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COLLEGE OF HUMANITIES & SOCIAL SCIENCES

DEPARTMENT OF ECONOMICS

**DETERMINANTS OF FISCAL BALANCE OF METROPOLITAN, MUNICIPAL
AND DISTRICT ASSEMBLIES IN GHANA**

BY

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**IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF
MASTER OF SCIENCE IN ECONOMICS**

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DECLARATION

I hereby declare that this submission is my own work towards the degree of Master of Science (Economics) and that, to the best of my knowledge it contains no material previously published by another person, or material which has been accepted for the award of any other degree of the University, except where acknowledgement has been made in the text.

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ABSTRACT

The study employed a panel data analysis approach to examine fiscal balance in Districts/Municipalities in Ghana. The study examined specifically; the trend in internally generated funds (IGF), total transfers, fiscal balance, total revenue and total expenditure; the causes and determinants of fiscal balance in District/Municipalities in Ghana; and the causality between internally generated funds (IGF) and total transfers (TT). Panel data from ten (10) Districts/Municipal Assemblies in Ghana spanning from 2009 to 2014 was used for the analysis. Pooled and random effects estimates via panel data analysis approach are employed. The random effects showed that total transfers (TT), Population, and staff strength were the main drivers of fiscal balance of the selected ten (10) District/Municipals in Ghana. The pooled-OLS results showed that internally generated funds (IGF), population, and staff strength were the main determinants of fiscal balance for the ten (10) selected Assemblies in Ghana. The panel Granger causality test revealed bi-directional causality from internally generated funds (IGF) to total transfers (TT). The study concluded that inducing both internal and external revenue sources play a critical role in achieving fiscal balance in MMDAs.

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DEDICATION

I dedicate this project to my MOM and DAD for their prayers and support. MOM and DAD, you have been a source of motivation to me. All I can say is I LOVE you.

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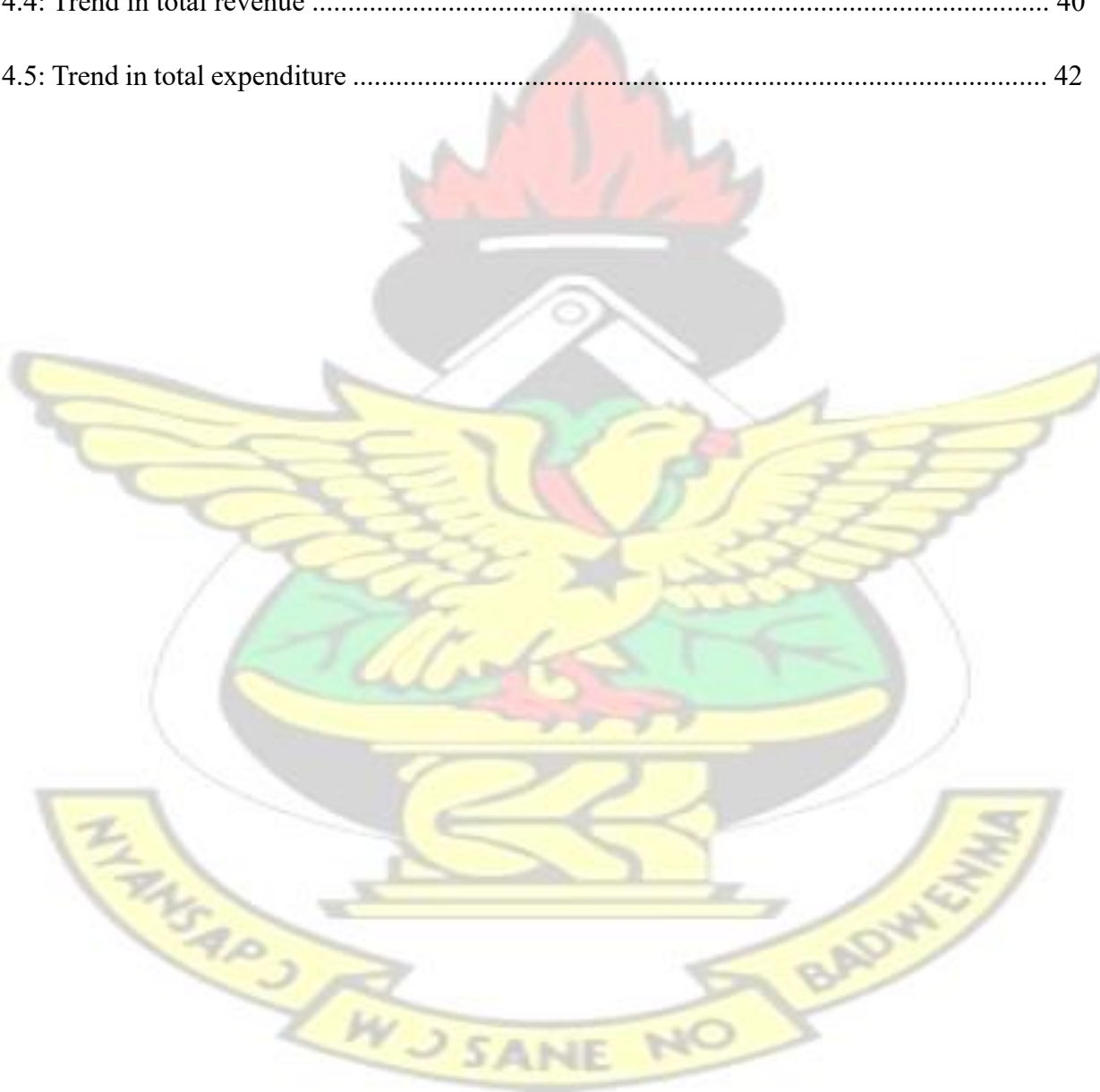
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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Governments the world over delegate more expenditure activities to local authorities than can be financed from their internally generated funds (IGF). The result of this mismatching of functions and finances –usually referred to as vertical imbalances—is that local governments are generally dependent on transfers from higher levels of government (Bird 2010; Boadway and Shah 2009; Boex and Martinez-Vazquez 2006; Bird and Smart 2002). Bahl et al (2003) classifies local government revenue into two main categories. These include IGF and transfers from the central governments, usually in the form of external transfers. In some countries, local authorities are allowed to borrow money for developmental purposes. This study will concentrate on external revenue sources and fiscal sustainability.

Both the central and local authorities have been experiencing budget deficits over the years. The central government and its local authorities have constantly expended more than they are able to mobilize. The central government's deficit gap is regularly financed by external transfers especially from foreign partners. This has resulted in a perpetual dependence on foreign aid (Osei and Quartey, 2005). Since local authorities cannot secure loans when they experience deficits, it is incumbent on them to generate adequate internal revenue. According to Gupta (2007), to minimize or avoid overdependence on foreign aids with its accompanying debt burden, he suggested that countries need to depend greatly on local revenue generation. Revenue generations by local authorities in developing countries have relied excessively on different forms of taxes. According to Gberegbe (2007), for local authorities and their respective central governments to generate optimum revenue levels, he is of the view that, they

should optimize their tax base and strengthen fiscal controls. In his view taxation is the most proficient and active means of generating revenue for central governments and their local authorities. Gupta and Tareq (2008) argue that the consolidation of domestic revenue base is geared towards creating fiscal foundation for local developmental activities and programs.

In Ghana, local authorities partner the central government in the developmental agenda of the country and as such, they are expected to generate enough own revenue to help them ensure development activities are carried out. The revenue mobilized internally is used to support the transfers from the central government like the District Assemblies Common Fund (DACF) to provide development to their respective communities.

Local Assemblies in Ghana were created as integrated decentralized authorities, combining oversight of de-concentrated line Ministries with the revenue powers and functions of devolved democratic local government. The local authorities are the lowest level of government and are thus closer to the people at the local level than the central government. They are purposefully and deliberately located to play a critical and essential role in national development. They are responsible for the governance of the greater number of Ghanaians, thus Aryee (2003), argues that local authorities are in a strategic position to provide the needs of the majority of Ghanaians and frame and implement strategies to improve their lives. For local authorities to be effective in development process, Act 462 (1993) empowers the local authorities to mobilize enough revenue at the local level to support external transfers from external partners and the central government.

A statutory provision such as the District Assemblies Common Fund Act, Act 455 (1993) and the Local Government Act, Act 462 (1993) makes provision for Central Government to support local authorities through the District Assemblies Common Fund (DACF). These Statutory provisions empower the local authorities to employ appropriate techniques to generate revenue

and put in measures to ensure compliance and discourage revenue leakages. Local governance requires sufficient funds to enable local authorities contain the enormous developmental needs from society.

1.2 Problem Statement

As a result of the inability of local authorities to generate sufficient funds from their areas of governance, funding local government development programs in Ghana by local authorities has become a characteristic problem. Despite the sufficient resources available to local authorities, they have not been able to optimize revenue generation, thus, making the assemblies over reliant on foreign partners and the central government for their developmental programs.

The existence of external sources of revenue could lead to the over reliance on these intergovernmental transfers at the expense of generating own revenue (IGF). According to Aryee (2003), despite the statutory provisions that empowers local authorities to mobilize sufficient funds, they are not able to mobilize enough revenue at the local level for development. They rely greatly on the District Assemblies Common Fund (DACF) allocated from the central government to complement their developmental programs. Kaleem (2011) has tagged this phenomenon as the “DACF menace” insisting that, district assemblies rely heavily on the DACF and fail to generate enough IGF for local development.

However, other studies suggest results contrary to the above. Findings by these studies reveal that, external revenue sources like the DACF were established to induce and enhance district assemblies’ performance. Akudugu (2013) found that, the DDF was established in Ghana by central government of Ghana and her development partners with the purpose of enhancing district assemblies’ performance. It is therefore expected that external revenue sources will

have a positive effect on IGF thereby ensuring fiscal sustainability. From the above discussions, external revenue sources have the potential of creating some moral hazards at the local level. District assemblies' over reliance on external revenue sources results in poor IGF generation and its resultant deficit financing problems. The contrasting views from existing literature create the need and essence to examine the effect of internally generated funds, external transfers, and expenditure on fiscal balance in district assemblies in Ghana.

1.3 Objectives of the Study

The general objective of the study examines the administration of fiscal balance in District Assemblies in Ghana. The specific objective of the study includes;

1. To examine the trend in internally generate funds (IGF), total transfers (TT), total revenue (TR), fiscal balance (B), and total expenditure (TE) of District/Municipal Assemblies in Ghana;
2. To examine the determinants of fiscal balance in District/Municipal Assemblies in Ghana;
3. To examine the causality between internally generated funds (IGF) and total transfers (TT)

1.4 Research Questions

This research will address the following research questions:

1. What has been the trend in internally generated funds (IGF), total transfers (TT), total revenue (TR), fiscal balance (B), and total expenditure (TE) of District/Municipal Assemblies in Ghana?
2. What are the causes of fiscal balance in District/Municipal Assemblies in Ghana?
3. What is the causality between internally generated funds (IGF) and total transfers (TT)?

