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MASTER THESIS

VALSTYBĖS BIUDŽETO POVEIKIS FINANSŲ RINKOMS (NIGERIJOS ATVEJO TYRIMAS)	**THE IMPACT OF STATE BUDGET ON FINANCIAL MARKETS (USING NIGERIA AS A CASE STUDY)**

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INTRODUCTION

Relevance of the topic

This topic was chosen by the researcher in a bid to contribute to the body of literature in the field of banking and finance as it concerns budget management and the financial market globally. It is believed that one of the major causes of failure in state budget is the lack of credible vision and roadmap to achieve the budget. The importance of state budget in the financial market is therefore considered important and will be beneficial to shareholders of companies, the government, other interest groups and the economy at large if well managed. This topic therefore seeks to examine the impact of state budget on financial markets (using Nigeria as a case study).

The level of exploration of the topic

State budget plays a significant role in the economic growth, interest rates, inflation rate and stock markets of every economy. A fiscal deficit in the budget might occur when the state budget is not well managed, therefore, how the state is funded have an impact directly or indirectly on the money supply and interest rate in the economy. High interest rates increase the industry's cost of capital, resulting in fewer earnings and, as a result, lower stock prices, and as opined by the five-sector model of the circular flow of income (see appendix 1), the financial sector plays an important role of facilitating financial intermediation among households, businesses, and the government. The efficiency and output of the financial market are therefore dependent on the actions, or inactions of the state in terms of its expenditure and revenue that make up the state budget.

The novelty of the Master thesis

Several studies have been conducted on Nigeria's public debt (local and foreign) and its impact on the country's economic growth and development. However, there is a dearth of study on the link between fiscal deficit financing aspect of state budget and the effects on the country's financial markets. Furthermore, some of the recent studies used old domestic debt databases and did not take account of the growing trend of domestic borrowing by the government after the pay down of Paris and London Club debts in Nigeria. This study therefore seeks to bridge this gap by using the most recent data to examine the effects of the growing domestic debt on the country's domestic financial markets. The scope of the study covers the period of 2000 to 2020.

The problem of the Master thesis

According to Farmer (2012), the 2008-2009 Great Recession redefined the narratives of many economic entities and systems. The failure to establish a well-functioning financial market system aggravated the economic issues especially among the developing nations. Hence, the fiscal actions of the government have a great implication that is evident in the other economic variables (Stiglitz, 2010). Recessionary pressures accompanied by inflation and high unemployment cannot be excluded from the Nigerian headlines coupled with the persistent fall in the exchange value of Naira.

Fiscal imbalance is a threat to the performance of the financial market since the returns expected by the investors are not certain and the financial risk increases accordingly. This causes a loss of confidence in the financial system and the people of the country resort to arbitraging rather than performing economic activities that will create real economic value. The drift of interest by many Nigerians to cryptocurrency investment indicates the loss of confidence in the domestic financial system and the expectation of returns with lower economic value. The budget actions of the government considering its size and the role it plays in the allocation and redistribution of financial resources are of great relevance in establishing the performance of the financial market.

The aim of the Master thesis

The aim of this research is to determine whether state budget (proxied by budget gap deficit, inflation rate, interest rate, and real gross domestic product), influence the financial market performance (proxied by All share index) in Nigeria.

The objectives of the Master thesis

The primary objective of this study is to investigate the effect of state budget proxied by budget gap deficit, inflation rate, interest rate, and real gross domestic product on financial markets (using Nigeria as a case study). However, for the purpose of this study, the following specific objectives were explored:

1. To investigate the effect of state budget (inflation rate) on financial market in Nigeria.
2. To determine the effect of the state budget (interest rate) on the financial market in Nigeria
3. To evaluate the effect of real gross domestic products on the performance of the financial market.
4. To evaluate the causal relationship between state budget deficit and the performance of the financial market.

