UNIVERSITY OF CAPE COAST

EFFECTS OF FOREIGN DIRECT INVESTMENT ON GOVERNMENT

REVENUE IN GHANA

PETER BAMEMBAYA

2017

DECLARATION

Candidate's Declaration

I hereby declare that this dissertation is the result of my own original research

work and that no part of it has been presented for another degree in this university

or elsewhere.

Candidate Signature ………………….. Date: …………………………..

Name: Peter Bamembaya

Supervisors' 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.

Supervisor's Signature ………………….. Date: …………………………..

Name: Dr. Camara K. Obeng

ABSTRACT

The study assessed the effects of foreign direct investment on government revenue in Ghana. Foreign direct investment, Per Capita GDP, Education and Urbanisation were used as independent variables whereas tax revenue was taken as dependent variable. Augmented Dickey-Fuller, Phillips-Perron, Ng-Perron and Zivot-Andrews unit root tests were applied to find the level of stationarity in the time series. Autoregressive Distributed Lag and its Error Correction Model were applied to find long run and short run relationships. The study found the existence of long run and short run relationships in the model. FDI, Per Capita GDP and Level of Education had positive and significant effect on tax revenue so FDI, Per Capita GDP and Level of Education are raising tax revenue to Government of Ghana. Urbanisation also had positive but insignificant effect on tax revenue in Ghana.

KEY WORDS

Autoregressive distributed Lag

Cointegration

Foreign direct investment

Ghana

Government revenue

Stationarity

ACKNOWLEDMENTS

I would like to sincerely express my utmost appreciation to my supervisor and lecturer, Dr. Camara K. Obeng of the Department of Economics, Faculty of Social Sciences for his professional guidance, advice and goodwill with which he guided this work. It is my prayer that Jehovah richly blesses him.

Again, I wish to thank my wife in the person of Mrs. Mary Bamembaya for her unflinching support through the period.

DEDICATION

To my son, Anthony

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS

ADF	Augmented Dickey-Fuller
AGI	Association of Ghana Industries
ARDL	Auto-regressive Distributed Lag
CET	Common External Tariff
CIT	Corporate Income Tax
DTA	Double Taxation Agreement
ECOWAS	Economic Community of West African States
EU	European Union
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GIPC	Ghana Investment Promotion Centre
GOG	Government of Ghana
GRA	Ghana Revenue Authority
GSC	Global System of Communication
LMIC	Lower Middle Income Country
MLGRD	Ministry of Local Government and Rural Development
MMDAs	Metropolitan, Municipal and District Assemblies
MNEs	Multinational Enterprises
NGOs	Non-governmental Organisations
NHIF	National Health Insurance Fund
NHIS	Nation Health Insurance Scheme
OECD	Organisation for Economic Cooperation and Development

OLI	Ownership, Location and Internationalisation
PP	Phillip-Perron
SBC	Schwarz Bayesian Criterion
SECO	Switzerland's State Secretariat for Economic Affairs
TIN	Tax Identification Number
UNCTAD	United Nations Conference on Trade and Development
VAT	Value Added Tax
WDI	World Development Indicators

CHAPTER ONE

INTRODUCTION

Background of the Study

The importance of foreign direct investment (FDI) to a developing country cannot be overemphasized. FDI brings in new technology which enhances productivity, brings in new managerial practices, helps to train local staff which subsequently contributes to human capital development, increases domestic savings, and above all, provides tax revenues to the domestic economy (Asafu-Adjaye, 2005).

Attracting foreign direct investment continues to be a priority of Government of Ghana (GOG) as it remains one of the main sources of generating revenue needed for bridging an infrastructure funding gab of at least USD 1.5 billion a year (U.S. Department of State, 2015). FDI [% of Gross Domestic Product (GDP)] has taken an upward trend from since 1983. It averaged 3.15 over a period of 33 years (1983 to 2015). FDI (% of GDP) attained it highest value in 2008 where it scored 9.52 as against a minimum value of -0.06 in 1983 (World Bank, 2016). According to a report by Ghana Investment Promotion Centre (GIPC), foreign direct investment dropped by 31% between 2014 (8.71) and 2015 (8.43). In addition, the report said that the number of registered projects in 2015 was 170, a figure lower by 14 projects compared to the number recorded in 2014 (Ghana Investment Promotion Centre, 2016). The report corroborated the Association of Ghana Industries' (AGI) business barometer report which said business confidence in Ghana's economy has dropped by 4.17 basis points, citing cost and supply of electricity as the number one reason (Association of Ghana Industries, 2015).

However, in 2016, foreign direct investment grew by 400% in terms of amount of initial transfers compared with the value recorded in the second half of 2015. GIPC said 12 more projects were recorded in the second quarter compared with the number of projects completed in 2016 (Ghana Investment Promotion Centre, 2016). It is intriguing to mention that, in recent times, most FDI have been employing profit transferring measures as a way of dodging taxes. According to Herkenrath (2010), Multinational corporations use accounting tricks to deprive developing countries of billions in tax revenues every year. Besides, the British charity Christian Aid estimates that developing countries lose 160 billion francs in revenues each year owing to tax tricks by multinational corporations (Christian Aid, 2010).

Aside FDI, government revenues are positively influenced by structural factors such as growing levels of per capita income, a shift from agricultural to industrial production, a change in consumer demand from basic necessities to manufactured   goods and services, falling age-dependency ratios, and increasing urbanization (Asafu-Adjaye, 2005).

Statement of the Problem

One of the critical challenges that Ghana faces in the quest to give real developmental meaning to its status as a Middle income country, is the imperative need to widen the socio-economic infrastructure space, through the replacement of old and worn out ones and the building of new ones. Ghana's efforts to attract foreign investment, create international competitiveness for indigenous private business, encourage the entrepreneurship of the youth and provide gainful employment for the growing population, are contingent upon

2

such expansion and modernization of our socio-economic infrastructure. The downside of Ghana's transition to a Lower Middle Income Country (LMIC) status is that it shall gradually lose substantial amount of grants and concessional loans that accrue to developing countries. This presupposes that Ghana must rely more on internal resources and the capital markets for developmental needs (Ministry of Finance, 2013). According to PricewaterhouseCoopers (2015), out of Government's total revenue and grants of GH¢38,038 million projected for 2016, about 76% is expected to come from tax revenues.

However, the implementation of the Single Spine Salary Structure by the government of Ghana has created the situation where compensation to public sector workers grew overnight to 72.3 per cent of tax revenue (including oil) as at end December 2012: a figure that is in fact higher than the 60.9 per cent in November 2012. This outcome has crowded out the fiscal space for spending on critical social intervention and other infrastructure programmes. Moreover, the behaviour of frequently dodging taxes by Multinational corporations is denying the country of the needed revenue. Foreign investors or Multinational corporations are typically the highest taxpayers in Ghana. They include key extraction industry partners such as Tullow Oil and Gold Fields, the largest producers in energy and gold mining, respectively (Oxford Business Group, 2016).

Extensive empirical studies have been conducted on the impact of FDI flows on the various economic indicators including economic growth and inflation in Ghana (Andinuur, 2013; Antwi, Mills, Mills & Zhao, 2013; Asamoah, 2013; Antwi & Zhao, 2012; Osei, 2014). However, none of them

studied the impact of FDI inflows on government revenue necessitating the research. This study therefore, aims at bridging the gap in literature by assessing the effects of FDI on government revenue in Ghana using ARDL technique.

Purpose of the Study

In general, this study sought to examine the effects of FDI on government revenue in Ghana.

Research Objectives

The specific objectives of this study were to:

1. explore the trends in government revenue and FDI; and

2. estimate the effect of FDI on government revenue in the short run and in the long run.

Hypothesis Testing

The study was guided by the following hypothesis based on the stated objectives of the study:

H_0: Changes in FDI do not significantly affect government revenue in the short run and in the long run.

H_1: Changes in FDI significantly affect government revenue in the short run and in the long run.

4

Significance of the Study

The findings of the study will be of immense benefit to government and policy makers, investors and academicians. If FDI impacts positively on government revenues in Ghana, policy makers and the government would find it necessary to continuously create an enabling environment to attract foreign investors as well as intensifying their tax collection efforts. Also, there will the need for to put in accounting measures to restrict Multinational corporations from dodging taxes as stated earlier.

Investors would now find the need to continue paying their taxes to help the resident country to get enough funds to develop their country where they operate in terms of building roads and investing in the power sector to ensure regular and cheaper power supply. This will go a long way to reduce their cost of operations hence more profits.

As studies in this area are scanty in Ghana, this will open a new chapter on FDI and its relationship with government revenue. It will open further discussion on FDI-government revenue nexus in Ghana.

Delimitations of the Study

The study seeks to assess the effects of FDI on government revenue in Ghana. The study covers Ghana, a developing country within the West African Sub-region using annual time series data over a period of 33 years from 1983 to 2015.

5

Organisation of the Study

This study is organized into five main chapters. Chapter one presents the background of the study, statement of the problem, purpose of the study, objectives of the study, hypothesis testing, significance of the study, delimitations and organization of the study. Chapter two focused on the review of the relevant literature. Chapter three was devoted to explaining the research methods employed including model specification and estimation, definition and measurement of variables, estimation strategy, data source, and valididity and relaibility of data. Chapter four is devoted to analysing the results of the data collected and discussion. Finally, Chapter five presented the summary of findings, conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter covers theoretical review and empirical review. The theoretical review describes the eclectic theory of international production showing how it related to FDI and taxes, the concept of FDI, merits and demerits of FDI, FDI inflows into developing African countries, measures for revenue mobilization in Ghana, determinants of government revenue in Ghana, and taxation and its effect on FDI. Subsequently, empirical review documents the results of other studies that are closely related to FDI and government revenue.

Theoretical Review

The eclectic theory of international production

Decisions by multinational enterprises (MNEs) to carry out foreign investment are usually complex mostly because that process involves strategic decisions. The most prominent theory of FDI is "The Eclectic Theory" developed by Dunning (1981) with ownership, location and internationalisation (OLI) framework which brings to together traditional ownership advantages, location, and international theory.

According to Dunning (1981) and De Mooij and Ederveen (2003), FDI is determined by three set of advantages that a firm seeking to invest (direct investment) stands to enjoy than other available mechanisms the firm can adopt to meet the needs of its customers both home and abroad. Dunning is of the view that FDI comes about when an organisation in a source country is

7

able to determine the competitive advantage it has such as trademark, production and technical know-how, returns to scale as against the advantages it stands to enjoy in the host country such as cheap labour, availability of raw material, tax reliefs and holidays. First of all, there must be "Ownership" advantage for the multinational relative to ownership by local firms. This may have something to do with specific technological or organizational knowledge of the multinational, but could also relate to tax issues. Secondly, it must be attractive for the MNE to produce abroad because of some comparative "Location" advantage. Otherwise the multinational would have chosen to export, rather than invest. Finally, it should be attractive to undertake activities within the multinational, rather than buying or leasing them from other firms. Taxes can affect all three OLI conditions, including the tax treatment for foreign firm, relative to domestically owned firms. The tax rate may also partially determine the attractiveness of location for undertaking investments (De Mooij & Ederveen, 2003; Dunning, 1981).

The implication of this theory to Ghana's economy is that, the nation has abundant, untapped and even undiscovered natural resources as its "location specific advantage" which can be used maximally to increase government revenue needed to bridge its infrastructure gab, improve power supply and establish more industries to process its raw foods so as to prove employment for citizenry. For the nation to achieve these goals, this advantage must be backed up with good and consistent macroeconomic policies, good governance, improvement in infrastructure peace and security and human capital security among other factors for the country to serve as attractive site

for foreign firms and for the firms to have positive contribution to economic growth of the country.

The Concept of Foreign Direct Investment

FDI reflects the objective of establishing long term relationship by a resident enterprise in one economy (direct investor) in an enterprise (direct investment enterprise) that is resident in an economy other than that of the direct investor. This relationship is represented by direct or indirect ownership of 10% or more of the voting power of an enterprise resident in one economy by an investor resident in another economy (OECD, 2008).

Foreign Direct Investment (FDI) has been regarded as a key factor for economic growth and productivity for most economies and it is a highly discussed topic in the field of economics and finance. FDI involves the transfer of financial capital, technology and skills. This process raises the question of the costs and benefits involved in it for the home and host countries and it is not clear, what costs are borne and what benefits are received by both sides (Moosa, 2002). From a cost-benefit perspective one of the most important aspects of FDI is its effect on output and therefore on growth in the host country.