1.5 Significance of the Study

The research work is important because of the essential and critical role local authority's play in the achievement of development objectives and fulfillment of people more especially the poor in society. As more and more financial pressure mount on MMDAs, there's the need to ensure enhanced performance in generating IGF despite receiving external revenue from the government and other foreign partners.

The study will inform MMDAs, central Government, and foreign donors on the need to ensure improved performance in IGF generation by MMDAs to ensure fiscal sustainability. The findings of the study would also enable management of MMDAs to improve on fiscal management and adopt more innovative means of revenue mobilization which would in turn contribute to the sustainability of MMDAs. In essence, this study will estimate the effect of external revenue on fiscal sustainability in district assemblies in Ghana.

1.6 Scope of the Study

The main source of data was secondary. Data on revenue and expenditure of 10 MMDAs across all 10 regions in Ghana was collected and analysed to find out whether the budgets of MMDAs are balanced and find out the causes of the revenue-expenditure gap if any. Information was drawn from journals, reports, articles, and documents presented by experts in local government

and other related fields. The research work covers only how selected Local Assemblies in Ghana raise revenue and whether the revenues are enough to finance their expenditures. It also looks at the expenditure items incurred from revenue mobilized to identify the seeming causes of expenditure-revenue gaps year by year in the Assemblies.

1.7 Organisation of chapters

This study is organized into five (5) chapters. Chapter one (1) introduces the work and provides a background of the entire study. Chapter two (2) entails a review of relevant literature both theoretical & conceptual and empirical from different sources such as journals, books and online repositories as well as the over view of the study areas. Chapter three (3) presents the methodology used for the study. Chapter four (4) presents the results of the analysed data. Chapter five (5) entails presentation of the major findings, recommendations, and conclusion of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter examines two main parts, the theoretical and conceptual review and review of empirical literature. The theoretical and conceptual review examines the various theories and concepts of external revenue/ fund, decentralization, fiscal and financial sustainability. The empirical literature however, reviews the works of influential authors relevant to the study by reviewing the exact relationship between expenditure and revenue. It also shows the relationship between external revenue and IGF.

2.2. Theoretical and Conceptual Review

2.2.1. The Tax and Spend Hypothesis

Tax and spend hypothesis shows the relationship between government revenue generated from taxes and the expenditure of government. Several studies have shown the diverse relationship between these two variables. The studies of Friedman (1978) show a positive relationship between taxes and expenditure. However, Buchanan & Wagner (1978) disclosed a negative relationship between these two variables. According to Friedman (1978), an increase in government revenue leads to a corresponding increase in government expenditure, an indication that since there is enough revenue, expenditure would also increase triggering over expenditure thus creating budget deficit. To Friedman therefore tax and expenditure are positively related thus reducing tax whether directly or indirectly would mitigate government deficit.

Buchanan & Wagner (1978) on the other hand is of a contradictory view in that tax and government expenditure are inversely related. They believe increasing tax is a solution to reducing budget deficit. With a decrease in tax means insufficient funds for government leading to deficits.

2.2.2. The Spend and Tax Hypothesis

Spend and tax brings to bare the theory and believe that increasing government expenditure today would lead to the generation of more revenue in the future. This theory was uncovered by Peacock & Wiseman (1979). They argue that with the increase in government expenditure temporary today due to financial and economic crises would lead to a permanent increase in

government revenues in the future. Also Barro (1979) further supported this theory stressing on the view that today's deficit expenditure means increase tax liabilities tomorrow. Thus a reduction in expenditure today would mean low revenue in the future. Government budget deficit can thus be reduced through the reduction in government spending.

2.2.3. The Fiscal Synchronization Hypothesis

Fiscal synchronization is of the idea that the determination of the level of revenue and expenditure of the government should be done simultaneously. Opined by Musgrave (1966) and later stressed by Meltzer & Richard (1981) is the fact that the decision to determine the optimal levels of government expenditure and taxation should be done concurrently. It should also be based on the marginal benefits and costs of the voter's welfare from public services. Taking the payer of the tax and their benefits from the government expenditure is thus a prerequisite.

2.2.4. The Fiscal Neutrality Hypothesis

Baghestani & McNown (1994) introduced the fiscal neutrality hypothesis also known as the institutional separation hypothesis. In this theory, it is postulated that there is no relationship between government expenditure and government revenue, thus independently related. This is because both variables have unique functions which are not dependent on each other.

2.3 The Concept of Decentralization

In recent years decentralization has gained prominence as opposed to centralization in the 18th century due to its relevance in the speeding up of development processes and economic growth as a whole. The variant and vast definition of decentralization has brought to bear its different

types and forms, be it decentralizing in the political process, administrative, fiscal or the market process which are all crucial in every development process. Decentralization as it is defined by the UNDP “entails the restructuring of authority in that responsibility is shared between institutions of governance at the central, local and regional levels pertaining to the subsidiary principle. This would increase the overall quality and effectiveness of governance while increasing the authority and capabilities of sub-national levels”.

Furthermore, the United Nations (1962) has given a standard definition for decentralization which has been elaborated on by many authors. According to the UN, “decentralization ensures the transfer of authority, responsibilities and duties on a geographic basis. This could take the form of deconcentration of administrative sections and department or by the political devolution of authority to local government divisions/ departments or by delegation to some statutory units”. Per the vast and variant definitions of decentralization, it is evident it all entails the sharing of responsibilities which embraces various components. It becomes necessary therefore to distinguish between the various types of decentralization.

2.3.1. Types of Decentralization

Clearly spelling out the distinction between the forms and types of decentralization is very relevant in the sense that, it uncovers the boundaries of each decentralization process and thus the coordination amongst them to ensure the smooth developmental process.

2.3.1.1. Political decentralization

This type of decentralization as the name implies involves the seeking and exercising of power in governance. It gives individuals or the elect power in decision making either publicly or privately. It also brings to bear what we call democracy, since it involves the participation of citizens and representatives in the implementation and formulation of policies.

Political decentralization often necessitate the need for constitutional or statutory reforms, the development of multi political parties, the strengthening of legislatures, creation of local political units, and the encouragement of increasing public interest groups.

2.3.1.2. Fiscal Decentralization

Fiscal by means of definition involves the generation of revenue and the expenditure for budgeting purposes. The finances of both the central and local governance are the core of decentralization. To ensure that various functions and delegations are effectively carried out, sufficient and adequate revenue source is a prerequisite. In most developing countries like Ghana, the imposition of tax by the local government and local units are legalized in order to raise revenue to finance projects and other activities. However, this tax base is very weak due to the vast informal sectors. Irrespective of this fiscal decentralization can take the form of firstly, self-financing and user charges. Secondly, revenue can be generated from co-production through labour contributions. Furthermore, indirect charges and property sales taxes are also a means of expanding local revenues. Last but not least the municipal can resort to borrowing or mobilize funds either through national or local authority resources via loan guarantees.

2.3.1.3. Administrative Decentralization

Administrative is related to activities pertaining to the management of an organization. Administrative decentralization therefore means the transfer of responsibilities and duties for the planning, management and financing of functions and projects from the central government through to the subordinates or the regional and the local authorities. Three major forms of administrative decentralization can be deduced with each serving different and unique purposes when it comes to decentralization. This is explained below.

2.3.1.4. Deconcentration

According to Gregersen et al (2005), this form of administrative decentralization involves the mere shift of responsibilities, decision-making authority and financial management duties from the officials in the capital city to the authorities in the districts and provinces. It thus involves the geographical disperse of authority from a high-level central government authority to a lower-level or local authority. It is opined to be the weakest form of administrative decentralization.

2.3.1.5. Devolution

This is the kind of decentralization that underlines various political administrations. Devolution entails the transfer of governance responsibility for specified functions to sub-national levels that are largely outside the control of the central government (Ferguson and Chandrasekharan 2004). This transfer of authority and responsibility ensure that there is the election of mayors and councils that tend to generate their own stream of revenues and make their own investment decisions. Under devolution, clear geographical boundaries are set in terms of exercising of authority making the level of independency very high under devolution.

2.3.1.6. Delegation

This form of decentralization is deemed to be the most expensive of all, it entails the transfer of managerial responsibilities to other organizations which are not under the control of the central government but however are accountable to it. In the process of government embarking on projects such as housing, transportation, school projects amongst others, it becomes

necessary for government to delegate responsibilities by creating public enterprises, corporations and other authorities to help in the implantation of decision-making.

2.4 Meaning of Public Expenditure

Public expenditure can be defined as, the expenditure incurred by public authorities like central, state and local government to satisfy the collective social wants of the people.

In developing countries, public expenditure policy not only accelerates economic growth & promotes employment opportunities but also plays a useful role in reducing poverty and inequalities in income distribution.

2.4.1. Hugh's Classification of Public Expenditure

According to Hugh Dalton, public expenditure can be classified as below;

- **Administrative expenditure:** this is used to maintain the general administration of the country, like government departments and offices.
- **Expenditures on political executives:** this is used for the maintenance of ceremonial event and activities.
- **Security expenditure:** this is used to maintain the expenditure of the security forces.
- **Expenditure on administration of justice:** These include maintenance of courts, judges, public prosecutors.
- **Developmental expenditures:** this is used to promote growth and ensure development of the economy, like expenditure on infrastructure, irrigation, etc.
- **Social expenditures:** this is used to finance social programs and activities such as public health, community welfare, social security, etc.

- **Public debt charges:** This is used to service public debts and includes payment of interest and repayment of principle amount.

2.5. Local Government Finance

The financial aspect of any organization is key to the successful and effective driver in the development process. It is thus a major determinant of performance of any government or institution. Local government finance comprises of funds collected and received by the Metropolitan, Municipal and District Assemblies (MMDA's). These funds can be generated from both external sources such as the central government as well as internally through their own means of mobilizing funds with the local government. However the core of any generated fund is the ability to efficiently utilize it. Funds generated by the local government is backed by law in that it is legally accepted for the MMDA's to generate funds through charging of fees. Per article 245 and 252 of the 1992 constitution and the section 4 of the local government Act, 1993 the local government is entitled to charging of fees, rents and leases, rate and others as means of raising funds to developmental processes. However challenges associated with revenue mobilization cannot be ignored.

