,590,269.69	27,252,972.72	217,583,131.07
	4TH	43,784,797.98	102,268,194.45	36,328,181.14	15,569,220.49	197,950,394.06
2015	1ST	52,296,139.00	108,873,807.00	0.00	0.00	161,169,946.00
	2ND	34,314,993.00	79,851,357.00	0.00	0.00	114,166,350.00
	3RD	11,689,093.00	38,740,158.00	11,622,047.00	4,980,877.00	67,032,175.00
	4TH	28,558,500.00	11,830,049.00	3,549,015.00	1,521,006.00	45,458,570.00
2016	1ST	22,769,032.85	45,065,618.61	13,519,685.58	5,794,150.97	87,148,488.01
	2ND	24,145,013.22	17,023,897.80	5,107,169.34	2,188,786.86	48,464,867.22
	3RD	26,922,105.64	13,712,120.89	4,113,636.27	1,762,986.97	46,510,849.77
	4TH	14,660,940.31	22,573,778.49	6,772,133.55	2,902,342.95	46,909,195.30
2017	1ST	36,338,221.00	42,364,668.00	36,617,454.00	15,693,195.00	131,013,538.00
	2ND	54,566,271.00	42,364,668.00	34,894,196.00	14,954,655.00	146,779,790.00
	3RD	35,768,799.00	42,364,669.00	23,556,976.00	10,095,847.00	111,786,291.00
	4TH	55,366,275.00	42,364,668.00	47,615,293.00	20,406,554.00	165,752,790.00
	TOTAL	1,239,443,530.56	1,642,909,332.59	776,552,964.90	323,720,403.96	3,982,626,232.01

Source: Ministry of Finance

APPENDIX C: Annual Lifting Average Price

	2011	2012	2013	2014	2015	2016	2017
Effective price	113.00	109.75	107.52	91.18	52.36	46.99	53.49
Brent Price	112.26	111.55	108.44	99.52	52.40	46.00	55.71

Source: Ministry of Finance