FDI inflow into developing African countries

Many African countries including Nigeria and Ghana see FDI as important to their economic growth and development. They understand that FDI will provide the much needed capital for investment, provide aids to the local firms to be more stable, productive and by adopting modern, and

9

efficient technology or by investing in human capital (Karim & Ahmad, 2009; Johnson, 2010). Moreover, majority of the fast growing countries depend on capital from FDI to support the transformation of their growing economy. Developing countries from Africa including Cameroon need such investments to accelerate their efforts in economic development (Johnson, 2010).

It is the hope and belief of the developing African countries such as Cameroon that more inflow of FDI into the region would improve the much needed higher standard of living through the creation of employment opportunities. Most African countries instituted many policies to attract more FDI [United Nations Conference on Trade and Development (UNCTAD), 2008]. African leaders expect that FDI would produce external help in the form of technological transfer and spillovers (Wijeweera, Villiano, & Dollery, 2010). The pursuit of responsible macroeconomic policies combined with an accelerating pace of liberalization, deregulation, and above all, privatization were expected to attract FDI to Africa (Ajayi, 2008). Ajayi continued that despite many policy changes such as deregulation, and privatization, the continent of African has not benefited significantly from FDI to commensurate to its policies in favour of FDI. A positive trend towards a rise in FDI inflow in Africa has occurred in recent years.

Other developing countries such as Nigeria, Angola and South Africa, Congo Republic, and Equatorial Guinea continue to attract more FDI, largely because of their rich in natural resources. Lately, FDI has diversified into other sectors such as manufacturing and services. Mauritius is able to attract more FDI into the manufacturing sector through its textile industry (Ajayi, 2008). Ajayi also added that, in the last decade, Morocco has witnessed its share of

10

FDI increased greatly in the manufacturing and service sectors. The sources of the FDI vary largely due to the needs of foreign investors. According to UNTACD (2008), FDI from Germany has been mostly in the manufacturing, British FDI in the service and manufacturing, and the United States in the exploration and service.

Lemi and Asefa (2009) reported that recent surveys of the multinationals indicate that tourism, and natural resources industries have the greatest potentials to attract more FDI into the region. In recent years, telecommunications has attracted more FDI in the region than ever. This is mainly because of the privatization in the telephone companies in many African countries such as Nigeria and Ghana, and the emergence of global system of communication (GSM) in some African countries (Ajayi, 2008). Despite many policy changes, laws and other legal instruments instituted in African countries including Cameroon and Ghana to attract more foreign investors, there is still disproportionate economic growth from FDI in the region

Measures for revenue mobilization in Ghana

According to Ministry of Finance (2016), Ghana's improvements in the tax revenue effort have been constrained by the fall in commodity prices and power supply challenges that led to a slowdown in the growth of business activity in the economy. Additionally, Ghana has high tax exemptions regime, collection leakages, low compliance, inadequate taxpayer information and weak linkages among public agencies.

11

However, to enhance resource mobilization to close the funding gap, government has introduced a number of tax policy and administration initiatives. The overarching goal was to create additional fiscal space for sustainable budget expenditures in ways that are more efficient, fairer and better promote good governance. Most of the policies were also to enhance efficiency in tax administration, compliance and increase tax revenue (Ministry of Finance, 2016). Some of the tax policy and administration initiatives are as follows:

Tax identification number (TIN);

According to Ministry of Finance (2016), Ghana Revenue Authority (GRA) shall continue to insist that importers quote their TIN and tax office code whenever they are transacting business at the ports. The TIN and the tax office code will ensure that every importer, exporter and agent will be identified with their domestic tax office to ensure that they meet their tax obligations. Efforts are being made to extend the TIN to other sectors to facilitate the identification of eligible taxpayers. Eventually, the TIN will form part of the re-launch of the National Identification Number initiative to serve multiple national requirements.

Sliding scale excise duty;

To provide an incentive for brewery companies to use local raw materials for the production of beer and malt, a sliding scale excise duty was introduced for brewery companies that substitute local raw materials for imported ones. After implementing the policy for three years, Government has reviewed the policy

12

and is proposing to reduce the scale from 4 bands to 3 bands to improve the efficiency of administration.

Excise duty on tobacco;

To reduce the consumption of tobacco and its related health hazards, the Parliament of Ghana has amended the excise duty rate from 150% to 175%.

Review of tax laws;

As part of the GRA modernization and reforms, the various tax laws have been reviewed and harmonized. The Income Tax Act was passed in 2015 to complement the Value Added Tax Act, the Customs Act and the Excise Duty Act. The Revenue Administration Bill will be laid to the Parliament of Ghana in 2016. The accompanying regulations and practice notes are currently under preparation.

Amendment of national health insurance act;

In order to ensure that transfers to the National Health Insurance Fund (NHIF) conform to the taxable base of the Value Added Tax (VAT) Act 2013 (Act 870), the Nation Health Insurance Scheme (NHIS) Act amendment Bill has been passed by the Parliament of Ghana.

Common external tariff; and

Ghana continues to work towards the implementation of the Economic Community of West African States (ECOWAS) Common External Tariff (CET) which is a major platform for a Customs Union that will facilitate free

13

trade and ensure greater economic integration within the region. Ghana has completed several activities to ensure the smooth implementation of the new regional tariff early next year. The CET Bill is currently before Parliament for consideration. It is envisaged that the passage of the Bill will enable Ghana join the other eight countries already implementing the CET. The CET when implemented would also help address the problem of cross-border smuggling, combat dumping and also bring economic benefits to the people of the sub-region.

Review of Tax Exemptions

Government is continuously reviewing the tax exemption regime in the country in order to create the appropriate fiscal space for development. A report by Ministry of Finance/Ghana Revenue Authority team estimates the average tax expenditure to GDP ratio to be 2.01%. The tax expenditure to GDP ratio for 2013, 2014 and 2015 are 1.68%, 1.82% and 1.98%, respectively. It has been observed that Metropolitan, Municipal and District Assemblies (MMDAs) include tax exemption provisions in contracts and dispensations to businesses and non-governmental organisations (NGOs) without authorisation and do not effectively verify or audit the exemptions granted. For this reason, the government of Ghana has agreed to progressively use tax credit schemes instead of outright exemptions and explore the use of Double Taxation Agreement (DTA) provisions to our advantage instead of granting outright exemptions (Ministry of Finance, 2016).

14

Determinants of government revenue in Ghana

Several variables determine the extent of government revenue in Ghana some of which include total tax revenue received, grants from developed economics, Ghana gross domestic product and the share of agriculture in GDP. Taxes have been the principal source of government revenue in Ghana. Taxes make up around two-thirds of total government revenue. A considerable amount of government's total revenue has also been from non-tax revenues such as grants, loans and divestiture (Twumasi, 2012). As depicted in Table 1, total tax revenue for 2014 and 2015 constituted 75.6% and 76.1% of total revenues and grants received for the periods respectively. This confirms Twumasi's findings stated above. Total tax revenues contribute 11.8% and 13% of the gross domestic product of the country in 2014 and 2015 accordingly. Other drivers of government revenues include grants and social security contributions.

Table 1: Proportion of Ghana Government's Tax Revenues in 2014-2015

Item	2014 (Jan-Sept) Actuals		2015 (Jan-Sept) Actuals	
	Amount (Gh¢ million)	Percentage of GDP	Amount (Gh¢ million)	Percentage of GDP
Total Revenue and Grants	17,721.7	15.6	22,724.6	17.0
Domestic Revenue	16,979.1	15.0	21,216.8	15.9
o/w Oil Revenue	2,182.3	1.9	1,260.2	0.9
Tax Revenue	13,388.8	11.8	17,287.0	13.0
o/w Oil Revenue	1,139.5	1.0	381.7	0.3

Table 1, continued

Non-tax Revenue	3,419.4	3.0	3,669.8	2.8
o/w Oil Revenue	1,042.8	0.9	878.5	0.7
Others (Social	170.9	0.2	259.9	0.2
Contributions)				
Grants	742.6	0.7	1,507.9	1.1

Source: Ministry of Finance (2016)

Another determinant of a government's revenue is Gross domestic product. Gross domestic product (GDP) measures of national income and output for a given country's economy. Gross domestic product (GDP) is equal to the total expenditures for all final goods and services produced within the country in a stipulated period of time. The Gross Domestic Product in Ghana was worth 37.86 billion US dollars in 2015. The GDP value of Ghana represents 0.06 percent of the world economy. GDP in Ghana averaged 9.63 USD Billion from 1960 until 2015, reaching an all-time high of 47.80 USD Billion in 2013 and a record low of 1.20 USD Billion in 1960 (World Bank, 2016).

Share of agriculture to GDP has been a major determinant of government revenue over the years especially through the exportation of raw products for example, cocoa, timber, robber among others. Unfortunately in recent years, Ghana has not done too well probably resulting from aging farmers, unpredictable rain patterns and lack of modern machinery (World Bank, 2016).

16

FDI and its effect on taxation

In any developed economy every single person is paying taxes and every government depends on the revenue collected from the taxes paid by the public. According to OECD (2015), tax is defined as a compulsory contribution to state revenue, levied by the government on workers' income and business profits, or added to the cost of some goods, services, and transactions. There are many different types of taxes and the terminology associated with it is very complex. Taxes on corporate income can be characterized as flat - constant rate is charged for all income levels; progressive - tax increases as income increases, or regressive-tax increases as income decreases. Taxes can be also classified as direct and indirect. Direct tax, as stated by OECD (2015) is a tax, which is levied on the income or profits of the person who pays it, rather than on goods or services and indirect tax is a tax levied on goods and services rather than on income or profits. Corporate Income Tax (CIT), personal, withholding, inheritance tax belongs to the first category, while VAT, tax on cigarettes, alcohol and fuel belongs to the latter. Having an idea about the tax terminology is crucial for deeper understanding of the topic.

In many economies the return on FDI may be subject to double taxation. Every foreign subsidiary is always subject to CIT in the host country. The realized profits can be taxed again under the marginal CIT in the home country of the parent company. Because this might discourage conducting international business, most economies avoid it by means of bilateral tax treaties based on the OECD Model Tax Convention (De Mooij & Ederveen 2003).

To what extent does taxation have an impact upon FDI decisions? This question has been the subject of a vast number of studies over the past 30 years and the answers which are provided differ widely (OECD, 2001). Some studies have considered the effects of tax systems generally, some have examined specific taxes (notably corporate income tax), and some have concentrated upon special tax incentives. Theoretical studies suggest that taxation ought to be very important, since it influences both production costs and the net profits that are available for distribution. However, econometric studies, which seek to establish the relationship, if any, between changes in taxation and levels of FDI in a particular country, are mostly inconclusive, no doubt because there are so many other variables that might influence FDI flows (Easson, 2004). Conforming to Pirnia and Jacques (2000) the little importance of taxes does not mean that they do not have any impact on inflows of FDI and it is not a coincidence that FDI in some tax havens grew more than fivefold between 1985 and 1994, to over $200 billion.

According to Easson (2004), taxes generally:

1. Play little part in the initial decision to invest abroad: Since taxation affects the net profit available for distribution or reinvestment, this might suggest that high tax rates would induce a company to invest abroad in economies where ETR is low;

2. May play a more important role in location decisions: Taxes in potential host countries do come into consideration once the decisions to invest abroad have been made (Easson, 2004). Most econometric studies say that investors are mostly influenced in their decisions by market and political factors and that tax policy appears to have little effect on the location of FDI. However it

18

is fairly accepted that tax considerations do influence FDI decisions at the margin (UNCTAD, 1996);

3. Are more important for some types of investment than for others: Distinction between market oriented and export oriented investments should be pointed very carefully (Easson, 2004). Market oriented FDI would seem to be relatively little affected by considerations of taxation except, perhaps, where the host country tax is unusually burdensome, because taxes that affect the cost of production will also be borne by domestic and other Multinational Enterprise (MNE) competitors and will normally be passed on to consumers. By contrast, it is widely accepted that export oriented FDI is more sensitive to the host country tax burden (Easson, 2004). This finding is not really surprising because export-oriented firms such as clothing manufacturers are operating in highly competitive markets with very slim margins (Pirnia & Jacques, 2000); and

4. Are growing in importance: Most of the empirical studies done before 1990, found that taxation was a relatively minor consideration in most FDI decisions (Easson, 2004). More recent studies, however, have tended to suggest the opposite. "The results of this recent work indicate that the location of real capital by manufacturing firms is sensitive to taxation and has become more so over time" (OECD, 2001, p. 256). There are a number of explanations for this phenomenon. One of them is: as trade barriers between countries are eliminated, the remaining obstacles become more important (Easson, 2004).