2.6. Sources of Revenue for MMDA's

2.6.1. Internal Revenue Sources

Internal sources of revenue for local government involve the means of raising funds to support local development within the boundaries of the locality independent of the central government. This form of revenue generation gives the local government substantial control over the use of the revenue. This can be through the imposition of tax and non-tax base rates. Local taxes such as basic rates, property rates payable by every resident of the locality, fees and fines, licenses,

rent and investment incomes constitute the tax base source of revenue generation. On the other hand non-tax revenues are generated through user charges of public goods or services which are indirect. Ceded revenue is also examples of IGF. They include revenues accrued from selected sources which may seem illegal but actually backed by law. These sources include the entertainment duty, Casino revenue, betting tax, gambling tax, Income tax, daily transport tax, advertisement tax and a host of others. All these sources of revenue generation have respective laws that supports and back them.

The Internal Revenue Authority (IRA) is responsible for the collection of the ceded revenue. The collected revenue is then transferred to the Ministry of Local Government which is then shared among the District Assemblies. Stool lands, minerals and other royalties from other sources of this ceded revenue. This form is collected by the relevant central government agencies and transferred to specific Districts in which they are collected.

2.6.2. External Revenue Sources

External revenues are those funds generated outside the local government; it also implies the local government having little or no control over the generation and use of the funds. The MMDAs receive external funding from the central government through the District Assemblies Common Fund (DACF). Transfers: from District Development Fund (DDF), donor funds, ceded revenue and royalties. The DACF is one of the main sources of external revenue to MMDAs which is mandated by law, though not very regular and timely.

2.7. Concept of Sustainability and Public Accountability

The concept of Sustainability as defined by the Bruntland Commission is the “meeting the needs of the present generation without compromising the needs of future generation”. Also

According to Todaro (2009), a development path is sustainable “if and only if the stock of overall capital assets remains constant or rise over time.” Stan Burkey (1993) defined sustainability as the ability of assemblies to rely on their own human and material resources not depending on the resources from external sources. Burkey (1993) emphasized the fact that self-reliance should not be misconstrued with self-sufficiency.

Furthermore, revenue is said to be sustainable when it is able to yield high performance, grow, and be stable, regular and timely. Again, the performance of a resource is based on its contribution to total revenue. If a source of revenue has a significant contribution, that source in particular becomes relevant and thus it should be maintained. However, its presence should be queried should its contribution be very low or insignificant.

Stability also according to him is the frequency with which revenues tend to change over time within the assembly. If funds and revenues accrued to the assembly either externally or internally are available within a planned period, these funds are said to regular and timely.

Funds are thus sustainable in respect of its regularity, predictability, reliability as well as the ability for the local authorities to effectively and efficiently utilize it in the provision of services to its members.

The theory of Public Accountability is also of interest. Public in this study relates to openness which related to a number of different aspects. The concept of accountability is one of the concepts which cannot be ignored when it comes to ensuring development and sustainability. This is because it conveys an image of transparency and trust. Accountability can thus be defined as “the obligations of agencies and public enterprises that have been trusted with the public resources, to be answerable to the fiscal and the social responsibilities that have been assigned to them. These companies and agencies need to be accountable to the public at large and carry out the duties asked of them responsibly”. To discretely and efficiently account, it

should not be done behind closed doors. Public Accountability is thus issues pertaining to the public domain.

It should not be limited to just the public domain but can be extended to private institutions and organizations that exercise public privileges or receive funding from the public or central authority.

Accountability should be distinguished from responsiveness and participation; accountability can be grouped into Political Accountability, Legal Accountability, Administrative Accountability, Professional Accountability and Social Accountability.

2.8. Empirical Review

2.8.1. The relationship between revenue and expenditure

Many countries depend on taxation as a means of generating the required resources to meet their expenditure requirements. These countries will likely find themselves in growing fiscal imbalance when their revenue productivity falls below their expenditure. The need for fiscal adjustment then becomes particularly necessary to restore balance in the government budget (The African Economic Research Consortium, 1998).

There are numerous empirical studies available on revenue and expenditure nexus all over the world but there is no consensus about the linkage between these variables. Unidirectional causal evidences from revenue to expenditure and from expenditure to revenue are available in the literature whereas some studies claim bidirectional linkage between these important variables. Besides that revenue and expenditure independence are also reported in the literature.

Extensive empirical works have been done with regard to the above stated hypotheses. The use of different econometric techniques by various studies has revealed different results. This is as a result of the fact that various studies focused on different countries, varying time horizons and periods, used different proxies for government revenue and government expenditure. The empirical results of these studies have been varied and sometimes conflicting.

The results sometimes differ on the direction of causality and its impact on government policy. Hasan and Lincoln (1997) conducted a research on revenue and expenditure for United Kingdom by using cointegration and quarterly data from 1961-93 was used. The study revealed that government tax revenue Granger causes government expenditures and vice versa.

Rafaqet and Mahmood (2012) examine government revenue and expenditure nexus for Pakistan by using annual data for the period 1976-2009. Using Johansen cointegration and Granger causality techniques, they found that there is no long run relationship among the variables whereas short run Granger causality analysis unveils that government revenue and expenditure have no causal linkage in Pakistan. Abdul Aziz and Shah Habibullah (2000) investigated causality between taxation and government spending by using an application of Toda-Yamamoto approach in Malaysia for the period 1960 to 1997. Their evidence generally supports the existence of bidirectional causality between government spending and tax revenues.

Muhammad et al. (2012) examined the unidirectional causality between government expenditure and the revenue, annual data for Pakistan from the period of 1979 to 2010 using Granger causality for the outlined variables. The results indicated that there is an unidirectional causality between the expenditure and revenue, which runs from tax revenue to government

expenditure, that is the previous lags of tax revenue has a causal effect on the current government expenditure.

Omo and Taofik (2012) examined the long- run relationships and dynamic interactions between the government revenues and expenditures in Nigeria over the period 1970 to 2008. They used Autoregressive Distributed Lag (ARDL) bound test the results. When expenditure was made the dependent variable, the results revealed that there is a long run relationship between government expenditure and revenue. When revenue was made the dependent variable, no evidence of a long run relationship was established. Thus, the tax- spend hypothesis was therefore confirmed.

Mohsen et al. (2012) examined the causal relationship between the government expenditure and non-oil revenues in a panel of 11 selected oil exporting countries using panel unit root tests and panel cointegration analysis. The results revealed a strong causality from GDP and non-oil revenues to government spending in the oil exporting countries. Yet, spending does not have any significant effect on revenues in short- and long-run. This study supports the tax-and-spend hypothesis, implying that raising taxes in an attempt to reduce deficit will also cause expenditure to rise. Hence, it will be impossible to reduce deficit by increasing taxes.

Saeed and Somaye (2012) investigate the causality and the long-run relationships between government expenditure and government revenue in oil exporting countries during 2000- 2009 by using P-VAR framework. Since the major share of total revenue in these countries is related to the oil revenue, hence the oil revenue is applied as proxy of total revenue. The results revealed a positive unidirectional long-run relationship between oil revenue and government expenditure.

Yousef and Mohammad (2012) investigated the relationship between government revenue and government expenditure in Iran by applying the bounds testing approach to cointegration. The

results of the causality test show that there is a bidirectional causal relationship between government expenditure and revenues in both long run and short run. Therefore, the results of their study are consistent with fiscal synchronization hypothesis.

Owoye and Onafowora (2011) examined the causal relationship between tax revenues and government expenditures in twenty-two OECD countries, eleven European Union (EU) member states, and eleven non-EU using ARDL bounds test and the Toda-Yamamoto approach to test for causality. The results established how long-run and short-run causal patterns differ across these groups within OECD. For the long-run causal patterns they found evidence to confirm the tax- and-spend hypothesis in eight of the twenty-two countries; but the evidence is more widespread within the EU countries, where tax burdens are much higher than in the nonEU OECD countries.

Keho (2010) researched on European space to analyze the cause and effect relationship between government expenditure and revenue using data from 1960 to 2005 while integrating and confirming the unidirectional causality between them as his findings of granger causality test indicate the unidirectional causality from government revenue to expenditure.

Chang and Chiang (2009) investigated the relationship between government revenue and government expenditure and sampled 40 Asian countries and indicated that there exist a bidirectional causal relationship between government expenditure and revenues in both the long and the short run. In this study, the fiscal synchronization hypothesis is confirmed.

Wolde-Rufael (2008) examined 13 African countries using Toda and Yamamoto causality test. The study revealed the direction of causation are mixed and his empirical evidence suggested that there was a bidirectional causality running between expenditure and revenue for Mauritius, Swaziland and Zimbabwe. However, there was no causality in any direction for

Botswana, Burundi and Rwanda. In the case of Ethiopia, Ghana, Kenya, Nigeria, Mali and Zambia there was unidirectional causality running from revenue to expenditure. However, there was unidirectional causality running from expenditure to revenue for Burkina Faso only.

Amoah and Loloh (2008) also conducted a study on linkage between government revenue and expenditure in Ghana by the use of the Engle-Granger bivariate cointegration and error correction model. The data for the analysis was based on annual frequencies from 1983 to 2007. The results of the study supports the tax and spend hypothesis in the short run contrary to the long run where it supported the spend and tax hypothesis. Government revenue and spending were thus per the results found to be cointegrated. Thus focusing on adjusting revenues in the short run to curtail financial instabilities in the form of budget deficit would be potent.

From the literature, the relationship between government expenditures and revenues is best established through country specific analysis as opposed to regional or global analysis. Again, the hypothesis with respect to the relationship between government revenue and expenditure has no discernable pattern among countries, in terms of whether developed or developing.

Lastly, the results are sensitive to the nature of the data utilized as well as the estimation approach. In other words, econometric methodologies, different data sets, and country specific characteristics are some of reasons for the different results on the direction of causality.

2.8.2. The relationship between external and internal revenue sources

Several studies have shown an inverse relationship between external transfers and local authority tax revenue. This is evidenced by a study by Ghura (1998). He sampled 39 countries

from sub-Saharan African over the period of 1985 to 1996. His studies revealed that external transfers have substantial negative effect on the ratio of taxes to GDP.

Remmer (2004) used a larger sample of 120 and a lengthier time period for developing countries for the period, 1970 to 1999. Her studies revealed a negative relationship between external transfers and GNI. As noted above, Gupta et al (2004) found similar results with data from 107 low and middle-income countries over the period 1970 to 2000, and Odedokun (2003), with data for 72 low-income countries over the period 1970 to 1999, and used crosscountry regression analysis to investigate the response of recipient government revenue effort to foreign aid. Specifically, the study tested whether the tax/GDP ratio differs in response to external transfers. Both found evidence in support of the hypothesis that foreign aid reduces recipient government tax effort.

Benedek et al (2012) examined the relationship between foreign aid and revenue for the period 1980 to 2009 using 118 countries. Their study showed a negative relationship between external funds and internal revenue. This study however revealed a weak negative relationship. Again, Kaleem (2011) examined fiscal decentralization for local development for the period 2007 to 2010 using Kumasi Metropolitan Assembly as a case study. His studies showed that the District Assemblies' Common Fund (DACF) negatively affected the performance of Internally

Generated Funds (IGF). The study further stated that District Assemblies over relied on DACF.