The methods deployed by the Master thesis

This study adopted an *ex-post facto* research design as it considered the past event relationship between the dependent and independent variables in examining the impact of state budget on financial markets. Due to the nature of the data required for this study, this thesis was achieved adequately by using secondary data sourced through quantitative time series data which was obtained from the national bureau of statistics (NBS) as well as other economic variables relevant to this thesis gathered from the Central bank of Nigeria (CBN) statistical bulletin and other reliable sources. The thesis approaches its objectives empirically by making inductive reasoning to apply sampling outcomes to the entire population of the study.

The description of the structure of the Master thesis

For this study, this thesis was categorized into four major Chapters. Chapter one discusses the introduction to the study, with a brief information about the background to the Study, the research aims and objectives, and the method of data analysis, and the theoretical analysis of state budget impact on financial markets. Chapter two provides an extensive methodological review of existing literatures; Chapter three discussed empirical review and findings of the study, while Chapter four concluded the study.

1. THEORETICAL ANALYSIS AND REVIEW OF PREVIOUS LITERATURE

This section examines the theories and concepts associated with the state budget and financial markets. It highlights the research taken by scholars on state budgets, and the financial markets developing the research gap. This section will also review past empirical studies related to the research objective of this thesis to reveal a divergence of views for different economies and from different empirical analysis methods. The theories that will be discussed are the Organization-based budget theory, crowding-out effect, and the Ricardian Equivalence Hypothesis (REH).

This section also focuses on showing how the previous study by the scholars relates to the current situation in the financial markets, the weaknesses of the previous study, and how to improve it to make it easier for it to suit future references. In conclusion, the summary of the empirical review showing financial markets variables; Budget deficit and domestic investment, budget deficit and economic growth, and budget deficit and financial markets will be highlighted. Different authors of the theories, methods employed, and the findings of the study will be given

1.1 The conceptual review of state budget

As the central link in the country's financial system, the budget reflects all the qualitative aspects of the financial category. Finance reflects the monetary relations associated with the creation and use of monetary funds of the state and individual economic entities because of the distribution and redistribution of gross domestic product, national income.

The state budget reflects the system of monetary relations related to the establishment and use of the centralized monetary fund of the state, monetary relations related to the establishment, distribution and use of the monetary fund included in the centralized disposal of the state in the process of distribution and redistribution of GDP. In this process, financial relations are formed between the state and enterprises, organizations, as well as between the state and the population. In this process, both the state fund is created, and this monetary fund is used to cover the general expenses of the state, many needs of society, defence, social, governance, etc. used to meet their needs.

The term "budget" is defined as the formation of financial security for the performance of functions belonging to public authorities (Zaichko, et. al., 2021). Such a characterization is more specific and expedient. Because both central and local governmental bodies serve the general needs of society. The financial resources required for the implementation of the functions of public authorities represent the formation and use of the state budget and all its links.

It is necessary to clarify the fact that the "budget" includes both financial relations and the form of creation and use of the centralized monetary fund of the state, as well as the notion that the state is the main financial plan. The essence of each economic category, as we know, is expressed by the functions it performs. The state budget, being an economic category, also performs certain functions, and by opening the content of these functions, it is possible to clarify the socio-economic content of the "budget" of the state budget. Many economists point out that the main criterion in revealing the essence of an economic category is the functions it performs. The budget category also includes all the functions related to finance, as it reflects a broad system of public relations. However, the specifics of the budget can also be distinguished from general financial relations.

A budget is an estimation of revenue and expenses over a specified future period and is usually compiled and re-evaluated periodically (Akhilesh Ganti, 2020). Budgets can be made for a person, a group of people, a business, a government, or just about anything else that makes and spends money. According to Ferejohn, and Krehbiel, (1987), a budget is a microeconomic concept that shows the trade-off made when one good is exchanged for another. In terms of the bottom line—or the result of this trade-off—a surplus budget means profits are anticipated, a balanced budget means revenue is expected to equal expenses, and a deficit budget means expenses will exceed revenues