19

Empirical Review

As stated before, extensive empirical studies have been conducted on the impact of FDI flows on the various economic indicators including economic growth and inflation in Ghana (Andinuur, 2013; Asamoah, 2013; Osei, 2014; Antwi & Zhao, 2012; Antwi, Mills, Mills, & Zhao, 2013). Yet, none of them studied the impact of FDI inflows on government revenue in Ghana. Available studies in this area have jurisdictions outside Ghana. Some of the studies have found that FDI inflows had positive impact on the tax revenue (Bunescu & Comaniciu, 2014; Gropp & Kostial, 2000; Sarisoy & Koc, 2010, Chaudhary & Mahmood, 2013; Okey, 2013) whereas others disagree to this assertion.

In one of these studies, Gropp and Kostial (2000) used the panel data of nineteen OECD countries to find relationship between FDI and tax revenue. They found a weak correlation between FDI and corporate income tax and found a strong positive impact of FDI inflows on the profit tax and on the total tax revenue. On the other hand, Sarisoy and Koc (2010) investigated the impact of FDI inflows on the corporate tax revenue in 21 OECD countries during the period 1981 and 2008 and found that FDI inflows had positive impact on the corporate tax revenue.

Chaudhary and Mahmood (2013), examined the effect of FDI inflows on the tax revenue in Pakistan during the period 1972-2010 by using ARDL and found that FDI inflows had positive impact on the tax revenue. In another study, Okey (2013) investigated the impact of FDI on the tax revenue in 8 West African countries during the period 1989-2009 by using panel data analysis and found that FDI had positive impact on the tax revenue. On the

20

other hand, Bunescu and Comaniciu (2014) examined the bivariate correlation between tax revenues and causal factors in 27 EU member countries and found that there was a weak correlation between tax revenue and FDI inflows.

In his study "Tax Policy and Foreign Direct Investment", Hartman (2011) discusses the competition between countries in regard to taxes for foreign investments. He begins his study by presenting legal reforms that give the chance to multinationals to benefit from tax differences between countries. Specifically he presents the legal reform of home countries not taxing the benefit earned abroad as it would result in double taxation. At the same time he states that the tax is not the only determinant of investments. He clarifies his point of view by saying that firms will profitably invest abroad as long as the after-tax return abroad exceeds the after-tax return at home. At the same time the author makes a distinction between the foreign investments as issuance of new stock and reinvestment of retained earnings in the host country.

He points out, that tax is crucial for the choice between these two options. It is explained that the reinvestment of retained earning pays less tax than the issuance of new stock and transfer of funds because for the second option, the stock, has to pay home country tax (which supposedly is higher). Following the same logic Hartman suggests that higher home tax would reduce the amount of distributed profits for the home country and therefore decrease the tax revenue. One thought worth indicating is the fact that firms with mature foreign operations are not sensitive to home country taxation because tax for mature firms is an avoidable fixed cost (Hartman, 2011).

21

In their study "New Results on the Effects of Tax Policy on the International Location of Investment" Boskin and Gale (2012) analysed the research conducted by David Hartman and brought more recent evidence and thought to the issue of tax competition in regard to investments. Like Hartman, the authors begin their study by providing the foundation of tax incentives for investment location, specifically they speak about the Accelerated Cost Recovery System, which was meant to increase U.S. capital formation and stem the flow of U.S. investment abroad. They discuss the fact that the location of capital is not primarily motivated by the level of corporate income tax, but, as well, access to markets political considerations, labour costs and expected economic conditions. At the same time, Boskin and Gale consider that, nevertheless, tax is considered to have some effect upon the location of investments. The authors state that the Foreign Direct Investment is not directly interpreted as Domestic Net Investment because it does not include the inflows of funds that are used to purchase real capital assets. Therefore FDI should be interpreted as net foreign investment.

In contrast to Hartman's study, the research conducted by Boskin and Gale (2012) are more statistical. They present statistical figures from the Bureau of Economic Analysis regarding United States of America. In their study they found that FDI had risen by 2000% from 1950 to 1984. At the same time, this growth was oscillating along the period which is explained by varying phases of the U.S. economy. The statistic also shows a dominance of investments financed by debt and equity over reinvestment of retained earnings.

Their model is very similar to the model of Hartman and the elasticities are as well very close. The results present a negative elasticity of 2.9 between the ratio of FDI and GNP to the relative tax term. This means that an increase in the tax rate of 1% would decrease the level of incoming Foreign Direct Investments by 2.9 %, if everything else is kept constant. During the analysis, Boskin and Gale have concluded that the reinvestment of retained earnings is more sensitive to tax changes than the FDI financed by transfers (Boskin & Gale, 2012). Boskin and Gale's research confirm the conclusion stated by Hartman and present strong evidence for the negative relationship between tax and FDI inflows even though their model is sensitive to the period and the functional form of the regression.

Slemrod (2010) has conducted a study - "Tax Effects on Foreign Direct Investment in the United States: Evidence from a Cross – Country Comparison" in regard to the relationship between tax and FDI as well. He starts his work by pointing the drawbacks of the previous studies on the same matter. Slemrod sets forward that previous studies have used the average tax rate and attempted to use only the host country tax. He considers that using the effective marginal tax rate for both the home and host country would yield more objective results. Besides all mentioned above, the author regards all previous empirical results close to the ones provided by Hartman's work (Slemrod, 2010).

Another issue that Slemrod is concerned about is the interpretation and collection of the data for FDI. The Bureau of Economic Analysis describes FDI as "the earnings retained by subsidiaries and branches of foreign parents and transfers of funds from foreign parents to the U.S. firm, including both

23

debt and equity". The author considers that FDI does not correspond directly to any measure of real investment because it excludes the investments financed by funds raised locally. At the same time, the data for the previous studies was collected using benchmark surveys for 1959, 1974 and 1980. For non-benchmark years the data was constructed by manipulating the benchmark information. At the same time, in 1974 the minimum ownership criterion for FDI was decreased from 25% to 10%. Some of the previous studies have ignored these circumstances which are of crucial importance to the study. Ignoring these issues would lead to subjective economic modelling. Slemrod had replicated the models from previous studies with the adjustments for the issues stated above and has found that the marginal tax rate has significant negative effect on transfers of funds but not on retained earnings. In order to get significant results for retained earnings, the author included more nontax variables in the model (Slemrod, 2010).

Furthermore, Slemrod analyses the effect that tax has upon inward FDI for U.S. He states that U.S. tax rate has an effect upon investments coming from countries that have territorial tax policies, not source tax policies. Therefore, investments coming from countries that have foreign tax exemptions are more sensitive to changes in host country tax rates than investments coming from countries which offer tax credits (Slemrod, 2010). Slemrod considers that the home country tax is very relevant to the analysis of the sensitivity of host country taxation to FDI. He motivates this by stating that the after tax return to investment in the home country is affected by the home country tax and because the home country tax rate is reflected in the effective tax rate for countries that have tax credit policies (Slemrod, 2010).

24

Moreover, the author carries on empirical data analysis of the model presented above for different categories of investing countries. The results suggest weak relationship between tax and FDI and lack of difference between taxation on transfers for countries which benefit from tax exemptions and countries which benefit from tax credits. The author explains this similarity of the sensitivity for the two taxing systems by unreliability of the data and the ability of firms from tax credits countries to engage in financial transactions that would benefit to a higher extent than expected from the tax rate differences (Slemrod, 2010).

As a conclusion, Slemrod points out that the host country tax rate has an ambiguous effect upon Foreign Direct Investment due to financial instruments that can be used in order to hedge the tax rate. In order to account for the relationship between tax and investment, more financial variables have to be taken into consideration (Slemrod, 2010).

CHAPTER THREE

RESEARCH METHODS

Introduction

This section contains a detailed description of the approach used in the study. It presents the model specification and estimation strategy. It also discuses the nature and sources of data employed for the study.

Model Specification

To capture the effect of foreign direct investment on government revenue, the study used FDI (% of GDP), Per capita GDP (annual %), Education, and Urbanisation as independent variables and tax revenue (% of GDP) as dependent variable.

Theoretical model

The theoretical model underlying government tax revenue is looked at from the point of view of determinants of government tax revenue. Share of agriculture to GDP (Agric) has been a major determinant of government revenue over the years especially through the exportation of raw products for example, cocoa, timber, robber among others. Unfortunately in recent years, Ghana has not done too well probably resulting from aging farmers, unpredictable rain patterns and lack of modern machinery (World Bank, 2016).

For macroeconomic issues, one of the main determinants of government revenue is FDI. This model is of the view that FDI depicts government tax revenue. This means that, for developing countries to increase

total revenue there is the need to create an enabling environment to attract multinational firms into the host country. This is not the same for developed countries where there is abundance of capital. The theoretical model also considers the effects of Per Capita GDP, Education and Urbanization as government tax revenue determinant. Accordingly, studies have noted that, an important reason for the creation of the theoretical model was to be able to generate predictions for the effect of economic processes (Bishop, 1997). In this regard, government tax revenue, which comes about through the effect of FDI, Per Capita GDP, Education, and Urbanisation will lead to rise in total revenues in the host country. This means that low levels of FDI, Per Capita GDP, Education, and Urbanisation, affects the flow of government tax revenue negatively. In same way, high levels of FDI, Per Capita GDP, Education, and Urbanisation positively affects government tax revenue.

Thus FDI, per capita GDP (GDPpc), urbanisation, share of agriculture to GDP, and education are expressed as a function of government tax revenue, that is Tax revenue $= f$ (GDPpc, Urbanisation, Agric, FDI).

Empirical model

The electric theory postulated by Dunning (1981) informed the specification of this model. In addition, this model was derived from the work of Mahmood and Chaudhary (2013), in which the impact of FDI on tax revenue in Pakistan was assessed with tax revenue as the dependent variable. Mahmood and Chaudhary however, did not consider the effects of other variables like Education and Urbanisation. These variables were best known to

27

have an impact on government revenue. The inclusion of other explanatory variables was largely informed by both theoretical and empirical literature.

Chaudhary and Mahmood (2013) found a positive relationship between FDI and tax revenue suggesting the FDI is helpful in raising general welfare through raising the tax revenue to the government. Alternatively, Boskin and Gale (2012), and Hartman (2011) presented strong evidence for the negative relationship between tax and FDI inflows, even though their model is sensitive to the period and the functional form of the regression. It is worth nothing that on assessing the determinants of tax revenue, the same variables cut across irrespective of the theory (Gropp & Kostial, 2000; Sarisoy & Koc, 2010, Chaudhary & Mahmood, 2013; Odabas, 2015; Okey, 2013). Chaudhary and Mahmood (2013) identified FDI and GDP per person as the determinants of tax revenue in theory. Similarly, Odabas (2015) identified the following factors as determinants of tax revenue: Net FDI inflows, and Real GDP per capita growth. The Model of the study is as follows:

$$TRG_t = f(\ FDIG_t, \ PGDP_t, EDU_t, \ URB_t)$$

Where:

TRG_t = Tax Revenue as percentage of GDP at time t;

$FDIG_t$ = Foreign Direct Investment inflow as percentage of GDP at time t;

$PGDP_t$ = Per capita GDP (annual %) at time t;

EDU_t = Level of Education at time t; and

URB_t = Urbanisation rate at time t.

Independent variables

Foreign direct investment

According to the World Bank (2016), Foreign direct investments are the net inflows of investment to acquire a lasting management interest (10% or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. FDI flows are measured in USD and as a share (percentage) of GDP. FDI creates stable and long-lasting links between economies (OECD, 2014). FDI generally has a positive effect on economic growth and income levels of a country so there will be greater aggregate demand and economic activities in a country which could help the government generate more indirect taxes (Chaudhary & Mahmood, 2013). Hence, FDI is may have a positive effect on tax revenue in Ghana (as seen in MacDougall, 1960; Streeten, 1969; Caves, 1971). The expected sign for FDI (percentage of GDP) is $FDIG_t$.

Per capita GDP

Per capita GDP is a measure of the total output of a country that takes gross domestic product (GDP) and divides it by the number of people in the country. The per capita GDP is especially useful when comparing one country to another, because it shows the relative performance of the countries. A rise in per capita GDP signals growth in the economy and tends to reflect an increase in productivity. Per capita GDP is sometimes used as an indicator of standard of living, with higher per capita GDP equating to a higher standard of living (Investopedia, 2016). Per capita GDP is a proxy for the development of

29

a country regarding its ability to pay and collect taxes. It is expected to have a positive relationship with tax revenue since the tax revenue-GDP ratio (Addison & Levin, 2008; Ghura, 1998; Baunsgaard & Keen, 2009; Davoodi & Grigorian, 2007; Gupta, 2007). The expected sign for per capita GDP (annual %) is $PGDP_t$.