Akudugu (2013) examined why the District Development Facility (DDF) was introduced. According to his findings, the DDF was set up by the government of Ghana and her development partners to induce and enhance performance by District Assemblies.

Schoeman (2011) assessed the fiscal performance and sustainability of local governments in South Africa, specifically, examined the internal revenue collection and its sustainability of the local municipalities. Using the Gross Value Added (GVA) criteria, the study deduced that a

large number of municipalities did not adhere to the premise that a dominant amount of their revenues generated should come from their own sources in order to finance their current expenditure. This is because the study found about one third of the municipal assemblies to be dependent on grants and funding from the central government while generating less than 20 per cent from their own resources. The study thus recommended the improvement of municipalities to be more financially independent; this would be possible if a critical look is given to the accountability for being more financial independent which would mitigate budget deficit.

Mahdavi and Westerlund (2011) also examined the fiscal stringency and fiscal sustainability with evidences from American States and local government using a panel data analysis. This analysis spanned the period 1961-2006 panel data for 47 states. The study found a strong support for intertemporal balanced budget and fiscal sustainability which is expected by many.

The New South Wales treasury in the year 2003 conducted a study on the financial sustainability of the New South Wales local government sector. Using a panel data analysis for about 152 councils, the study found operating deficits to be unsustainable with about just one third of the councils representing 50 councils to be operating on budget surplus, the rest of the council were in deficits. This study also brought to bare the deterioration of the financial sustainability in these councils, based on the LTFP; nearly 50% of the council's sustainability position is expected to deteriorate with about 46% likely to be weak or lower within the next three years. The study thus recommends at least a breakeven operation in the sense that the expenditure and revenues at the local level should be at par in order to ensure financial sustainability.

Rochester (2008) and the Queensland Treasury Commission also evaluated the financial sustainability in their local governments. The study conducted also found a significant number

of local governments of about 65% recording operational deficits. This tends to affect the financial flexibility of the local governments, minimize their potential to maintain their operations as well as giving a high likelihood of the transfer of these deficits to the future generation. The study recommended that the local governments should target an operating plan which is balanced or even surplus. Any deficit should be probed to ensure its mitigation to the barest minimum. Zhou & Chilunjika (2013) enquired into the challenges of Self-financing in Local Authorities in Zimbabwe and found self-financing which is a reliable source of financing the excessive deficits to be a major challenge for local authorities in Zimbabwe.

Osei-Akoto et al (2007) also assessed the public spending at the district levels in Ghana by focusing on the income and expenditures at the lower levels of governance. The study covered the period between 1994-2004 annual frequencies. The study found personal emolument to constitute the highest form of expenditure at the Metropolitan Assemblies with capital expenditure being the bulk at the district levels. It became evident that the level of funds from the District Assembly Common Fund (DACF) utilized by the district assemblies has been declining with substantial fluctuations. This further gave an indication of deficits since 1998 thus weak financial sustainability.

Asiama et al (2004) did an assessment of the fiscal sustainability in Ghana as a whole. The study aimed at specifically inquiring into government's reaction to rising budget deficit and public debt. By the use of quarterly time series data from 2001:1 to 2014:1 and applying the Autoregressive Distributed Lagged Model (ARDL), the study found between these periods that there existed a long run and short run relationship between primary balance and previous debt. They found evidences of public debt increasing since 2006 and is always at its peak during election cycles. This severely renders the fiscal sustainability at risk and questionable. They

thus recommend a Fiscal Responsibility Act that would help reduce excessive expenditure over runs during this period as well as promoting less expensive borrowing.

Bavere (2011) examined the role of the District Assemblies' Common Fund (DAF) on local development in the Jaman north and south districts from 2007 to 2009. The study sampled 498 respondents from both districts. It concluded that, DAF is the main and reliable source of revenue for funding local projects. A study by Gyireh (2011) on how to improve revenue mobilization by district assemblies from 2000 to 2009 supports the revelation by Bavere (2011). Her study sampled 70 respondents and concluded that, district assemblies relied heavily on central government transfers to finance local projects. The above literature clearly shows how countries and local governments overly rely on external grants to finance projects. In other words, local governments' deficits are financed by external revenue sources. As a result of the over reliance on external transfers, the relationship between internal and external revenue sources can also be said to be negative.

CHAPTER THREE

METHODOLOGY AND EMPIRICAL STRATEGY

3.1 Introduction

The methodology and empirical strategy presents how the objectives of the study are measured and the inferences made. This section discusses the model specification, the types and sources of data, detailed description variables and the estimation procedure using panel data from ten selected districts in Ghana spanning from 2009 to 2014. Finally, random effects and the Pooled Ordinary Least Square estimators are discussed in detail in this chapter.

3.2 Model specification

As indicated in most studies, fiscal balance of a social planner is based on its intertemporal budget constraint (see Asiamah et al., 2014; Antwi and Attah Mills, 2013; and Cuddington, 1997). This generic form of presenting the fiscal sustainability position of a social planner is generally accepted because it defines the tax and spending ratio of the social planner that can be maintained indefinitely without the excess accumulation of debt. This study adopts the approach suggested in the intertemporal budget constraint framework as its theoretical background and makes an extension to include other variables that explain the solvency position of a social planner taken into consideration its external revenue generation sources.

The baseline model of the social planner intertemporal budget constrain is written as;

$$R_t + D_t = E_t + (1 + r_t)D_t \dots\dots\dots 3.1$$

Equation 3.1 is the one period inter-temporal budget constraint of the social planner at time (t). R_t represents the revenue, D_t represents the debt stock, E_t is the district level expenditure. The element of money finance is ignored because the social planner has no authority to finance its budget by printing currency. The right hand side of equation 3.1 states the sources of revenue to the social planner while the left hand side states the uses of revenue by the social planner. The study examines revenue generation and fiscal balance of district assemblies in Ghana. The expression in equation 3.1 says that, the selected districts in Ghana finance their fiscal deficits by borrowing. If district assemblies in Ghana fund their budget on period-by-period basis in a static framework, we can rewrite equation 3.1 as;

$$\Delta D_{t+1} = R_t - E_t \dots\dots\dots 3.2$$

Equation 3.2 says that, the period-by-period debt stock of district/municipal assemblies in Ghana at time (t) is the difference between their revenue and expenditures. Equation 3.2 is extended to include variables that explain the fiscal solvency and sustainability of district/municipal assemblies in Ghana. An extension of equation 3.2 in a functional specification is written as;

$$\ln(R - E)_{it} = \alpha + \varphi_{it} + \pi_t + \beta_1 \ln TT_{it} + \beta_2 \ln SS_{it} + \beta_3 \ln POP_{it} + \beta_4 \ln Size_{it} + \beta_5 \ln Cat_{it} + \beta_6 \ln IGF_{it} + \mu_{it}$$

.....3.3

$$i = 1, 2, \dots, 10 \quad t = 1, 2, \dots, 60$$

The general intercept in equation 3.3 is denoted by α , the district/municipality specific effects is represented with φ_{it} which includes unmeasured institutional, administrative, historical and political differences of a specific district/municipality. The time specific effects in equation 3.3 is represented by π_t , and μ_{it} is the stochastic disturbance term. $\beta_1, \beta_2, \dots, \beta_6$ are the coefficients to be estimated. The coefficients in the log specification in equation 3.3 are elasticities. TT_{it} represents the total transfers for a specific district/municipality included in the study, SS_{it} represents the staff strength of a specific district/municipality, POP_{it} represents the population of a specific district/municipality, $Size_{it}$ represents the size of the district, IGF_{it} represents the internally generated funds and Cat_{it} of a specific district/municipality, whether urban or rural.

3.3 Data type and sources

Panel dataset from 10 selected districts in Ghana that span from 2009 to 2014 was employed in this study. A total of 60 observations are used in this study. This consists of 10 categories (districts and municipalities) by a sample period of 6 years. The selected districts for this study include; Bibiana, Bawku, Atwima Mponua, Akuapem North, Asunafo North, East Gonja, Ho, Lawra, Cape Coast, and Accra Municipal Assembly. The choice of these districts was informed by the availability of data. The dataset was sourced from the annual financial statements of the selected District and Municipal Assemblies in Ghana. The category dataset, that is, whether rural or urban is represented with a dummy variable. The dummy variable is expected to measure the extent to which being an urban district or municipality affects fiscal sustainability.

3.4 Description of Variables

3.4.1 Dependent variable for the study

Balance of District and Municipal Assemblies ($R - E$)

This measure the balance between the total revenue generated from all sources and the expenditure of the District/Municipal Assembly. In this study the main sources of revenue to the Districts/Municipal Assemblies are the external sources. This consists of District Assembly Common Fund (DACF) and District Development Facility (DDF). The expenditure element of District and Municipal Assemblies consist of all expenditures in which goods and services are paid for. It therefore excludes transfer payments and other forms of transfers. It states the solvency position of the District and Municipal Assemblies. This iteration is the fiscal response function or the fiscal reaction function of the District and Municipal Assemblies. The stability and soundness of fiscal policy depends on the right fiscal reaction function (Asiama et al., 2014).

3.4.2 Explanatory variables for the study

Total Transfers (TT)

This involves the direct payment of money made to the District and Municipal Assemblies that does not involve the exchange of goods and services. It consists of government transfers and other institutions transfer to the various Districts/Municipal Assemblies in the form of grants and assistance. Data on total transfers are obtained from the annual financial statement of each district.

Staff Strength (SS)

Staff strength is a measure of the human capital base of the District and Municipal Assemblies. Staff strength or the human capital base of the district Assemblies play a critical role in managing the fiscal instabilities emanating from the budget of District and Municipal Assemblies. It represents the number of workers at the various Districts and Municipal Assemblies. The data on staff strength is obtained from the annual recorders of the various Districts and Municipal Assemblies.

Population (P)

This is the total number of people that inhabit the boundaries of a particular District or Municipality. It measures the total residents of the District/Municipality as reported by the Ghana statistical service annually. Population was included in the model as an independent variable to measure the effect of a growth in population at the District/Municipal level affects

the fiscal stability of the District and Municipal Assemblies. Population data is sourced from the Ghana Statistical service.

Size

The size of the Districts/Municipality in this study measures the geographical boundaries of the District/Municipality. In effect it takes into consideration the surface area of the District/Municipality in Kilometers (Km). The size of a District or Municipality affects its fiscal administration. The study investigates how variations in the size of a District/Municipality affect its fiscal stability especially when it comes to sustainability. Data on the size of the Districts/Municipality is sourced from the various District/Municipal Assemblies.