Concerning the study, the measures taken by the government in the budget influences the financial markets (Johnson, et; al., 2011). For instance, an increase in indirect taxes by the government to meet its budget would lead to a decrease in the number of investors in the financial market (Dinnison, 1992). Also, when the government exempts its citizen from paying some taxes, they would increase their savings hence more investors in the financial markets (Dinnison, 1992). In the 1920s, very few people would have identified the government as the major player in the markets. Today, very few people would doubt that statement. Governments are the only entities that can legally create their respective

currencies. When they can get away with it, governments always want to inflate the currency. Why? Because it provides a short-term economic boost as companies charge more for their products; it also reduces the value of the government bonds issued in the inflated currency and owned by investors (Abd Rahman, 2012). Likewise, Interest rates are another popular weapon that the government use to boost the state budget, even though they are often used to counteract inflation. This is because they can spur the economy separately from inflation. Dropping interest rates via the Federal Reserve—as opposed to raising them—encourages companies and individuals to borrow more and buy more. Unfortunately, this leads to asset bubbles where, unlike the gradual erosion of inflation, huge amounts of capital are destroyed, which brings us neatly to the next way the government can influence the market.

By definition, a country faces a problem of budget deficit if the government expenditures exceed its revenues. In other words, the level of public savings is negative (Abd Rahman, 2012). This scenario may give harm to the economic growth of a country. In relation to the economic growth, it can be defined as an increase in the level of production over time. It can be measured by looking at the increasing pattern of real Gross Domestic Product (GDP) from time to time. Various factors may contribute to the economic growth of a country, namely labour force, technology, capital, knowledge, natural resources and etc (Barro, 1989).

In conclusion, every budget announcement by the government has an impact on the financial market positively or negatively.

Alternative Approach to Budgeting (Types of Budgets)

i. **Rolling Budget:** This can be defined as the continuous updating of a short-term budget by adding say a further month (or quarter) and deducting the earliest month (or quarter) so that the budget can reflect current conditions. It is a piece of advice that attempts to help an organization overcome the problems resulting from the unexpected change of method of future cost (Diamond, 2006)
ii. **Zero-based Budget (ZBB):** ZBB was first introduced by Peter Pyhor in 1969. It implies starting the budget from a Zero situation and justifying each segment of the budget rather than merely adding to historical budgets or actual. Conventionally, budgets are only quarried when they show an increase in expenditure over previous years. In Zero-Based Budget (ZBB) there is a positive attempt to eliminate inefficiency and slack from the current expenditure.

iii. **The planning-programming-budgeting system (PPBS):** is a concept that stresses the importance of establishing a strong linkage between planning and budgeting. It emanates from the policy of the government to formulate and implement a national budget that is an instrument of national development, reflective of national objectives, strategies, and plans. Under the PPBS concept, the budget is anchored on the degree by which the accomplishment of economic plans and the attainment of target contained in the Medium-Term Philippine Development Plan (MTPDP) and the Medium-Term Public Investment Program (MTPIP) are supported (American Society for Public Administration and Schick, 1966; Greenhouse, 1966).

1.1.1 Classes of Budget Deficit

There can be different types of deficits in a budget depending upon the types of receipts and expenditures we take into consideration. Accordingly, there are three concepts of deficit, namely (i) Revenue deficit; (ii) Fiscal deficit; and (iii) Primary deficit.

i. **Revenue Deficit:** Revenue deficit is excess of total revenue expenditure of the government over its total revenue receipts. It is related to only revenue expenditure and revenue receipts of the government. Alternatively, the shortfall of total revenue receipts compared to total revenue expenditure is defined as a revenue deficit. Revenue deficit signifies that government's own earning is insufficient to meet normal functioning of government departments and provision of services. Revenue deficit results in borrowing. Simply put, when the government spends more than what it collects by way of revenue, it incurs a revenue deficit. Mind, revenue deficit includes only such transactions which affect the current income and expenditure of the government. (Mascagni, 2014). It can be put in the formula as:

Revenue deficit = Total Revenue expenditure – Total Revenue receipts…… (1)

ii. **Fiscal Deficits:** According to the World Bank (2005), the fiscal deficit can be defined in terms of loan financing and shortage or drawing down on cash balances. One of the most important aspects of fiscal policy is the effective management of the public sector's fiscal deficit. Such fiscal deficit simply refers to the excess of the public sector's spending over its revenue. The concept of fiscal deficits has been at the forefront of macroeconomic adjustment – a purposeful and coherent set of measures used to respond to imbalances in the economy both in developing and developed

nations (Anyanwu, 1997). Specifically, a fiscal deficit may be considered as an act in which a state spends more money than it receives as revenue. In other words, budget deficit refers to a gap (negative) between public revenues and expenditures. Revenues normally come from taxation, natural resources, and public property while expenditures may cover development projects (or capital expenses) as well as recurrent expenses of running the government. The budget deficit must be bridged by increasing revenues, reducing expenditures, internal borrowing from the public, commercial banks and central banks, and external borrowing. Public borrowing has become a major feature of contemporary economies in both developed and developing countries. It can be put in the formula as:

Fiscal deficit = Total expenditure – Total receipts excluding borrowings = Borrowing…… …… (2)

iii. **Primary Deficit:** A primary deficit is defined as a fiscal deficit of the current year minus interest payments on previous borrowings. In other words, whereas fiscal deficit indicates borrowing requirement inclusive of interest payment, primary deficit indicates borrowing requirement exclusive of interest payment (Njiforti and Muhammad, 2010). We have seen that the borrowing requirement of the government includes not only accumulated debt, but also interest payment on a debt. If we deduct interest paid on debt' from borrowing, the balance is called a primary deficit. It shows how much government borrowing is going to meet expenses other than interest payments. Thus, zero primary deficits mean that government must resort to borrowing only to make interest payments. To know the amount of borrowing on account of current expenditure over revenue, we need to calculate the primary deficit. Thus, the primary deficit is equal to the fiscal deficit with fewer interest payments. The fiscal deficit reflects the borrowing requirements of the government for financing the expenditure inclusive of interest payments. As against it, the primary deficit shows the borrowing requirements of the government including interest payment for meeting expenditure. Thus, if the primary deficit is zero, then the fiscal deficit is equal to interest payment. Then it is not adding to the existing loan. Sinevičienė (2013). Thus, the primary deficit is a narrower concept and a part of the fiscal deficit because the latter also includes interest payments. It is generally used as a basic measure of fiscal

irresponsibility. The difference between fiscal deficit and primary deficit reflects the number of interest payments on public debt incurred in the past. Thus, a lower or zero primary deficit means that while its interest commitments on earlier loans have forced the government to borrow, it has realized the need to tighten its belt. (Furceri & Sousa, 2011). It can be put in the formula as:

Primary deficit = Fiscal deficit – Interest payments …… (3)

In summary, the revenue deficit shows the difference between the total revenue expenditure and the total receipts of a state budget. Fiscal deficit shows the difference between the total expenditure and total receipts excluding borrowings while primary deficit shows the difference between fiscal deficit and interest payment.

1.1.2 Deficit Financing

Gardner Patterson defines deficit financing as the net increase in the amount of money in circulation where such an increase results from a conscious governmental policy designed to encourage economic activities which would otherwise not have taken place (Oluwabukola and Falowo, 2013). Prudently used, deficit financing could be a very powerful tool of capital formation. He identifies traditional methods of financing the deficit as including net borrowing from the Central Bank, the commercial banking system, non-banking financial intermediaries, and depletion of cash balances.

Jhingan (2007) also defines deficit financing along similar lines; deficit financing refers to the financing of the deliberately created gap between public revenue and public expenditure or a budgetary deficit, the method of financing being one that results in the net addition to national outlay or aggregate expenditure.

Fischer and Easterly (1990) identify four ways of financing the government fiscal deficit. These ways are, Printing of money (ways and means); external borrowing; the use of foreign reserves; and Domestic borrowing. Broadly speaking, the two major means of financing the budget deficit in Nigeria include monetary financing and debt financing. The deficit is financed either through borrowings (domestically or foreign) or the use of a foreign reserve to settle the deficit. By borrowing means the government must agree on the terms of payments which usually are attached to strange regulations.