Education

The level of education also determines tax potential in the preferred specification. The more educated the workforce, the more value added in the economy that can be taxed due to a larger formal sector and higher incomes. Also, people with higher education and formal employment are more likely to have a deeper understanding of the role of taxation in the economy or society. Hence, education (EDU_t) is expected to have a positive effect on tax morale (Noorbakhsh, Palony, & Youseef, 2001; Kucera, 2002). Tertiary school enrolment as a percentage of total population is used as a proxy for education. The level of Per Capita GDP has been found to be insignificant once the level of education is included (Bird, Martinez-Vazquez, & Torgler, 2004; Morrisey, Prichard, & Torrance, 2014; Tait, Graetz, & Eichengreen, 1979). However, this contrasts with studies in tax determinants literature, from the seminal Lotz and Morss (1967) over Adam, Bevan and Chambas (2001) to Gupta (2007), and Drummond, Daal and Srivastava (2012).

Urbanisation

Urbanization (urban population), which is measured by percentage of population living in urban area, could be used as proxy to capture the demand

30

for public services because most government sector activities are concentrated in cities which also results in high tax revenue from urban areas. Tax collection becomes more efficient in urban areas, since the general public is more likely to be well-educated and do better in understanding and complying with tax codes. Therefore, URB_t is expected to have a positive relationship with tax-to-GDP ratio (Al-Hakami, 2008; Davoodi & Grigorian, 2007; Khattry & Rao, 2002).

Dependent variable

Tax revenue

Tax revenue is defined as the revenues collected from taxes on income and profits, social security contributions, taxes levied on goods and services, payroll taxes, taxes on the ownership and transfer of property, and other taxes. Total tax revenue as a percentage of GDP indicates the share of a country's output that is collected by the government through taxes. It can be regarded as one measure of the degree to which the government controls the economy's resources. The tax burden is measured by taking the total tax revenues received as a percentage of GDP. This indicator relates to government as a whole (all government levels) and is measured in USD, USD per capita, percentage of GDP and annual growth rate (OECD, 2015). Tax revenue is influenced by manifold factors that are closely associated with it. The degree of influence may vary according to intensity of the relation between the variables. Either the different variables affect the tax revenue with varied impact during a particular period or the same variable may affect with

31

different intensity across different periods (Karagoz, 2013). The expected sign for tax revenue (percentage of GDP) is TRG_t.

Estimation Strategy

The estimation procedures employed in the assessment of the effect of foreign direct investment on government revenue in Ghana is presented in this section. Time series data on each of the variable were used. This section explains the various time series techniques used for the analysis.

Unit root testing

First of all, the study discusses the Augmented Dickey-Fuller (ADF) test developed by Dickey and Fuller (1981). It checks the unit root problem in the time series. It proposed the following equation with intercept to detect the unit root problem.

$$\Delta Y_t = \alpha + \delta Y_{t-1} + \gamma_1 \Delta Y_{t-i} + \gamma_2 \Delta Y_{t-2} + \dots\dots + \gamma_m \Delta Y_{t-m} + u_t , \quad (2)$$

Where: Δ is a difference operator, and u_t is a residual at time period t. Y_t denotes the time series. $\gamma_1 \Delta Y_{t-1} + \gamma_2 \Delta Y_{t-2} + \dots\dots + \gamma_m \Delta Y_{t-m}$ is used to correct the serial correlation. The equation (2) includes intercept α only and it can also be assumed with both intercept and time-trend T. Then, the test is as follows:

$$\Delta Y_t = \alpha + \lambda T + \delta Y_{t-1} + \gamma_1 \Delta Y_{t-1} + \gamma_2 \Delta Y_{t-2} + \dots\dots + \gamma_m \Delta Y_{t-m} + u_t , \quad (3)$$

ADF test checks the null hypothesis ($\delta = 0$). That means, the time series has unit root problem and rejection of null hypothesis proofs the stationarity of a time series.

Phillips and Perron (1988) also proposed the unit root test based on ADF methodology. The difference of Phillip-Perron (PP) test from ADF test is dealing with heteroscedasticity and serial correlation. PP test ignores $\gamma_1 \Delta Y_{t-1} + \gamma_2 \Delta Y_{t-2} + ... + \gamma_m \Delta Y_{t-m}$ from ADF equation (3). It removes the serial correlation by giving ranks to the residuals. Equation of PP test is as follows:

$$\Delta Y_t = \alpha + \lambda T + \delta Y_{t-1} + u_t , \qquad (4)$$

PP test uses the modified statistic Z_t and Z_δ which are as follows:

$$Z_t = \sqrt{\frac{\hat{\sigma}^2}{\hat{\lambda}^2}} t_{\hat{\delta}} - \frac{1}{2}\left(\frac{\hat{\lambda}^2 - \hat{\sigma}^2}{\hat{\lambda}^2}\right)\left(\frac{n\left(s.e.\left(\hat{\delta}\right)\right)}{\hat{\sigma}^2}\right) , \qquad (5)$$

$$Z_\delta = n\hat{\delta} - \frac{1}{2}\frac{n^2\left(s.e.\left(\hat{\delta}\right)\right)}{\hat{\sigma}^2}\left(\hat{\lambda}^2 - \hat{\sigma}^2\right), \qquad (6)$$

Where, $s.e.\left(\hat{\delta}\right)$ is the standard error of $\left(\hat{\delta}\right)$. $t_{\hat{\delta}}$ is the test statistic under the estimates of $\hat{\sigma}^2$ and $\hat{\lambda}^2$, which are given below:

$$\sigma^2 = \lim_{T \leftarrow \infty} T^{-1} \sum_{t=1}^{T} E\left(u_t^2\right) , \qquad (7)$$

$$\lambda^2 = \lim_{T \rightarrow \infty} \sum_{t=1}^{T} E\left(\frac{1}{T}\sum_{t=1}^{n} s_t^2\right), \qquad (8)$$

Where, $S_T = \sum_{t=1}^{T} u_t$ and T is the time-trend. Z_t and Z_δ follow the same distribution as the t-statistic of ADF test under the null hypothesis ($\delta = 0$). PP test has an advantage over ADF test that it robust heteroscedasticity in the error term (u_t). Secondly, it does not need to specify the lag length for its estimation.

Ng and Perron (2001) developed efficient and a modified version of PP test by using generalized least square detrending data. This procedure is also efficient for large negative errors and can do better estimation than PP test. The efficient and modified tests are as follows:

$$MZ_a^d = (T^{-1}(\gamma_T^d)^2 - f_0)/2k, \qquad (9)$$

$$MSB^d = (k/f_0)^{½}, \qquad (10)$$

$$MZ_t^d = MZ_a^d \times MSB^d, \qquad (11)$$

$$MPT_T^d = ((\acute{c})^2 k + (1 - \acute{c}) T^{-1})(\gamma_T^d)^2/f_0, \qquad (12)$$

Where, the statistics MZ_a^d and MZ_t^d are efficient versions of PP test and

$$k = \sum_{t=2}^{T} (\gamma_{t-1}^d)^2/T^2, \acute{c} = \text{-13.5.}$$

$$f = \sum_{j=-(T-1)}^{T-1} \Theta(j).k(j/l), \qquad (13)$$

where l is a bandwidthparameter (which acts as a truncation lag in the covariance weighting) and $\theta(j)$ is the j-th sample auto covariance of residuals.

Zivot and Andrews (1992) modified the PP and ADF unit root test, which also considers the one-unknown structural break. The ADF test may fail in identifying the true result in the presence of a structural break whether time series is stationary or not. ADF and PP tests do not allow for structural break in data. Zivot-Andrews test uses the sequential ADF test to find the break with the following equations.

34

Model A: $\Delta Y_t = \mu_1^A + \gamma_1^A t + \mu_2^A DU_t(\lambda) + \alpha^A Y_{t-1} + \sum_{j=1}^{k} \beta_j \Delta Y_{t-j} + \varepsilon_t$ (14)

Model B: $\Delta Y_t = \mu_1^B + \gamma_1^B t + \gamma_2^A DT^*_t(\lambda) + \alpha^B Y_{t-1} + \sum_{j=1}^{k-1} \beta_j \Delta Y_{t-j} + \varepsilon_t$ (15)

Model C: $\Delta Y_t = \mu_1^C + \gamma_1^C t + \mu_2^C DU_t(\lambda) + \gamma_2^c DT^*_t(\lambda) + \alpha^C Y_{t-1} +$

$\sum_{j=1}^{k-1} \beta_j \Delta Y_{t-j} + \varepsilon_t$ (16)

Where, $DU_t(\lambda)$ is 1 and $DT^*_t(\lambda) = t - T\lambda$ if $t > T\lambda$, 0 otherwise. $\lambda = T_B / T$, T_B is for a possible break point in the time series. Model A allows for a change in the intercept of the series, Model (B) allows for a change in the trend of a series, while Model (C) allows changes in both intercept and trend.

Co-integration

After testing the unit root problem in the time-series variables, the co-integration test might be applied to find the long-run relationship among the variables. Co-integration states the long-run equilibrium among variables, which may have the shock of disequilibrium in the short-run from long-run, but it will move again in long-run equilibrium (Harris & Sollis, 2003). The study uses Auto-regressive Distributed Lag (ARDL) bound testing technique. It has been developed by Pesaran and Smith (2001). ARDL can be applied if variables have mixed order of integration, that is I(0) and I(1). This approach takes the optimum lag length for each variable separately in the model which helps in the data generating process from a general to a specific model. The problems resulting from non-stationarity of data can also be avoided by using an ARDL approach (Laurenceson & Chai, 2003). The study uses the Schwarz

35

Bayesian Criterion (SBC) to find the optimum lag length for the ARDL model. To find the co-integration amongst tax revenue, FDI, Per capita GDP, Level of Education and Urbanisation rate, ARDL model is as follows:

$$\Delta TRG_t = \delta_0 + \delta_1 TRG_{t-1} + \delta_2 FDIG_{t-1} + \delta_3 PGDP_{t-1} + \delta_4 EDU_{t-1} + \delta_3 URB_{t-1} + \sum_{i=1}^{p}$$

$$\beta_{1i} \Delta TRG_{t-i} + \sum_{i=0}^{q} \beta_{2i} \Delta FDIG_{t-I} + \sum_{i=0}^{r} \beta_{3i} \Delta PGDP_{t-I} + \sum_{i=0}^{s} \beta_{4i} \Delta EDU_{t-I} + \sum_{i=0}^{t} \beta_{5i}$$

$$\Delta URB_{t-I} + \lambda D_{TRG} + \varepsilon_t \qquad (17)$$

In equation (17), first difference of TRG is the dependent variable, the null hypothesis is (H_0: $\delta_1 = \delta_2 = \delta_3 = \delta_4 = \delta_5 = 0$) and alternate hypothesis is ($\delta_1 \neq \delta_2 \neq \delta_3 \neq \delta_4 \neq \delta_5 \neq 0$) which shows existence of long run relationship in the model, δ_{f0} is a constant and ε_{ft} is error term. D_{TRG} is included in the equation for possible structural break and to complete the information. This is also shown as $F_{TRG}t$ ($TRG_t/FDIG_t$, $PGDP_t$, EDU_t, URB_t). If co-integration exists in the model, then long run and short run coefficients will be calculated. Error correction term can be used to find the short-run relationship in the model. Error correction model is as follows:

$$\Delta TRG_t = \gamma + \sum_{i=1}^{p} \beta_{1i} \Delta TRG_{t-I} \sum_{i=0}^{q} + \beta_{2i} \Delta FDIG_{t-I} + \sum_{i=0}^{r} \beta_{3i} \Delta PGDP_{t-I} + \sum_{i=0}^{s} \beta_{4i}$$

$$\Delta EDU_{t-I} + \sum_{i=0}^{t} \beta_{5i} \Delta URB_{t-I} + \phi D_{TRG} + \varphi ECT_{t-1} + \zeta_t \qquad (18)$$

φ is showing the speed of adjustment from short run disequilibrium to long run equilibrium. Afterwards, diagnostic tests are used to check the normality, functional form, heteroscedasticity and serial correlation in the

model. *CUSUM* and *CUSUMsq* statistics are used to ensure the stability of parameters.