Category (Cat)

The category of the District/Municipality states whether it is urban or rural. The study examines how being an urban District or Municipality affects fiscal sustainability. To measure this, a dummy variable is used to capture the status of the District/Municipality. A dummy of one means urban while a dummy of zero means otherwise (if $DU=1$, = 0 otherwise)

Internally generated funds (IGF)

Internal generated fund in this study is that revenue that is generated through internal mechanisms at the Districts/Municipal Assemblies. They collect through District/Municipal level taxes and levies. An improvement in internally generated funds is expected to make the Districts/Municipalities more solvent.

Table3. 1: Measurement of variables and their expected signs

Variable	Measurement	Source	Expected sign
Balance	It is measured as the difference between the revenue and expenditure	Annual financial report of DMMAs	
Population	The total of people living within the District/Municipality as reported by the Ghana statistical service	Ghana Statistical Service	-/+
Staff strength	The human capital base of the various Assemblies	DMMAs	-
Size	The administrative boundaries of the various Assemblies	DMMAs	+
IGF	Revenue generated through internal mechanisms such as taxes and levies	Annual financial report of DMMAs	-
Category	Categorization of the Districts into urban or rural	Dummy	+/-
Total transfers	Total transfer of funds to the District/Municipal Assemblies from external sources	Annual financial report of DMMAs	-

3.5 Estimation Procedure

Panel data analysis procedures are followed in the study since the data exhibit both time-series properties and cross sectional properties. When the set of data available to the research contain entities whose behavior are observed across time, such data is considered panel data and therefore the researcher is expected apply carefully panel data analysis techniques (TorresReyna, 2007). Panel data analysis techniques controls for individual differences since it permits the inclusion of individual specific variables and time invariant variables and it is also the right method for investigating dynamic changes. It also gives less correlated variables and more degree of freedom due to its times series and cross sectional properties. In this study, pooled ordinary least squares (P-OLS), random effects model (REM) and fixed effect (FEM) estimators are employed. The study first begins with testing the integration properties of the

variable using the unit root test procedure suggested by (Livin, Lin and Chu, 2002); and (Im, Pesaran and Shin, 2003).

3.5.1 Panel Unit Root Tests

The study measures the panel unit root properties of the variables following the procedure due to Livin, Lin and Chu (2002) and Im, Pesaran and Shin (2003). The procedure proposed by Im, Pesaran and Shin (2003) is able to solve serial correlation problems since it is powerful and less restrictive. It allows heterogeneity among the units in a more dynamic panel structure. The Im, Pesaran and Shin (2003) unit root test equation is specified as;

$$\Delta y_{it} = \alpha_i + \beta_1 \Delta y_{it-1} + \beta_2 \Delta y_{it-2} + \dots + \beta_p \Delta y_{it-p} + \epsilon_{it} \quad (3.4)$$

$i = 1, 2, \dots, 10 \quad t = 1, 2, \dots, 6$

y_{it} stands for each variable that is included in the model to be estimated, p is selected to achieve and uncorrelated residual and α_i is individual effect. The null hypothesis and alternative hypothesis are stated as;

$H_0: \alpha_i = 0$ for all i 's and the alternative hypothesis is stated as;

$H_1: \alpha_i \neq 0$ for $i = 1, \dots, N_1$

The null hypothesis states a condition of non-stationary against an alternative of stationary. The IPS statistic is based on averaging individual ADF statistics. The t-statistic for the ADF is based

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α , β , and γ are the specific parameters to be estimated. X_{it} is a representation for the exogenous variables, y_{it} is a representation for the pooled variable, and u_{it} is a representation for the error terms assumed to be mutually independent disturbance (*mid*). The lag order across the heterogeneous terms is allowed to vary.

3.5.2 Pooled Ordinary Least Square (P-OLS)

This technique basically ignores the multi-dimensional properties of the variables. The heterogeneity and other panel properties of the data are not considered due to the pooled nature of the estimators. This is often the simplest panel technique with regards to various panel estimation techniques. Although considered naïve, its estimates has statistical and economic implication from which inferences can be made. The basic specification of the pooled ordinary least square (P-OLS) is written as;

This technique basically ignores the multi-dimensional properties of the variables. The heterogeneity and other panel properties of the data are not considered due to the pooled nature of the estimators. This is often the simplest panel technique with regards to various panel estimation techniques. Although considered naïve, its estimates has statistical and economic implication from which inferences can be made. The basic specification of the pooled ordinary least square (P-OLS) is written as;

$$YX_{it} \dots \dots \dots 3.6$$

X_{it} is a vector of independent variables observed for district i at time t , Y_{it} represents the dependent variable for the cross-sectional units (districts), α is the constant term, and ϵ is the Gaussian error term for district i at time t .

3.5.3 Random Effects Model

This method assumes that, the individual effects are identically, independently distributed over the individual components. Heterogeneity effects are netted by the constant term (intercept) and the random components. The specification of the random effects model is written as;

$$Y_{it} = \alpha + \beta X_{it} + \epsilon_{it} \dots\dots\dots 3.7$$

From equation 3.7, X_{it} are the number of explanatory variables for District/Municipality i at time t , Y_{it} represents the explained variable for District/Municipality i at time t , the coefficient of the explanatory variable is represented by β , α is an unknown constant (intercept), and ϵ is the Gaussian error term. ϵ is an error term that caters for the cross sectional error component and the individual component assumed to be time variant. It is however uncorrelated over time. The random effects estimator allows the researcher to know whether variations are from within or between the individual districts. It also permits time-invariant variables to be estimated within it framework.

3.5.4 Panel causality test

The study also tests the causal relationship between internal revenue (IGF) and external revenue (Total Transfers). Panel causality test due to the stacked criteria is applied. This approach assumes that all coefficients across cross sections are homogeneous. This approach first treat the panel dataset as a large stacked data while still maintaining heterogeneity among

cross sections, such that data from one cross section does not enter the lagged values of data from the next. The method assumes homogenous coefficients across all cross sections. This is adopted due to finite sample size. Other causality test such as the Donutrescu and Hurlin (2012) are often in infinite sample bias. The linear models considered in this study are specified as;

$$IGF_{it}, \alpha_i + \sum_{k=1}^K \alpha_{i(k)} IGF_{it-k}, \alpha_i + \sum_{k=1}^K \alpha_{i(k)} TT_{it-k}, \alpha_i + \epsilon_{it}, \dots \quad 3.9$$

$$TT_{it}, \alpha_i + \sum_{k=1}^K \alpha_{i(k)} TT_{it-k}, \alpha_i + \sum_{k=1}^K \alpha_{i(k)} IGF_{it-k}, \alpha_i + \epsilon_{it}, \dots \quad 3.10$$

$$i = 1, 2, \dots, N \quad \alpha_i = (\alpha_i^{(1)}, \dots, \alpha_i^{(K)}) \quad t = 1, 2, \dots, T$$

IGF and Total Transfers are stationary variables observed for 10 Districts/Municipalities in 6 years. α_i is the individual effects which are considered to be fixed over time. The K lag orders are identical for the cross-section individual panel. $\alpha_{i(k)}$ is the autoregressive parameters which is allowed to vary. The regression coefficient $\alpha_{i(k)}$ is also allowed to vary across sets.

3.5.6 Model diagnosis test

3.5.6.1 Hausman test

The Hausman test is carried out to decide whether the fixed effect model or the random effect model is the appropriate model. The null hypothesis of the Hausman test states that the random effect model is the appropriate and preferred model while the alternative hypothesis states that the fixed effects model is the appropriate and preferred model. Therefore if the null hypothesis

is rejected 5% significance level, the implication is that the fixed effect model is preferred but if the null hypothesis is accepted the implication is that the random effects model is preferred

3.5.6.2 Breusch-Pagan LM test

This test is carried out to check whether the random effects estimates are the most preferred compared to the pooled ordinary least square estimates. The null hypothesis states that the pooled least square estimates are the preferred while the alternative hypothesis states that the random effects estimates are more preferred. The null hypothesis is accepted or rejected at 5% significance level.



CHAPTER FOUR

FINDINGS AND DISCUSSION OF RESULTS

4.1 Introduction

This section presents the empirical findings and the discussion of results from the analysis of data. The trend analysis of variables, the stationarity and non-stationarity test results, the pooled-OLS, random effects and the fixed effect results, the panel causality test results, and the model diagnosis test results are presented in this section.

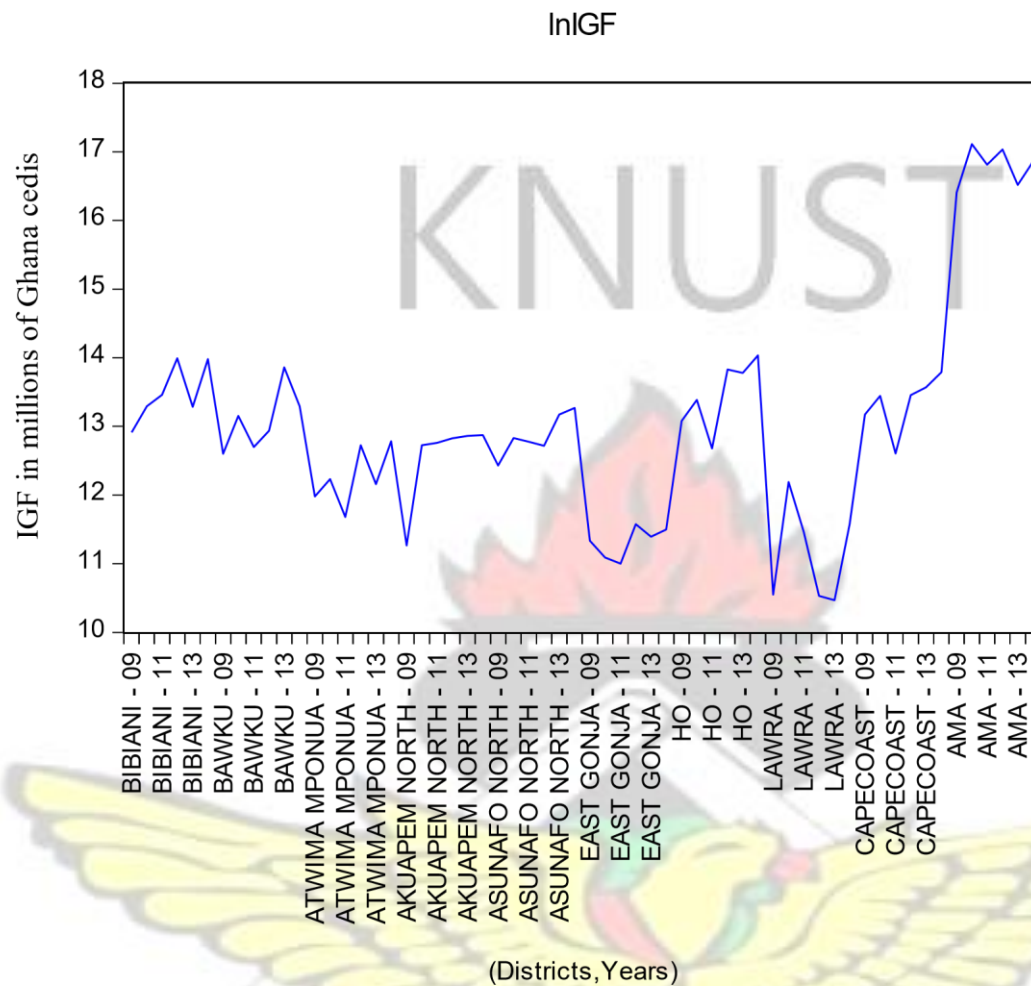
4.2 Trend Analysis of variables

The trend of the log values of internally generated funds, total revenue, total expenditure of Districts/Municipalities, total transfers, and the balance position of the Districts and Municipal Assemblies is plotted to provide a pictorial behaviour of these variables over time. Graphing these variables reveals the periods in which these variables are rising or falling. The purpose of analysing the trend of these variables is to help explain how these variables have performed over time in the respective Districts/Municipalities. It is also expected to explain how these variables will respond to temporal shift factors.