The sources of domestic borrowing can be categorized into four (Oluwabukola and Falowo, 2013): borrowing from the banking system; borrowing from the non-banking public;

borrowing from the Central Bank through the issuance of new currency; and drawing from the reserves of the Central bank.

Borrowing from the Banking System: This is carried out by issuing government bonds and securities directly to the banking institutions (both deposit money banks and non-money deposit banks). The banks use their excess reserves to purchase such securities. This method is also referred to as bond financing. The implication of this is a reduction in the lending power of banks through the depletion of external reserves.

Borrowing from the Non-banking public: Government stocks are sold to the public, who in turn transfer a part of their resources to the government. This leads to a reduction in the general level of saving, thereby affecting the level of private investments.

Issuance of New Currency (Ways and Means): Deficits can also be financed by the creation of new currency or printing of new money by the Central Bank. This tends to increase the money supply/growth in the economy and has an inflationary impact as more money will be pursuing few commodities. The quantity theory of money by classical economists says that inflation is driven by money growth. This brings a twist to Friedman's statement that "inflation is everywhere a monetary phenomenon".

Drawing from Central Bank Reserves: A deficit budget can as well be financed from the funds generated by the central bank through its banking functions. Funds such as those meant for the purchase of foreign exchange are lent to the government for its expenditure operations (Nwaogwugwu, 2005).

When the government borrows from foreign sources (either from international bodies like IMF, World Bank, or from a Country) to finance its budget deficit it means the nation must agree on the terms payments which usually have stringent conditionalities. Hence, this may perpetuate the deficit as more money would be spent by the government on servicing the debt. External borrowing usually causes an appreciation of the real exchange rate, deepening current account deficit, increases of foreign debt, and loss of foreign reserves. An extreme and very serious result of this foreign borrowing can be currency crises, for which this scenario is very common (Hakkio, 1996). For the past decade in Nigeria, the Nigerian Naira (NGN) has been deteriorating rapidly against the United States Dollars (USD) which has been increasing the value of Nigeria's external debt over the years. The situation could degenerate to induce more expenditure and further deficit to service the debt. The persistence

of this may result in high and variable inflation with crowding out of investment and may lead to stunted growth and macroeconomic imbalance (Osuji and Ozurumba, 2018).

Tenacious borrowings from external sources to finance budget deficit could result in high extension debt stock which could mean a huge debt burden on the nation. This may have a diminishing effect on the macroeconomic investment of a government mainly through the "debt overhang" effect, arising from the crowding-out effect and credit rationing effect. Debt overhang is the situation of a government or an organization that has existing debt so huge that it cannot easily borrow more money, even when that new borrowing is a good investment that would more than pay for itself. Credit rationing refers to a situation in which a highly indebted nation is likely to face credit restriction in the international capital market and this would lead to a reduction in investment. Increasing taxes could serve as an internal source of funds for the government to finance a budget deficit situation. This source of financing is only viable where the citizens of the country are viable enough to afford the increase in taxes (Raymond Alenoghena 2018).

In the US, there was a brief experience involving federal government budget surpluses during the period FY1998 to FY2001 (Alesina, 2000). However, given the 2001 recession, sluggish economic growth following 2001, and budgetary demands involving income tax cuts during the Bush Administration on the one hand and the 'war on terrorism' in the aftermath of the terrorist attacks on the US on September 11, 2001, on the other hand, the spectre of federal government budget deficits, potentially huge ones, raised its ugly head once again by FY2002 (Arestis, et. al., 2004). Arestis et. al. (2004) in their study observed, by calendar year 2003, federal budget deficits in the United States had re-emerged as a major economic concern.