Data Source

The study used annual time series data covering 1983 to 2015. The data sets for FDI, Per Capita GDP, Level of Education, and Urbanisation rate were sourced from World Bank-World Development Indicators Database whereas data sets for government tax revenue were sourced from yearly budget statements of the Ministry of Finance of Ghana as seen in Table 2.

Table 2: Variables and Data Sources

Variable Name	Description	Data Source
TRG	Ratio of Tax Revenue to GDP	Ministry of Finance of Ghana
FDI	Ratio of Foreign Direct Investment to GDP	World Bank-WDI
PGDP	Ratio of Per capita to GDP	World Bank-WDI
EDU	Ratio of Education to GDP	World Bank-WDI
URB	Ratio of Urban Population to GDP	World Bank-WDI

Validity and Reliability of Data

Validity and reliability of the data was ensured by retrieving information from recognised and authentic online sources recommended by the supervisor (who happens to be an expert in the research area) for the study. These online data sources included World Development Indicators (WDI),

African and Ghana's Ministry of Finance. According to Lovell and Lawson (1970), validity depends upon judgment of experts who after examining the contents decide what they think it measures. Also, a reliable instrument is the one that consistently produces the expected results (Mulusa, 1990).

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter covers the analysis of results as well as its interpretation with respect to secondary time series data collected from World Bank (WDI) and Ministry of Finance of Ghana. The information presented in this chapter serves as input for discussions and interpretation.

Descriptive Statistics of Variables

Table 3 presents information on the mean, median, standard deviation, skewness, kurtosis, minimum, and maximum as well as the number of observations, spanning 1983 to 2015. It can be observed that, dispersion of variables over the period is quite high. The mean of the variables ranges from 1.14 per cent, as recorded by Education, to 17.94 per cent, as also recorded by Tax revenue. It is also worth noting that all explanatory variables have their means ranging from 1.14 per cent to 3.94 per cent.

Again, the standard deviation of the variables over this period was generally low especially for Urbanisation (0.51 per cent), Education (0.78 per cent) and FDI (1.25 per cent). Per Capita GDP recorded the highest standard deviation of 6.23 per cent.

The skewness statistics is a measure of asymmetry of the distribution of the series around its mean. The skewness of a symmetric distribution, such as the normal distribution, is zero. The coefficients of skewness indicate that all the series have positively skewed returns implying that all of the series have long lean right tails.

The kurtosis statistic indicates the peakedness or flatness of the distribution of the series. The kurtosis of a normal distribution is 3. The coefficients of kurtosis show that almost all the variables are leptokurtic. It is worth noting that all the explanatory variables, except for Per Capita GDP, had kurtosis figures less than 3. Kurtosis figure for FDI was 2.11 per cent; Education was 2.68 per cent; and Urbanisation was 2.70.

Table 3: Descriptive Statistics of Variables

Variables	Mean	Median	SD	Skewness	Kurtosis	Min	Max	Observations
Tax Revenue	17.94	22.75	4.13	5.10	32.47	5.71	52.08	33
FDI	3.15	2.11	1.25	3.12	2.11	0.05	9.52	33
Per Capita GDP	3.82	4.00	6.23	2.91	31.22	-25.00	71.00	33
Education	1.14	1.10	0.78	0.43	2.68	0.00	4.19	33
Urbanisation	3.94	3.95	0.51	0.02	2.70	2.30	5.31	33

Source: Author computation

Trend Analysis

Trend analysis is an aspect of technical analysis that tries to predict the future movement of a variable based on past data. Trends in GDP, FDI, share of agriculture to GDP, and tax revenue in Ghana from 1983 to 2015 is covered in this section.

Trends in GDP

GDP measures national income and output for a given country's economy. GDP is equal to the total expenditures for all final goods and services produced within the country in a stipulated period of time. The GDP in Ghana was worth 37.54 billion US dollars in 2015. The GDP value of Ghana represents 0.06 per cent of the world economy. GDP in Ghana averaged 9.63 USD Billion from 1960 until 2015, reaching an all-time high of 47.80 USD Billion in 2013 and a record low of 1.20 USD Billion in 1960 (World Bank, 2016). Generally, GDP in Ghana has taken an upward trend (as seen in figure 1) from 1960 to 2015.
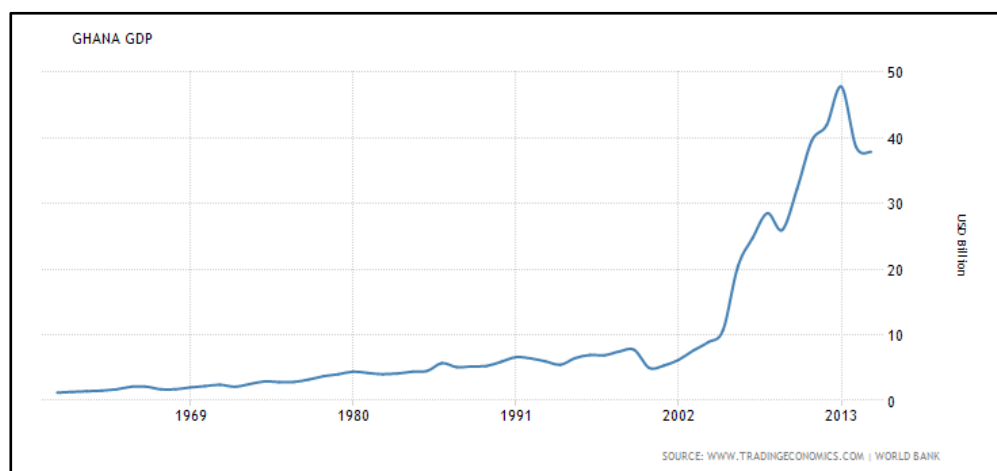

Figure 1: Trends in Ghana's gross domestic product (1960-2015)

Source: World Bank (2016)

42

However, part of the increases in gross domestic product over time is due to increments in the price of goods and services rather than increments in real economic output. When this change in prices has been accounted for, then we have what is called real GDP. For example, Ghana's GDP was just over 18% in nominal terms in 2014; but prices had increased by at least 16% in the same year, implying that in real terms Ghana's GDP had grown by a paltry 2% in 2014. Thus, a GDP number that has not been accounted for by price increments in the economy is referred to as nominal GDP. In fact, it would be misleading to say Ghana's economy grew by 18% in 2014 when prices of goods and services increased by 16%; therefore it is right to say that the cedi value of Ghana's economy increased by 18% in 2014. And that is an ineffective way to track the economy over time (Ackon, 2016).

Trends of foreign direct investment (net inflows % of GDP) in Ghana

According to the World Bank, Foreign direct investment are the net inflows of investment to acquire a lasting management interest (10% or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments (Word Bank, 2016).   Foreign direct investment, net inflows (% of GDP) in Ghana was 8.43 as of 2015. Its highest value over the past 33 years (1983-2015) was 9.52 in 2008, while its lowest value was -0.06 in 1983 (figure 2). As depicted in figure 2, foreign direct investment (net inflow as percentage of GDP) has generally been high in over the years.
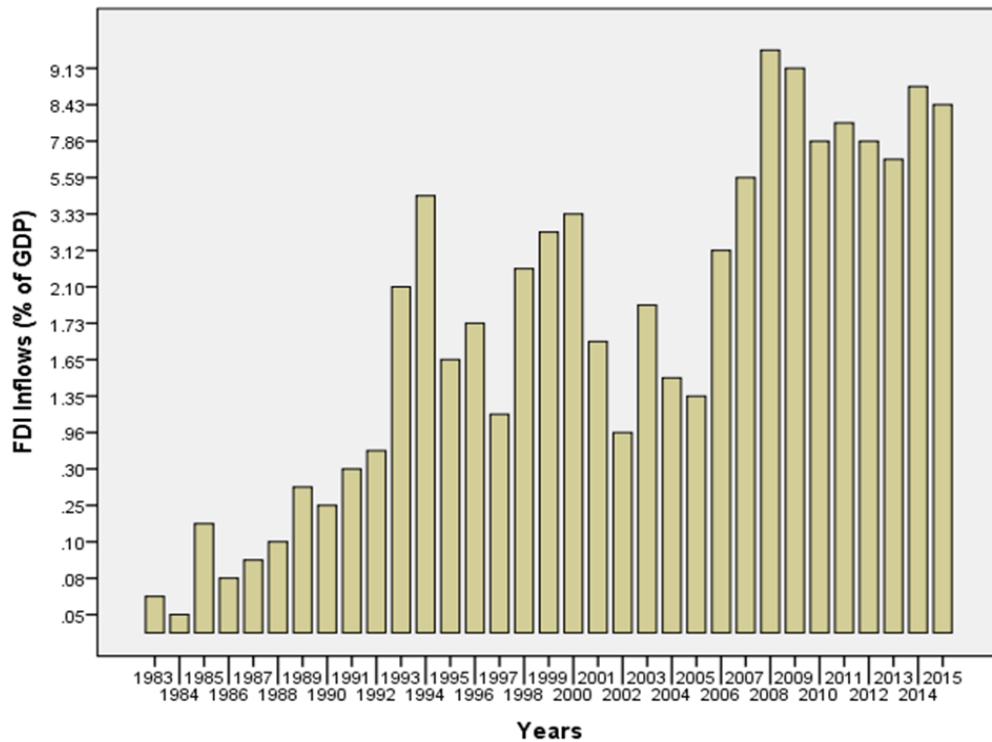
Figure 2: Trends in FDI (% of GDP) in Ghana (1983-2015)

Source: World Bank (2016)

Ghana's wealth of resources, democratic political system and dynamic economy, makes it undoubtedly one of Africa's leading lights. Gaining the world's confidence with a peaceful political transition and a grounded and firm commitment to democracy has helped in expediting Ghana's growth in FDI in recent years. Ghana has attracted the attention of well-known international businesses, investing in all sectors of our economy. All these investors have come to Ghana because they know we have a wonderful conducive social, political and economic environment in which they can invest, grow and be successful. Building on significant natural resources, our dear nation is committed to improving its physical infrastructure. Moreover,

Ghana has recently embarked on an ambitious but achievable reform programme to improve the investment climate for both local and international investors. These efforts have paid off tremendously with Ghana being ranked the best place for doing business in West Africa, ahead of Nigeria and Cote d'Ivoire, according to the Ease of Doing Business Report. Ghana ranked 108, an improvement from the 111 rank in the previous report. The indicators as described in the report includes: getting electricity (moved from 122 in 2016 to 120 in 2017), resolving insolvency (moved from 158 in 2016 to 155 in 2017) & trading across borders (moved from 167 in 2016 to 154 in 2017) (GIPC, 2016).

Trends of share of agriculture to GDP in Ghana

Share of agriculture to GDP is has been a major determinant of government revenue over the years especially though the exportation of raw products for example, cocoa, timber, robber among others. Unfortunately in recent years, Ghana has not done too well especially since 1983 when it recorded its highest growth of 54.36% resulting from aging farmers, unpredictable rain patterns and lack of modern machinery as shown in figure 3 (World Bank, 2016).
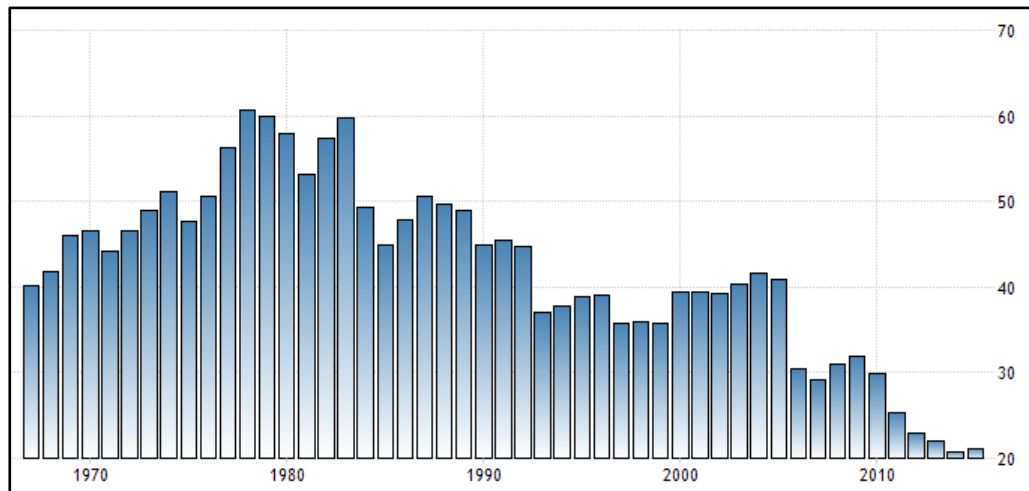
45

Figure 3: Share of agriculture to GDP (1967-2015)

Source: World Bank (2016)

Trends of tax revenue in Ghana

Tax revenue refers to compulsory transfers to the central government for public purposes. Certain compulsory transfers such as fines, penalties, and most social security contributions are excluded. Refunds and corrections of erroneously collected tax revenue are treated as negative revenue. Tax revenue (% of GDP) in Ghana was last measured at 17.895 in 2015; it averaged 17.94% from 1983 to 2015. The highest value over the past 33 years (1983-2015) was 52.08% in 1983 and the lowest value was 5.71% in 1997 (World Bank, 2016). Generally, Ghana government's tax revenue (% of GDP) has been low over the period (1983-2015) under study as shown in figure 4.