4.2.1 Trend in internally generated funds (IGF)

Figure 4.1 plots the trend in internally generated funds for all 10 Districts/Municipalities in Ghana selected for the study. It shows the peaks and falls in the amount collected as internally generated revenue by the Assemblies.

Figure 4.1: Trend of variables

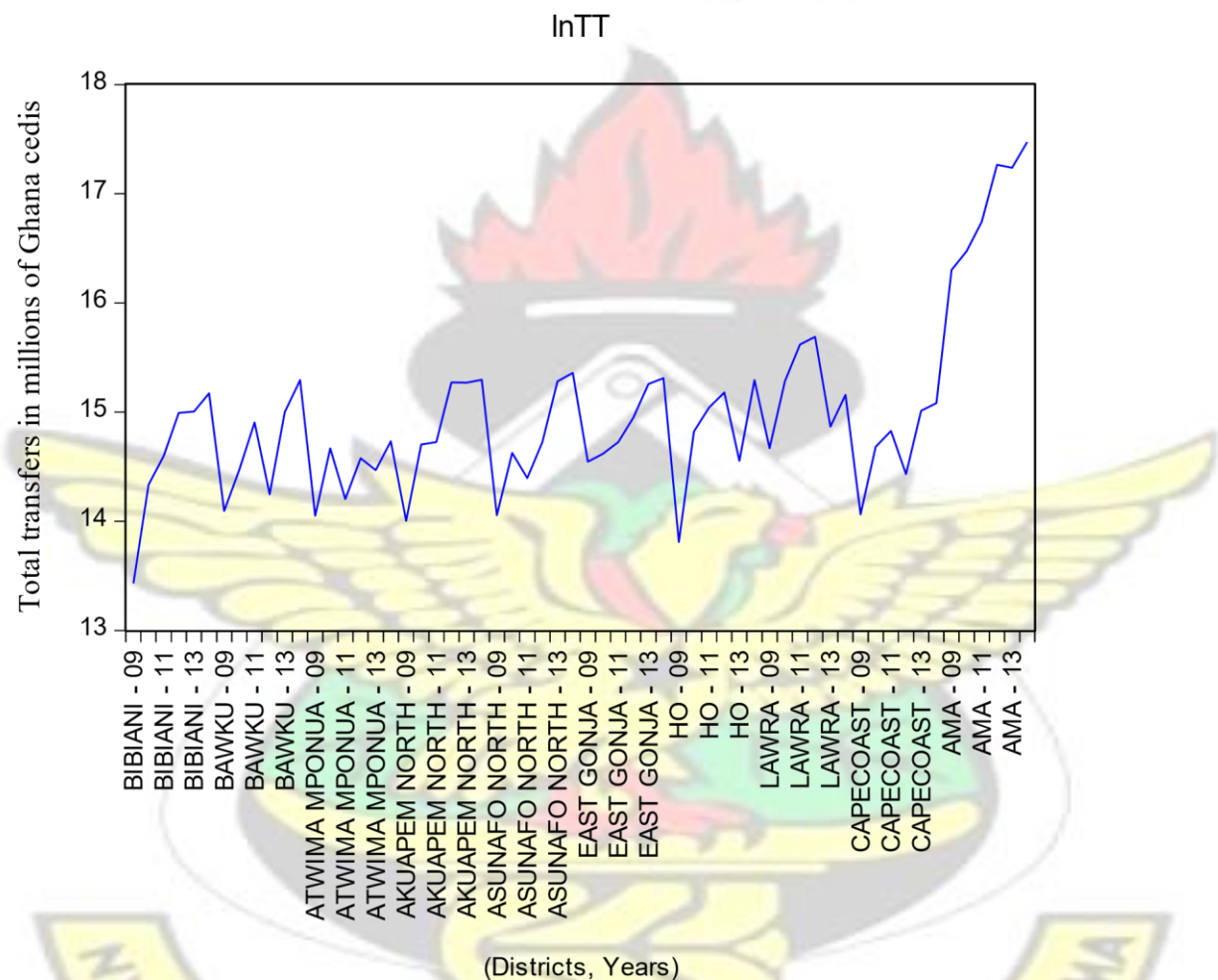


There are a series of swings in the trend as displayed in the Figure above. Lawra District in the upper west region recorded the lowest in the amount collected as IGF in 2009 while Accra Metropolitan Assembly recorded the highest in IGF in 2013. Although most of the Districts that were selected for the study seem to have witnessed inconsistent growth in IGF between 2009 and 2013, as displayed by the rise and fall in the trend for such Districts/Municipalities, Cape coast and Accra metropolitan Assembly witnessed a continuous growth in IGF from 2009 through to 2013. This indicates that the two urban Assemblies are more proactive and consistent when it comes to the collection of IGF.

4.2.2 Trend in total transfers (TT)

Figure 4.2 shows the trend in total transfers for the Districts/Municipal Assemblies selected for the study. Total transfers represent the sum of money collected by the Assemblies from external sources.

Figure 4.2: Trend in total transfers

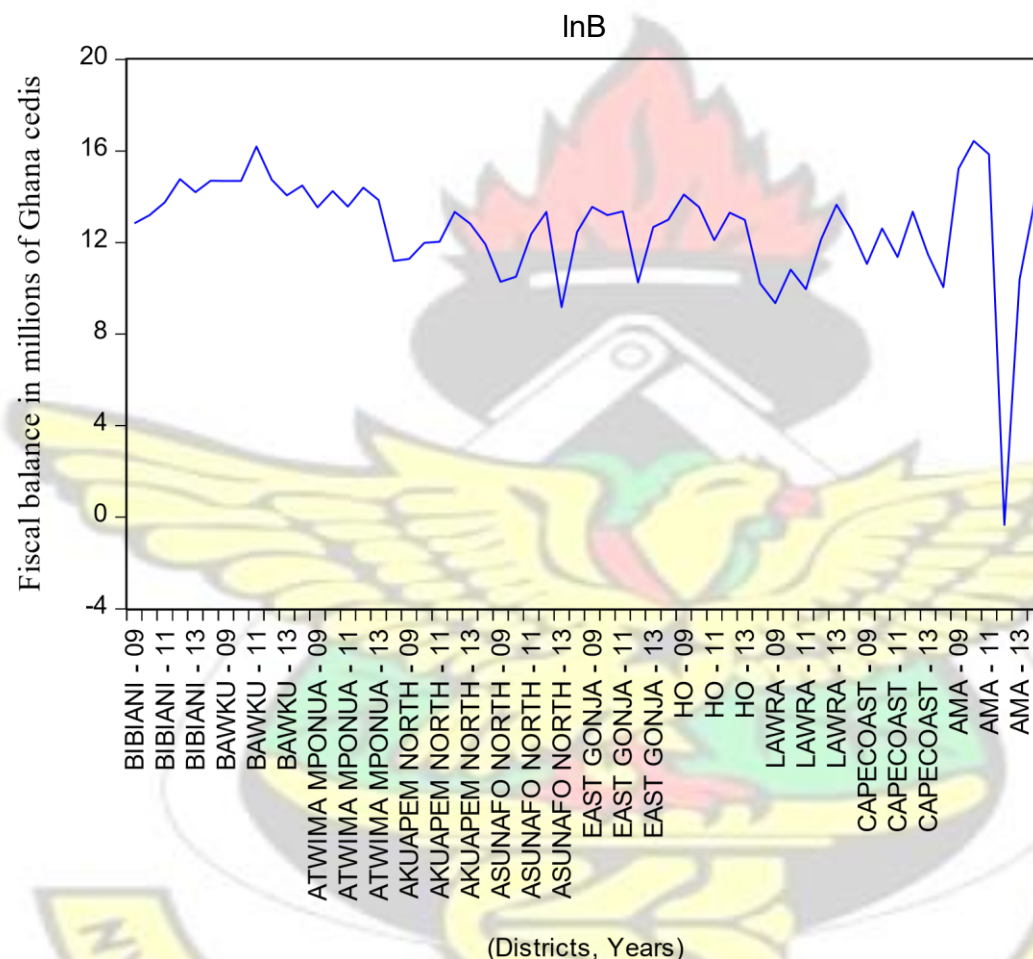


It is evident from Figure 4.3 that out of the ten (10) selected District/Municipal Assemblies, two (2) of them, that is Cape Coast and Accra Metropolitan Assembly witnessed an increasing trend in total transfers to their respective Assemblies from 2009 through to 2014. The remaining eight (8) District/Municipal Assemblies however witnessed a series intermittent peaks and falls in the amount received as total transfers to their respective Assemblies.

4.2.3 Trend in fiscal balance of District/Municipal Assemblies

Figure 4.3 is a pictorial display of the trend in fiscal balance of all ten (10) District/Municipal Assemblies. The fiscal balance of all ten Assemblies define the their total revenue and total expenditure

Figure 4.3: Trend in fiscal balance

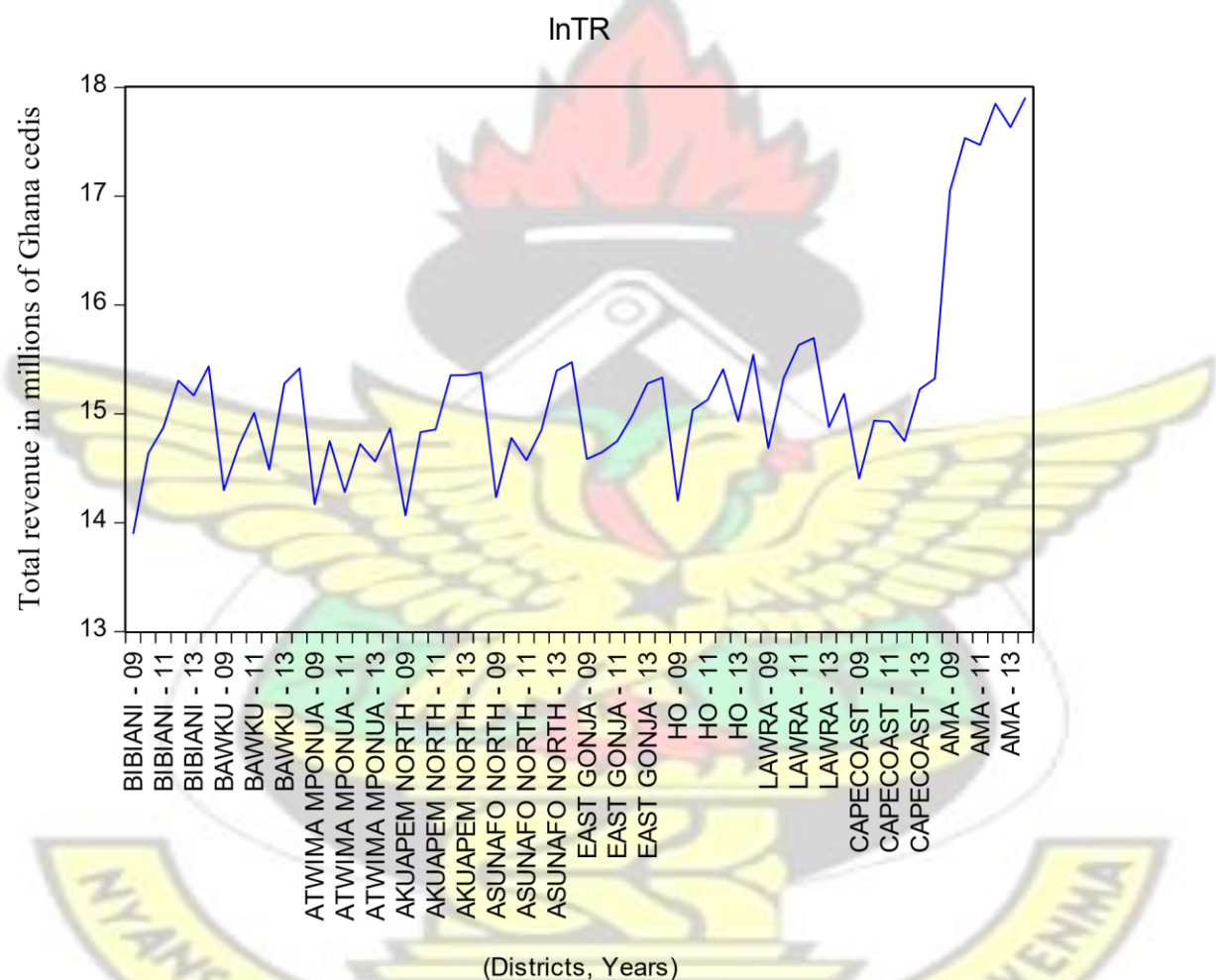


We can infer that all the ten Assemblies have since maintained a sustained level in terms of the balance deficits and surplus. Almost all ten Assemblies did not have a zero balance in terms of revenue and expenditure. The only Assembly that came close to having a zero balance between its total revenue and expenditure was Accra Metropolitan Assembly in 2012.

4.2.4 Trend in total revenue of District/Municipal Assemblies

Figure 4.4 is the graphical representation of the trend in the total revenue of all ten (10) District/Municipal Assemblies in Ghana. It show the behaviour of revenue generated from both internal and external sources of the various Assemblies.

Figure 4.4: Trend in total revenue



From the diagram we can infer that only two Assemblies, Cape Coast and Accra Metropolitan Assemblies have demonstrated consistency in revenue generation from both internal and external sources. The remaining eight Assemblies have however not demonstrated a consistent growth in the amount that is generated as revenue from both internal and external sources.

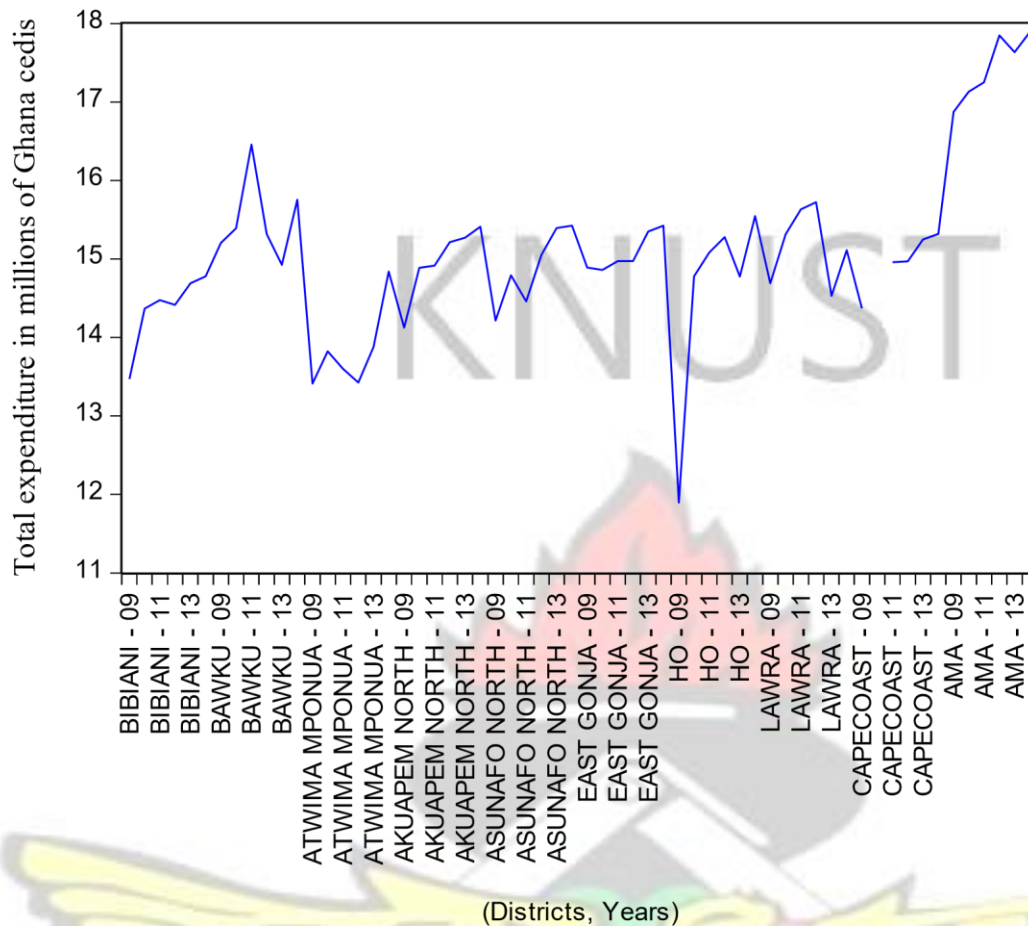
Accra Metropolitan Assembly experienced its highest growth in 2011, the highest to be recorded among the ten (10) Assemblies with slight decline in 2012, which however rose suddenly in 2013. This demonstrates that urban Assemblies are capable when it comes to revenue generation.

4.2.5 Trend in total expenditure of District/Municipal Assemblies

The trend in total expenditure of all ten (10) Assemblies is displayed in Figure 4.5. It can be revealed that most of the rural Assemblies selected for the study experience low expenditure. Among the ten (10) Assemblies, Atwima Amponua, East Gonja, and Bawku recorded a low level of expenditure. The lowest however was recorded by Ho Municipal Assembly in 2009. Cape Coast and Accra Metropolitan Assemblies however reported the highest in terms of total expenditure. As a matter of fact, Accra Metropolitan Assembly reported the highest level of expenditure in 2011. The reason for the high expenditure in these urban Assemblies may be due to the size of their administrative boundaries and the continuous growth in urban population.

Figure 4.5: Trend in total expenditure

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The conclusion reached at is that, although urban district are likely to generate more in revenue from both internal and external sources, there are also likely to be faced with higher expenditure elements in their budgets.

4.3 Panel unit root results

The study also checked for the integration characteristics of the variables employed in the study. Tables 4.1 and 4.2 reports the panel unit root test results for the levels and the first difference of the variables. The unit root test results due to Levin, Lin and Chu (2002), and Im, Perasan and Shin (2003) are reported at both their levels and first difference. Levin, Lin and Chu (2002) test procedure test for common roots in the series in their panel form, while Im, Perasan and Shin (2003) test procedure test for individual root in the series in their panel form.

Table 4.1: Unit root test results (LEVEL)

Variable	LLC		IPS	
	Cons	Cons+T	Individual Cons	Individual Cons+T
lnTT	-6.22658***	-10.4955***	-2.24056	-0.37124
lnPOP	6.36827	-8.32818***	0.97088	-0.19648
LnSS	-21.5657***	-6578.69***	-7.17425	-841.669
lnIGF	-35.4019***	-60.5647***	-4.64068	-7.35853
LnSize	-4.64068***	-7.35853***	-2.24056	-0.37124
LnB	-3.39645***	-4.27617***	-1.59065	-1.50855
5% significance level***		Only IPS t-bar statistics are reported		

The LLC results for both the constant and constant with trend show the absence of unit root at the levels. The estimated probability values strongly reject the null hypothesis at 5% level of significance. The series according to the LLC results are stationary at the levels. On the other hand, the IPS results report the presence of unit root in the series at the levels, since the null hypothesis was strongly accepted at 5% level of significance.

Table**4.2: Unit root test results (1st DIFFERENCE)**

Variable	LLC		IPS	
	Individual Cons	Individual	Individual Cons	Individual
		Cons+T		Cons+T
lnTT	-16.5105	-70.5246	-4.84071***	-7.13212***
lnPOP	-9.92410	-7.04221	-2.72115***	-3.74336***
LnSS	-5556.50	-2565.62	-704.628***	-401.601***
lnIGF	-51.2294	-77.9045	-7.63841***	-18.9077***
lnSize	-1.89415	-1.78962	-4.04452***	-6814.13***
LnB	-5.99551	-8.00225	-1.89415***	-1.78962***

5% level of significance Only IPS t-bar statistics are reported **Researchers**

own estimates, 2016

From Table 4.2, IPS results show the absence of series in the absence of unit root in the series after the first difference of the variable since the null hypothesis is strongly rejected at 5% significance level. The absence of unit root after first difference implies that the series due to the IPS approach are stationary after first differencing and therefore said to have an integrating order of one $I(1)$.