46
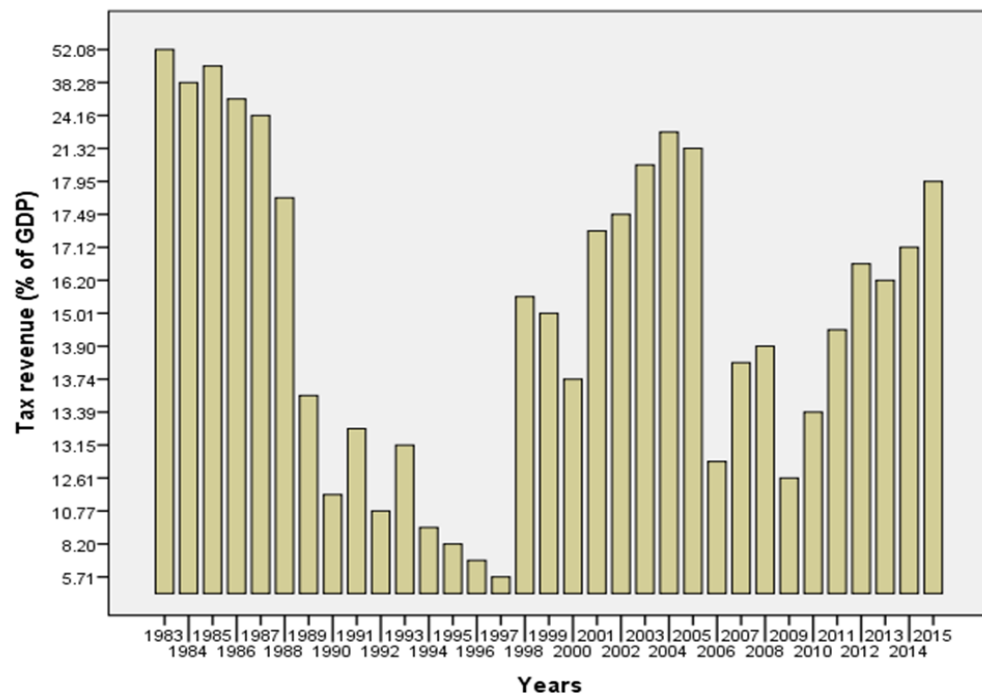
Figure 4: Trends in tax revenue in Ghana, 1983-2015

Source: Ministry of Finance (2016)

According to Herkenrath (2010), some multinational corporations use accounting tricks to deprive developing countries of billions in tax revenues every year. In Ghana recently, a subsidiary of the corporation in Ghana paid Zug-based Company Bevman Services AG 1.5 million francs for services which, according to investigations by ActionAid, were most likely never provided. The corporation thus circumvented the Ghanaian business tax of 25%. All that could be retained by the developing country was the modest take from the withholding tax of just 8%. Under the new double taxation agreement with Switzerland, Ghana is still able to levy that tax on payments for services. The remaining 17%, which after all is about a quarter million francs, is lost to Ghana (Herkenrath, 2010).

47

In addition to tax dodging by multinational firms, low real GDP and low share of Ghana's Agriculture to GDP among others have accounted for the downward trend in tax revenue in Ghana over the years.

Unit Root Test

First of all, the study used the ADF, Phillip-Perron and Ng-Perron tests to check the unit root problem in all variables in the model. Results are given in the Table 4. Table 4 shows that, all variables at level with all tests, used in analysis are non-stationary.

Table 4: Unit Root Test at Level

Variable	ADF	PP	Ng-Perron			
			MZ_a	MZ_t	MSB	MPT
Model Specification: Intercept						
TRG_t	1.549(1)	-1.543(3)	-4.481(1)	-1.490	0.333	5.479
FDI_t	2.961(6)	-0.777(3)	6.168(1)	22.064	3.570	17.080
$PGDP_t$	-1.392(2)	-1.277(3)	0.634(1)	0.516	0.814	14.991
EDU_t	2.521(6)	-0.598(3)	5.198(1)	20.879	3.013	15.785
URB_t	-1.015(2)	-1.001(3)	0.489(1)	0.357	0.689	12.978
Model Specification: Intercept & Trend						
TRG_t	-2.276(1)	-2.217(1)	-6.702(0)	-1.806	0.269	13.609
FDI_t	-0.379(4)	-1.919(3)	-12.050(1)	-1.339	0.152	5.962
$PGDP_t$	-0.859(1)	-1.137(3)	-1.886(0)	-0.877	0.470	12.618
EDU_t	-0.210(4)	-1.785(3)	-10.952(1)	-1.021	0.137	5.815

Table 4, continued

URB_t	-0.698(1)	-1.012(3)	-1.741(0)	-0.741	0.412	11.145

Note: *, ** and *** show stationarity of variables at the 0.10, 0.05 and 0.01 level respectively. Brackets include the optimum lag length.

Source: Author computation

With regards to Zivot-Andrew test, Table 5 shows that TRG_t is non-stationary with significant breaks in intercept for the year 2000, in trend for the year 1991 and in both intercept and trend for the year 2003. FDI_t become stationary with significant break in trend for the year 2002 and with significant break in both intercept and trend for the year 1998. $PGDP$t is non-stationary with significant break in intercept for the year 2002, in trend for the year 1999 and in both intercept and trend for the year 1995. EDU_t become stationary with significant break in trend for the year 2004 and with significant break in both intercept and trend for the year 2000. URB_t is non-stationary with significant break in intercept for the year 2004, in trend for the year 2001 and in both intercept and trend for the year 1997.

Since all the variables are a mixture of I(1) and I(0), ARDL / Bound Testing methodology of Pearson and Shin (1999) is suitable to apply here.

Table 5: Zivot-Andrews Unit Root Test

Variable	K	Year of Break	A	t_α	Type of Model
TRG_t	5	2000	-0.797	-4.633	A

Table 5, continued

	5	1991	-1.702	-3.990	B
	5	2003	-0.692	-4.485	C
FDI_t	1	2002	-0.657*	-4.692	B
	4	1998	-1.718*	-5.392	C
$PGDP_t$	4	2002	-0.337	-4.504	A
	4	1999	-0.728	-4.352	B
	4	1995	-0.621	-4.571	C
EDU_t	1	2004	-0.642*	-4.256	B
	4	2000	-1.657*	-5.214	C
URB_t	4	2004	-0.214	-4.412	A
	4	2001	-0.712	-4.341	B
	4	1997	-0.615	-4.503	C

Source: Author computation

Note: * and ** show stationarity of variables at the 0.05 and 0.01 level respectively.

Co-integration

Table 6 shows that $dTRG_t$, $dFDI_t$ and $dEDU_t$ are stationary at 1% level of significance with all tests. $dPGDP_t$ and URB_t are stationary at 1% level of significance with intercept, stationary at 1% significance with ADF and PP tests and stationary at 5% level of significance with Ng-Perron test with both intercept and trend. There is the evidence for mix order of integration, because FDI_t and EDU_t become stationary at level with structural break. So, ARDL

50

model is suitable to apply here. The study finds the optimum lag length for ARDL model by using SBC and then includes dummy variable D_{TRG} in the ARDL model to complete the information in the model. Optimum lag length is 2 for $dTRG_t$, 0 for $dFDI_t$ and $dEDU_t$, and 1 for $PGDP_t$ and URB_t.

Table 6: Unit Root Tests at First Difference

Variables	ADF	PP		Ng-Perron		
			MZ_a	MZ_t	MSB	MPT
Model Specification: Intercept						
$dTRG_t$	-	-	-	-2.897**	0.168**	1.544**
	6.797**(1)	6.793**(1)	17.167**(0)			
$dFDI_t$	-	-	-	-26.35**	0.018**	0.032**
	5.067**(4)	3.421**(6)	139.200**(1)			
$dPGDP_t$	-	-	-	-2.865**	0.174**	1.499**
	4.803**(1)	4.913**(3)	16.454**(1)			
$dEDU_t$	-	-	-	-24.24**	0.015**	0.030**
	4.754**(4)	3.010**(6)	124.020**(1)			
$dURB_t$	-	-	-	-2.514**	0.160**	1.289**
	4.523**(1)	4.435**(3)	14.183**(1)			
Model Specification: Intercept & Trend						
$dTRG_t$	-	-	-27.094**(0)	-3.914**	0.141**	4.031**
	6.737**(1)	6.720**(1)				

Table 6, continued

*dFDI*t	-	-	-	-	0.048**	0.483**
	6.983**(4)	4.281**(5)	212.840**(1)	10.295**		
*dPGDP*t	-	-	-18.050*(1)	-2.995*	0.167*	5.404*
	4.828**(1)	4.925**(3)				
	-	-	-	-	0.041**	0.394**
*EDU*t	6.841**(4)	4.103**(5)	211.830**(1)	9.825**		
	-	-	-16.157*(1)	-2.589*	0.151*	5.021*
*URB*t	3.581**(1)	4.024**(3)				

Note: *, ** and *** indicate stationary at 10%, 5% and 10% level of significance. Bracket contains optimum lag length.

Source: Author computation

Bound Testing

The study selected the year 2003 for break period and puts 0 from 1983 to 2003 in D$_{TRG}$. The calculated F-statistic for selected ARDL model is given in Table 7. Table 7 shows that F-statistic is 9.261. It is greater than upper bound value. So, null hypothesis of no co-integration is rejected at 1% level of significance and long run relationship exists in the model.

52

Table 7: ARDL Bound Test (Using ARDL 2, 0, 1)

		At 0.05		At 0.01	
VARIABLES	F-statistic	I(0)	I(1)	I(0)	I(1)
(when taken					
as a					
dependent)					
$D(TRG_t)$	9.261**	3.615	4.913	5.018	6.610

** Means at 1%, 5% significant levels reject the null hypotheses of no co-integration. * Means at 5% significant level reject the null hypotheses of no co-integration.

Source: Author computation

Long run results

Table 8 shows the long run estimates on the basis of selected ARDL model. Results show that the coefficient of FDI_t is positive and significant at 5% level. It means FDI is positively contributing to tax revenue in Ghana. According to Chaudhary and Mahmood (2013), FDI generally has a positive effect on economic growth and income levels of a country so there will be greater aggregate demand and economic activities in a country which could help the government generate more indirect taxes. This is also consistent with the findings of MacDougall (1960); Streeten (1969); and Caves (1971).

$PGDP_t$ is positive and significant at 5% level of significance. So Per Capita GDP has a positive and significant contribution to tax revenue in Ghana. This result is consistent with the findings of Addison and Levin (2008), and Ghura (1998) that tax revenue-GDP ratio increases with the

53

development of an economy. In other words, as countries develop, they will improve upon their public administration, judicial systems and promote structural and institutional reforms so that the cost of their tax systems is reduced hence the dependence of domestic taxes will increase (Baunsgaard & Keen, 2009; Davoodi & Grigorian, 2007; Gupta, 2007).

EDU$_t$ is positive and significant at 1% level of significance suggesting that education has a positive and significant contribution with tax to GDP ratio. This result is consistent with the findings of Lotz and Morss (1967); Adam, Bevan and Chambas (2001); Gupta (2007); and Drummond, Daal and Srivastava (2012). In some studies, the level of Per Capita GDP is found to be insignificant once the level of education is included (Bird, Martinez-Vazquez, & Torgler, 2004; Morrisey, Prichard, & Torrance, 2014; Tait, Graetz, & Eichengreen, 1979). In this case, there is the likelihood that the educational level captures a variety of factors associated with a higher level of development that also support a higher tax capacity.

PlURB$_t$ is positive signifying that it has a positive relationship with tax-GDP ratio. This result conforms to other researchers who have found that, total tax revenue increases when a society becomes more urbanised (Al-Hakami, 2008; Davoodi & Grigorian, 2007: Khattry et al., 2002). They argue that urbanisation increases the need for tax revenues and the capacity to tax. This is because tax collection becomes more efficient in urban areas, since the general public is more likely to be well-educated and do better in understanding and complying with tax codes.