4.4 Hausman test results

It was also conventional to carry out the Hausman test as a check on the appropriate model to adopt to estimate the variables in their panel form. The null hypothesis of the Hausman test states that the random effects estimators are more preferred, while the alternative hypothesis states that the fixed effects estimators are more preferred.

Table**4.3: Hausman test results**

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	5.654899	4	0.2264

Researchers own estimates, 2016

From Table 4.3, the Hausman test results reports a probability value of 0.2264 which is greater than a probability value of 0.05. Therefore we fail to reject the null hypothesis at 5% significance level. Accepting the null hypothesis at 5% significance level implies that the random effect model is more preferred to the fixed effects model. The study, according to the Hausman test estimates the variables using the random effects procedure.

4.5 Pooled-OLS and Random Effect

Table 4.4 show the pooled-OLS regression results when model 3.3 is estimated using the pooled-OLS estimation procedure. By pooled-OLS estimation, we mean that the element of heterogeneity among the individual units is not considered when estimating. From the results below we either accept or reject the null hypothesis at 5% level of significance.

4.4: Pooled-OLS results

Variable	Coefficient	Std. Error	t-Statistic	Prob
LNTT	-0.417179	0.591093	-0.705776	0.4834
LNPOP	2.818068	1.167008	2.414779	0.0192
LNIGF	-0.640231	0.140526	-4.555961	0.0241
LNSIZE	0.463836	0.308500	1.503518	0.1385
LNSS	-1.570161	0.424964	-3.694809	0.0127

Table

CAT	1.687425	1.017822	1.657879	0.1031
R-squared	0.786081			
Adjusted R-squared	0.711458			
Log likelihood	-134.4381			
Durbin-Watson stat	1.854944			

Researchers own estimates, 2016

The results in Table 4.4 show that population, internal generated fund (IGF), and staff strength are the determinants of the fiscal balance Districts/Municipal Assemblies of the ten (10) Assemblies selected for the study. The log values of the variables used in estimation report all the coefficients as elasticities. The study strongly rejects the null hypothesis of the coefficients of lnPOP, lnIGF, and lnSS at 5% level of significance. The study however failed to reject the null hypothesis of the coefficient of lnTT, lnSIZE, and CAT at 5% level of significance. The coefficient of lnIGF is -0.640231, which is negative and statistically significant. The indication is that, every 1% improvement in internally generated funds (IGF) will reduce the fiscal balance of the ten selected Assemblies by 0.640%. The coefficient of lnPOP is 2.818068, which is positive and statistically significant 5% level of significance. A 1% increase in the population of respective Assemblies will cause a 2.818068% increase in fiscal balance. Population enters the relationship as expenditure element and hence increases in population will increase expenditure. This will in effect widen the deficit gap of the ten selected Assemblies. Finally

the coefficient of lnSS is -1.570161, which is negative and statistically significant at 5% level of significance. The implication is that, an improvement in staff strength will cause a 1.570161% decline in fiscal balance. An investment in human capital at the various Assemblies will reduce their fiscal gap. In effect, about 78% of variations in the fiscal balance of the ten selected assemblies are caused by the explanatory variables included in the model.

Table 4.5: Random effect results

Variable	Coefficient	Std. Error	t-Statistic	Prob
C	19.87148	7.606191	2.612541	0.0117
LNNTT	-0.960911	0.197405	-4.867713	0.0137
LNPOP	2.264831	1.125678	2.011971	0.0493
LNIGF	-0.298931	0.528476	-0.565648	0.5740
LNSIZE	0.098820	0.323941	0.305057	0.7615
LNSS	-2.580409	1.404249	-1.837572	0.0717
CAT	1.816564	0.965512	1.881451	0.0654
R-squared	0.897551			
Adjusted R-squared	0.888029			
F-statistic	12.06872			
Prob(F-statistic)	0.027522			
Durbin-Watson stat	2.071536			

Researchers own estimates, 2016

Table 4.5 show the results for the random effects model. From the random effects estimates, total transfers, population, and staff strength are the determinants of fiscal balance. The coefficients of lnTT and lnPOP were significant at 5% level of significance, while lnSS is

significant at 10% level of significance. The coefficient of $\ln TT$ is -0.960911, which is negative and significant at 5% level of significance. Increasing total transfers by 1% will reduce fiscal balance by 0.9609%. Again the coefficient of $\ln POP$ is 2.264831, which is positive and significant at 5% level of significance. An increase in population is expected to cause an increase in the fiscal balance by 2.2648%. Population increases enters the fiscal elements of the Assemblies as an expenditure element, and hence widen the fiscal balance gap. Finally, the coefficient of $\ln SS$ is -2.580409 and statistically significant at 10% level of significance. An improvement in the staff strength by 1% is expected to cause a reduction in the fiscal balance gap. This means the strength of these institutions, measured by their human capital base has a significant impact on the fiscal administration of District and Municipal Assemblies.

4.6 Panel causality test results

Table 4.6 is a representation of the panel causality test for total transfer (TT) and internally generated funds (IGF). The null hypothesis states no direction of causality between the variables while the alternative hypothesis states a condition of causality between the variables.

Table 4.6: Panel causality test results

Lags: 2			
Null Hypothesis	Observations	F-Statistic	Prob.
LNTT does not Granger Cause LNIGF	40	8.32537	0.0011
LNIGF does not Granger Cause LNTT		4.61743	0.0166

Researchers own estimates, 2016

From Table 4.6, the probability value of no causality running from $\ln TT$ to $\ln IGF$ is 0.0011; hence the null hypothesis of no causality is strongly rejected at 5% level of significance. Also

the probability value of no causality running from lnIGF to lnTT is 0.0166; again the hypothesis of no causality running from lnIGF to lnTT is strongly rejected at 5% significance level. The study concludes that, there is bi-directional causality running internally generated funds to total transfers. The implication is that, reducing IGF will impact greatly on total transfers (TT), likewise reducing total transfer (TT) will impact IGF.

4.7 Model diagnosis test

The study also tests for the presence of cross-section dependence or correlation in the residual. A null hypothesis no cross-section dependence in the residual was test against an alternative hypothesis of the presence of cross-section dependence in the residual. The Breusch-Pagan LM test, Pesaran Scaled LM test, and the Pesaran CD test for cross-section dependence were applied.

Table 4.7: Residual correlation test

Null hypothesis: No cross-section dependence (correlation) in residuals			
Total panel observations: 60			
Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	76.32612	45	0.1224
Pesaran scaled LM	2.247971		0.2246
Pesaran CD	0.492028		0.6227

Researchers own estimates, 2016

Inferring from Table 4.7, the probability values of all three test procedures clearly accepts the null hypothesis of no cross-sectional dependence in the residuals. Therefore the absence of no

cross-section dependence informed the choice of the LLC and IPS stationary and nonstationary test procedures presented in the above.

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CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter is outlined as follows; the summary of major findings, conclusions, and policy implications. The summary of all major findings on the subject matter are presented in this chapter, with conclusions reached at, various policy implications of all major findings are discussed more appropriately.

5.2 Summary of findings

Due to the inability of MMDAs to generate adequate internally generated funds (IGF), fulfilling their developmental agendas has become a persistent problem. This has resulted in fiscal balance at the District level and its associated problems. This study therefore identified the determinants of fiscal balance in Ghana.

The study employed a panel data analysis approach to examine fiscal balance in ten (10) selected MMDAs in Ghana. The study examined specifically; the trend in internally generated funds (IGF), total transfers, fiscal balance, total revenue and total expenditure; the causes and determinants of fiscal sustainability in District/Municipalities in Ghana; and the causality between internally generated funds (IGF) and total transfers (TT). The unit root test procedure due to Levin, Lin and Chu (2002) and Im, Peralta and Shi (2003) was used to test the stationary and non-stationary properties of the panel data set. Panel data from ten (10) Districts/Municipal Assemblies in Ghana spanning from 2009 to 2014 was used for the analysis. The Hausman test results revealed that the random effects model was more preferred to the fixed effects model.

To estimate the causality between internally generated funds (IGF) and total transfers (TT), panel Granger causality test was employed.

The random effects showed that total transfers (TT), Population, and staff strength were the main drivers of fiscal balance of the selected ten (10) District/Municipals in Ghana. Total transfer and staff strength had a negative and significant impact on fiscal balance while population had a positive and significant impact on fiscal balance. The pooled-OLS results showed that internally generated funds (IGF), population, and staff strength were the main determinants of fiscal balance for the ten (10) selected Assemblies in Ghana. Internally generated funds (IGF) and staff strength (SS) have a negative and significant impact on fiscal balance (B) while population had a positive and significant impact on fiscal balance. The panel Granger causality test revealed bi-directional causality from internally generated funds (IGF) to total transfers (TT).

5.3 Policy implications

Fiscal balance is very important at all levels of governance. At the local level, it ensures development in the form of provision of public goods and social amenities that improves the lives of the general public. Consistent with the findings of this study, the following policy measures are recommended to ensure and sustain fiscal balance and effective revenue mobilization at the local government level; Introduction of Participatory budgeting. District assemblies should actively involve the civil society and revenue collectors in the preparation of budgets to ensure public commitment. The involvement of civil society will ensure tax compliance by the general public. The achievement of a sustainable fiscal balance in this regard therefore becomes the collective responsibility of both the local assembly and the public.

The MMDAs must actively involve revenue collectors in the budget formulation process. Since Revenue collectors play a very active and instrumental role in generating internally generated funds (IGF) for district assemblies, their involvement in the budget planning and formulation process will ensure their full and total commitment to achieving a sustainable budget. Stakeholder Participatory fee fixing process, District assemblies must involve all stakeholders in the fee fixing process to improve fiscal management. Stakeholders must include; taxpayers, revenue collectors, opinion leaders, and technical experts especially in the area of economics and finance. This participatory approach will ensure and encourage tax payers to pay taxes voluntarily and with ease.

IGF-induced-external-grants, conditional external grants provide a useful example of how external revenue can improve IGF generation. External grants must be designed by the government and other external donors in such a way so as to induce and enhance local revenue mobilization. So that the amount of external grants received by district assemblies is positively related to the amount of IGF generated. In other words, the amount of external grants received by district assemblies in the current period must be a function of IGF generated in the previous period. This measure will serve as an incentive and inducement for improved revenue performance thereby leading to prudent fiscal management. This policy measure is useful and essential in discouraging district assemblies from overly relying on external grants at the expense of IGF generation. The implications of the above policies are to maintain revenue at levels that are equal to or outweigh expenditure levels.

5.4 Conclusion

The study concludes that inducing both internal and external revenue sources play a critical role in achieving fiscal balance in District and Municipal Assemblies. Effective revenue

generation and management with corresponding sustainable fiscal policies will enable District/Municipal Assemblies to be sound in working within their fiscal space. Assemblies must therefore be more effective when it comes to revenue generation from both internal and external sources.

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