54

Intercept (C) is positive and significant at 1% level of significance. The coefficient of D_{TRG} is negative and significant at 1% level of significance. So, intercept is changed after the year 2003.

Table 8: Long Run Results (Dependent Variable is TRG_t)

Regressor	Coefficient	S. E.	t-Statistic	P-value
FDI_t	0.657**	0.306	2.144	0.039
$PGDP_t$	0.00214**	0.0008	2.676	0.012
EDU_t	0.399***	0.215	1.856	0.050
$PlURB_t$	0.141	0.189	0.746	0.300
C	14.011***	0.952	14.717	0.000
D_{TRG}	-2.952***	0.592	-4.985	0.000

Note: *, ** and *** show statistically significance of parameters at the 0.10, 0.05 and 0.01 respectively. S. E. is standard error.

Source: Author computation

Short run results

Table 9 reveals that all coefficients, except URB_t, dC and dD_{TRG}, are statistically significant. Results showed that FDI had positive and significant effect on revenue in the short run. This is also consistent with the findings of Chaudhary and Mahmood (2013); MacDougall (1960); Streeten (1969); and Caves (1971).

Similarly, Per Capita GDP had a positive and significant effect on tax revenue collection. This result is in consonance with the findings of Addison

55

and Levin (2008); Baunsgaard and Keen (2009); Davoodi and Grigorian, 2007; Ghura (1998); and Gupta (2007).

Likewise, the Level of Education had positive and significant contribution to tax revenue. This result is consistent with the findings of Lotz and Morss (1967); Adam, Bevan and Chambas (2001); Gupta (2007); and Drummond, Daal and Srivastava (2012).

Urbanisation is also positively related to tax revenue. This result conforms to other researchers who have found that, total tax revenue increases when a society becomes more urbanised (Al-Hakami, 2008; Davoodi & Grigorian, 2007: Khattry et al., 2002).

The coefficient of ECT_{t-1} is negative and significant at 5% level of significance. It is showing short run relationship in the model and also showing speed of adjustment 17.3% in a year from short run disequilibrium to long run equilibrium.

Table 9: Error Correction Model (Dependent Variable is TRG_t)

Regressor	Coefficient	S. E.	t-Statistic	P-value
$dTRG_{t-1}$	-0.395**	0.178	-2.226	0.034
$dFDI_t$	0.064**	0.024	2.645	0.013
$dPGDP_t$	-0.00144**	5.7^{-4}	-2.515	0.017
$dEDU_t$	0.034**	0.201	0.169	0.500
$dURB_t$	0.041	0.142	0.289	0.400
Dc	-2.763	1.925	-1.435	0.161

Table 9, continued

dD_{TRG}	0.156	0.464	0.334	0.739
ECT_{t-1}	-0.173**	0.083	-2.083	0.046

Source: Author computation

Diagnostic Tests

Results of Table 10 show that all p-values are greater than 0.1. So, the problems of serial correlation, functional form, normality and heteroscedasticity are not found in this model.

Table 10: Diagnostic Tests

	LM version	P-value
Serial Correlation (χ^2)	0.244	0.621
Functional Form (χ^2)	0.175	0.678
Normality (χ^2)	3.459	0.116
Heteroscedasticity (χ^2)	2.497	0.177

Source: Author computation

Figures 5 and 6 show that *CUSUM* and *CUSUMsq* test do not exceed the critical boundaries at 5% level of significance. This means that the model of tax revenue is correctly specified and long run coefficients are reliable.
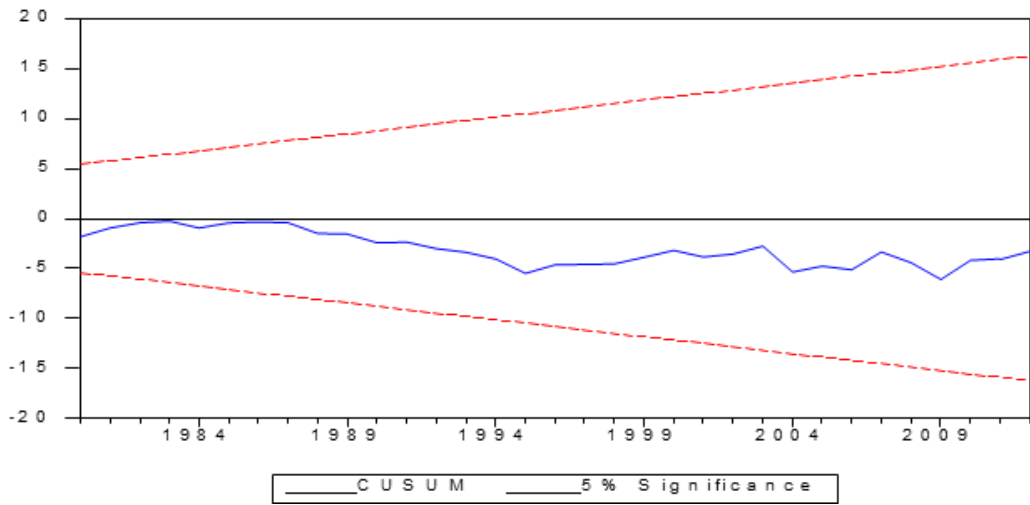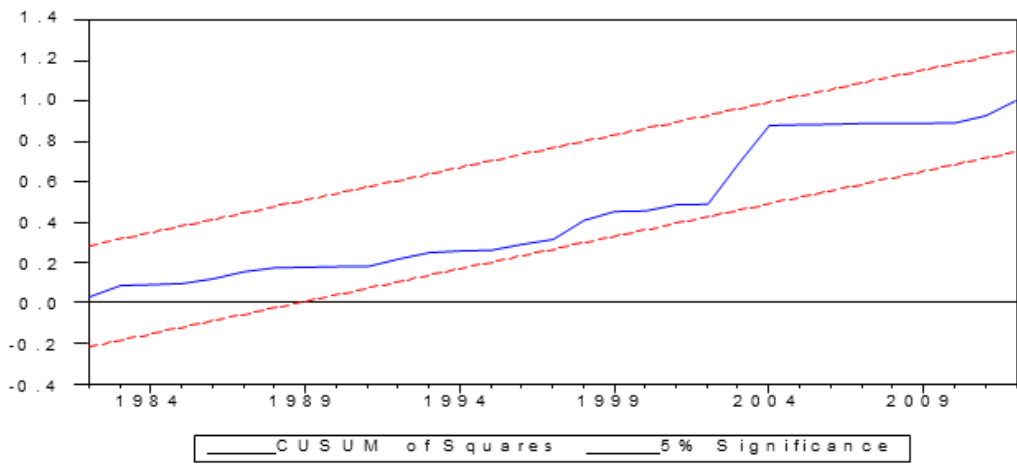
57

Figure 5: CUSUM test

Source: Author computation

Figure 6: CUSUMsq test

Source: Author computation

58

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter presents summary of the study and major findings derived from the study. Conclusions arrived and recommendations arising from the findings were provided in this chapter.

Summary of the Study

Attracting foreign direct investment continues to be a priority of Government of Ghana (GOG) as it remains one of the main sources of generating revenue needed for bridging an infrastructure funding gab of at least USD 1.5 billion a year (U.S. Department of State, 2015). The study attempted to assess the effects of foreign direct investment on government revenue in Ghana. FDI, Per Capita GDP, Level of Education and Urbanisation were used as independent variables and tax revenue was taken as the dependent variable. Augmented Dickey Fuller, Phillips-Perron, Ng-Perron and Zivot-Andrews unit root tests were applied to find the level of integration in the time series. Auto-Regressive Distributive Lag and its Error Correction Model were applied to find long run and short run relationships. The study used secondary times series data sourced from World Bank (WDI) and Ministry of Finance of Ghana. The findings were organized in line with the research objectives which were formulated to guide and give the study direction.

With respect to the first objective of exploring the trends in government revenue and FDI, it came to light that the cedi value of Ghana's

59

economy (GDP) has taken an upward trend especially from 1960 to 2015. GDP in Ghana averaged 9.63 US$ Billion from 1960 until 2015, reaching an all-time high of 47.80 US$ Billion in 2013 and a record low of 1.20 US$ Billion in 1960. Similarly, FDI inflows (% of GDP) have generally been high from 1983 to 2015 with the highest value recorded in 2008 (n= 9.52) while the lowest value was recorded on 1983 (n= -0.06).

On the other hand, share of agriculture to GDP has taken a downward trend especially since 1983 when it recorded its highest growth of 54.36%. Aging farmers, unpredictable rain patterns and lack of modern machinery is deemed to be the cause of the trend. Likewise, Ghana government's tax revenue (% of GDP) has been generally low over the period (1983-2015). Tax revenue in Ghana averaged 17.94% from 1983 to 2015; recorded a lowest value of 5.71% in 1997; and the highest value over the past 33 years (1983-2015) was 52.08% in 1983.

Regarding the second objectives of the study which sought to estimate the effect of FDI on government revenue in the short run and in the long run the study found the existence of short run and long run relationships in the model. FDI, Per Capita GDP and Level of Education had positive and significant effect on tax revenue so FDI, Per Capita GDP and Level of Education are raising tax revenue to Government of Ghana. Urbanisation also had positive but insignificant effect on tax revenue in Ghana.

Conclusions

The study assessed the effect of foreign direct investment on government revenue in Ghana. After exploring the trends in government

revenue and FDI, it was revealed that the cedi value of Ghana's economy (GDP) and FDI inflows (% of GDP) over the period under study (1983-2015) took an upward trend whereas share of agriculture to GDP and government tax revenue took a downward trend over the same years.

When estimating the effect of FDI on government revenue in the long run and in the short run, it was revealed that there is positive contribution of FDI, Per Capita GDP, Level of Education and Urbanisation to tax revenue in Ghana. Regarding the extent of contributions, the study found that changes in FDI, Per Capita GDP and Level of Education significantly affected tax revenue in the short run and long run so FDI, Per Capita GDP and Level of Education are helpful in raising tax revenue to Government of Ghana.

Recommendations

After gaining insight on the effects of FDI on government revenue in Ghana, it is appropriate to make some policy recommendations. With respect to the cedi value of Ghana's economy (GDP), it is recommended that GOG in general and Ministry of Finance to be specific should continue investing in specific sectorial areas which contribute very high to GDP especially the agricultural sector. This is because increase in GDP will lead to increase in Per Capita GDP or productivity of Ghanaians and consequently empower Ghanaians to pay taxes regularly.

Regarding FDI inflows, the study recommends that the Electoral Commission of Ghana (EC), the Transition Teams of Political Parties, and the Administrator General continuously play their role in sustaining the world's confidence with a smooth and peaceful political transition and a well-

grounded and firm commitment to democracy needed for expediting Ghana's growth in FDI in the coming years. Besides, GIPC should continue to create an enhanced, transparent and responsive environment for investment in the country. This is because increases in FDI will lead to greater aggregate demand and economic activities in a country which could help the government generate more and high indirect taxes.

The study also recommends that the GOG in connection with the Ministry of Education takes steps to ease access and encourage formal education in Ghana. This is because the more educated the workforce, the more value added in the economy that can be taxed due to a larger formal sector and higher incomes. People with higher education and formal employment are more likely to have a deeper understanding of the role of taxation in the economy or society.

Lastly, the study recommends increases in Urbanisation rate with the help of the Ministry of Local Government and Rural Development (MLGRD). This is because tax collection becomes more efficient in urban areas, since the general public is more likely to be well-educated and do better in understanding and complying with tax codes.

REFERENCES

Ackon, K. M. (2016). *Understanding key macroeconomic statistics…gross domestic product and rebasing*. Retrieved from http://thebftonline.com/features/opinions/18680/understanding-key-macroeconomic-statistics-gross-domestic-product-and-rebasing.html.

ActionAid (2012). *Why SABMiller should stop dodging taxes in Africa?* London, United Kingdom. Retrieved from https://www.actionaid.org.uk/sites/default/files/doc_lib/calling_time_on_tax_avoidance.pdf

Adam, C., Bevan, D., & Chambas, G. (2001). Exchange rate regimes and revenue performance in Sub-Saharan Africa. *Journal of Development Economics, 64,* 243-256.

Addison, T., & Levin, J. (2008). The determinants of tax revenue in Sub-Saharan Africa. *Economica*, *38*, 1-27.

Ajayi, S. L. (2008). Foreign direct investment in Sub-Saharan Africa: Origins, targets, impacts and potential. *African Economic Research Consortium*. Retrieved from http://www.aercafrica.org/documents/books/FDI_papers_booklength_volume.pdf.

Al-Hakami, A. O. (2008). Trade liberalization, exchange rate and tax revenues in Egypt, Jordan, Morocco and Tunisia. *Journal of Business Studies*, *4*, 124-135.

Andinuur, J. (2013). *Inflation, foreign direct investment and economic growth in Ghana*. Unpublished masters' thesis, Department of Economics, University of Ghana. Legon, Accra.

Antwi, S., & Zhao, X. (2010). *The impact of foreign direct investment and economic growth in Ghana*: *A cointegration analysis*. Unpublished masters' thesis, Department of Economies, Jiangsu University, China.

Antwi, S., Mills, E. F. E. A., Mills, G. A., & Zhao, X. (2013). Impact of foreign direct investment on economic growth: Evidence in Ghana. *International Journal of Academic Research in Accounting, Finance and Management Sciences, 3*(1), 18-25. Retrieved from www.harmas.com.

Asafu-Adjaye, J. (2005). What has been the impact of foreign direct investment in Ghana? *Institute of Economic Affairs Policy Analysis, 1*(9), 25-38.

Asamoah, M. E. (2012). Macroeconomic volatility and foreign direct investment in Africa. Unpublished thesis, Department of Economics, University of Ghana. Legon, Accra.

Association of Ghana Industries (2015). *Business confidence takes massive hit in Q4, 2015-AGI* (Business Barometer Report). Retrieved from http://pulse.com.gh/business/ghanas-economic-business-confidence-takes-massive-hit-in-q4-2015-agi-id4702907.html.

Bank of Ghana (2016). *Ghana government revenue.* Retrieved from http://www.tradingeconomics.com/ghana/government-revenues

Baunsgaard, T., & Keen, M. (2009). Tax revenue and (or?) trade liberalization. *Journal of Public Economics,* 94, 563-577.

Bird, R. M., Martinez-Vazquez, J., & Torgler, B. (2008). Tax effort in developing countries and high income countries: The impact of

corruption, voice and accountability. *Economic Analysis and Policy*, 38(1), 55-71

Bird, R., Martinez-Vazquez, J., & Torgler, B. (2004). Societal institutions and tax effort in developing countries. *International Studies Program Public Finance Conference Paper*.

Bishop, B. (1990). *Foreign direct investment in Korea: The role of the State.* Aldersot: Ashgate.

Boskin, M., & Gale, W. (2012). *New results on the effects of tax policy on the international location of investment*. Chicago, University of Chicago Press.

Bunescu, L., & Comaniciu, C. (2014). Analysis of correlation between tax revenues and other economic indicators in European Union member states. *Studies in Business and Economics, 9*(1), 24-34.

Bunescu, L., & Comaniciu, C. (2014). Analysis of correlation between tax revenues and other economic indicators in European Union member states. *Studies in Business and Economics, 9*(1), 24-34.

Caves, R. E. (1971). International corporations: The industrial economics of foreign investment. *Economica*, *38*, 1-27.

Chand, S. K., & Moene, K. O. (1999). Controlling fiscal corruption. *World Development, 27*(7), 1129-1140.

Chaudhary, A. R., & Mahmood, H. (2013). Impact of FDI on tax revenue in Pakistan. *Pakistan Journal of Commerce and Social Sciences, 7*(1), 59-69.

Christian Aid (2010). *Death and Taxes: the true toll of tax dodging.* London, United Kingdom. Retrieved from http://www.christianaid.org.uk/images/deathandtaxes.pdf.

Davoodi, H., & Grigorian, D. (2007). Tax potential vs. tax effort: A cross-country analysis of Armenia's stubbornly low tax collection. *International Monetary Fund Working Paper No. 106*.

De Mooij, R. A., & Ederveen, S. (2003). Taxation and Foreign Direct Investment: A Synthesis of Empirical Research. *International Tax and Public Finance*, *2*(4), 673-693.

Dickey, D., & Fuller, W. (1981). Likelihood ratio statistics for autoregressive time series with a unit root. *Econometrica*, 49, 1057-1072.

Drummond, P., Daal, W., Srivastava, N., & Oliveira, L. E. (2012). Mobilizing revenue in Sub-Saharan Africa: Empirical norms and key determinants. *IMF Working Paper WP/12/108*.

Dunning, J .H. (1981). *International production and the multinational enterprise*. London: Allen Unwin.

Easson, A. (2004). *Tax incentives for foreign direct investments.* The Hague, London, New York: Kluwer Law International.

Ghana Investment Promotion Centre (2016). *Foreign direct investment increases by 400%.* Retrieved from http://pulse.com.gh/finance/gipc-foreign-direct-investment-increases-by-400-gipc-id5358855.html.

Ghura, D. (1998). Tax revenue in sub-saharan Africa: Effects of economic policies and corruption. *IMF Working Paper WP/98/135*.

Gropp, R., & Kostial, K. (2000). *The disappearing tax base: Is foreign direct investment eroding corporate income taxes?* ECB Working Paper No. 31. Frankfurt: European Central Bank.

Gupta, A. S. (2007). Determinants of tax revenue efforts in developing countries. *IMF Working Paper WP/07/184*.

Gupta, S. (2007). *Determinants of tax revenue efforts in developing countries* (IMF Working Paper 07/184). Washington: International Monetary Fund

Harris, R., & Sollis, R. (2003). *Applied time series modelling and forecasting*. West Sussex: John Wiley.

Herkenrath, M. (2010, December 15). *Tax dodging by multinationals: Zug tricks Ghana*. London, United Kingdom: Alliance Sud News (No. 66). Retrieved from http://www.alliancesud.ch/en/policy/finance/tax-dodging-sabmiller.

Investopedia (2016). *Per Capita GDP definition*. Retrieved from http://www.investopedia.com/terms/p/per-capita-gdp.asp#ixzz4QDAs3z2X.

Johnson, A. (2010). Rethinking bilateral investment treaties in Sub-Saharan Africa. *Emory Law Journal, 59*(4), 919-967.

Karagoz, K. (2013). Determinants of tax revenue: Does sectorial composition matter? *Journal of Finance, Accounting and Management, 4*(2), 20-63.

Karim, N., & Ahmad, S. (2009). Foreign direct investment: Key to poverty reduction in Malaysia. *IUP Journal of Applied Economics, 8*(5/6), 55-64.

Khattry B., Rao J. M. (2002). Fiscal faux pas? An analysis of the revenue implications of trade liberalization. *World Development*, 30, 1431−1444.

Kucera, D. (2002). Core labour standards and foreign direct investment. *International Labour Review*, *141*(1/2), 31-69.

Lemi, A., & Asefa, S. (2009). Differential impacts of economic volatility and governance on manufacturing and non-manufacturing foreign direct investments: The case of US multinationals in Africa. *Eastern Economic Journal*, *35*(3), 367-395.

Lotz, J. R. & E. R. Morss (1967). Measuring 'tax effort' in developing countries. *International Monetary Fund Staff Papers, 14*(3), 478-497.

Lovell, K., & Lawson, K. (1970*). Understanding research in education.* Edinsburth: University of London Press.

MacDougall, G. D. A. (1960). The benefits and costs of private investment from abroad: A theoretical approach. *Economic Record, 36*, 13-35.

Ministry of Finance (2013). *The budget statement and economic policy of the government of Ghana for the 2013 financial year.* Ministry of Finance, Ghana.

Ministry of Finance (2016). *The budget statement and economic policy of the government of Ghana for the 2016 financial year.* Ministry of Finance, Ghana.

Moosa, A. I. (2002). *Foreign direct investment: Theory, evidence and practice.* London, United Kingdom: Prentice Hall International.

Morissey, O., Prichard, W., & Torrance, S. (2014). Aid and taxation: Exploring the relationship using new data. *ICTD Working Paper 21*.

Mulusa, A. (1990). *Evaluation research for beginners: A practical study guide*. Bonn: German Foundation for international development.

Ng, S., & Perron, P. (2001). Lag length selection and the construction of unit root tests with good size and power. *Econometrica*, 69, 1519-1554.

Noorbakhsh, F., Paloni A., & Youseef, A. (2001). Human capital and FDI inflow to developing countries: New empirical evidence. *World Development*, *29*(1), 1593-1610.

Odabas, H. (2015). Foreign direct investment inflows on tax revenues in the transition economies of European Union. *Global Journal on Humanities and Social Sciences, 4*, 17-22.

Okey, M. K. N. (2013). Tax revenue effect of foreign direct investment in West Africa. *African Journal of Economic and Sustainable Development, 2*(1), 1-22.

Organisation for Economic Cooperation and Development (2001). *Corporate tax incentives for foreign direct investment.* Paris: OECD.

Organisation for Economic Cooperation and Development (2008). *Benchmark definition of foreign direct investment.* Retrieved from https://data.oecd.org/fdi/fdi-stocks.htm.

Organisation for Economic Cooperation and Development (2014). *FDI stocks*. Retrieved from https://data.oecd.org/fdi/fdi-stocks.htm.

Organisation for Economic Cooperation and Development (2014). Foreign direct investment for development: maximizing benefits, minimizing costs. Paris, France: OECD.

Organisation for Economic Co-operation and Development (2015). *Tax revenue (indicator)* Retrieved from https://data.oecd.org/tax/tax-revenue.htm.

Osei, C. (2014). *UK foreign direct investment in Ghana: Determinants and implications*. Unpublished masters' thesis, School of Business and Economics. Edinburgh Napier University. London, United Kingdom.

Oxford Business Group (2016). *Ghana looks to overcome drop in energy prices.* Retrieved from https://www.oxfordbusinessgroup.com/overview/pushing-ahead-despite-recent-challenges-government-looking-overcome-dropping-energy-prices

Pesaran M. H., Shin, Y., & Smith, R. (2001). Bounds testing approaches to the: Analysis of level relationships. *Journal of Applied Econometrics*, *16*(3), 289-326.

Phillips, P. C. B., & Perron, P. (1988). Testing for unit roots in time series. *Biometrika*, 75, 335-346.

Pirnia, N., & Jacques, M. (2000). *How tax policy and incentives affect foreign direct investment.* London: The World Bank and International Finance Corporation.

PricewaterhouseCoopers (2015). *2016 budget highlights*. Retrieved from www.pwc.com/gh.

Sarısoy, İ., & Koç, S. (2010). Doğrudan Yabancı Yatırımların Kurumlar Vergisi Gelirleri Üzerindeki Etkisinin Ekonometrik Analizi, *Erciyes Üniversitesi İİBF Dergisi*, *36*, 133-153.

70

Slemrod, J. (2010). *Tax effects on foreign direct investment in the United States: evidence from a cross country comparison* (pp. 79-117.). Chicago: University of Chicago Press.

Streeten, P. (1969). *New approaches to private investment in less developed countries* (pp. 436-452)*.* Harmondsworth, International Investment. Penguin Books.

Tait, A., Graetz, W., & Eichengreen, B. (1979). International comparisons of taxation for selected developing countries. *International Monetary Fund Staff Papers*, 26.

Twumasi, R. A. (2012). *The impact of fiscal policy on economic growth in Ghana*. Unpublished masters' dissertation, Institute of Distance Learning, Kwame Nkrumah University of Science and Technology, Kumasi-Ghana.

U.S. Department of State (2015). *Ghana investment climate statement 2015*. United State of America: Department of State.

United Nations Conference on Trade and Development (1996). *Incentives and foreign direct investment.* New York: UNCTAD.

United Nations Conference on Trade and Development (2008). *Transnational corporations and the infrastructure challenge*. New York, NY: World Investment Report.

Wijeweera, A., Villiano, R., & Dollery, B. (2010). Economic growth and FDI inflows: A stock frontier analysis. *The Journal of Developing Areas, 43*(2), 143-158.

World Bank (2016). *Ghana foreign direct investment* (1983-2015). Retrieved from http://data.worldbank.org/country/ghana.

World Bank (2016). *Ghana GDP* (1960-2015). Retrieved from http://www.tradingeconomics.com/ghana/gdp.

World Bank (2016). *Ghana gross domestic product*. Retrieved from http://www.tradingeconomics.com/ghana

World Development Indicators (2016). *Ghana*. Retrieved from http://data.worldbank.org/country/ghana

Zivot, E., & Andrews, D. W. K. (1992). Further evidence on the great crash, the oil-price shock and the unit root hypothesis. *Journal of Business and Economic Statistics, 10*(3), 251-270.