The impact of state budget deficits in relation to interest rates has been studied extensively (Normandin, 1999; Akinboade, 2004). Most of these studies are couched within IS-LM or loanable funds models or variants thereof. Many of these studies find that budget deficits act to raise longer-term rates of interest while not significantly affecting shorter-term rates of interest. Since capital formation is presumably much more affected by longer-term than by shorter-term interest rates, the inference has often been made in these studies that government budget deficits may lead to 'crowding out' (Yoon, 2012).

The interest rate/budget deficit literature has focused typically upon the interest rate yields, most commonly nominal yields on 3-month Treasury bills, 10-year Treasury notes,

and 20-year and 30-year Treasury bonds. This literature has also focused upon the nominal interest rate yields on Moody's Aaa-rated and Baa-rated long-term corporate bonds. In recent years, however, the impact of budget deficits on such interest rate yields has received limited attention in the literature. Moreover, the focus on real interest rates has been even sparser in recent years despite their economic importance (Taylor, [40]; Cicchetti, [19]; Mishkin, [35]). For example, recently, Cicchetti ([19], p. 555) observed that '...the economic decisions of households to save and of firms to invest depend on the real interest rate ...'. Similarly, even more recently, Mishkin ([35], p. 609) observed the traditional view that '...a fall in real interest rates ... lowers the cost of borrowing, causing a rise in investment spending...and consumer durable expenditure

In developing countries where the option to increase tax rate might not serve as a viable financing arrangement to meet a budget deficit situation, the likely most feasible option might be to raise funds through the domestic financial markets. The choice to raise funds through the domestic financial markets could end up being more enduring as all foreign debts (and accumulated interest) would eventually be paid up from domestic sources.

Such a general scheme of budget revenues, of course, is not permanent, but varies depending on the specific economic and social conditions. It is known that the state acts as a general economic entity in society. In this case, the general interests of producers are considered, and therefore the budget effects the regulation of economic processes, considering the interests of the development of the entire economic system of the country. Development of non-production and service sectors, meeting the general needs of the population, economic development of various forms of ownership, etc. to maintain macroeconomic proportions in all economic entities of the country make it necessary to use the budget for the benefit of the country.

Budget expenditures are based on certain conditions, such as its revenues. However, it is more flexible to change the direction and structure of expenditures than revenues. When the economic and political situation changes, budget expenditures also change in accordance with the interests of military, social, economic, and political goals. Thus, the proportions of budget expenditures allocated for military and social purposes may change dramatically in some cases. During economic crises and military conflicts, budget expenditures change more to meet military needs. Thus, the socio-economic content of the budget is determined by the composition and structure of its revenues and expenditures. The control function of the

budget is also carried out indifferent directions depending on the current situation. However, it should be noted that the control function of the budget is carried out both during the formation of revenues and the financing of its expenditures. At the same time, the control function of the budget creates conditions for the proper formation and targeted use of monetary funds by influencing economic processes. However, the control function is carried out systematically both as general financial control and as a control function of financial institutions.

The control function of the budget is an integral part of the control function of finance. The economic and social content of the budget is also determined by its role in large-scale reproduction. The state uses the budget fund for the development of progressive economic sectors that serves the common interests of the country. To develop the most important areas, the state distributes and redistributes the gross domestic product through the budget in the interests of the country's long-term economic development. Sectors are met through budget funds. Through budget funds, the gross domestic product is distributed and redistributed among the economic regions of the country. In some economic regions, the budget is used as an economic tool for different purposes as the development of the economy, productive forces, and the development of infrastructure in the country, and so on.

The budget system, which is inherent in the economic and state structure of all states, has been formed. The budget system inherent in the economic system of the Nigeria and its state structure has been established. The relationship between the establishment of the budget system and all its types is called the budget structure. The sum of separate independent budgets and state funds combined in the budget system forms the state budget system. The budget system includes the sum of all types of budgets. The basis for the organization of the country's budget system is reflected in the Constitution and laws on the budget system. The organization of the budget system is based on certain principles, which are also based on the economic, political, and social foundations of the country. The budget system is based on the operation of the budgets included in this system based on common principles and their independence.

External experience. In developed countries (unitary states), for example, in the United Kingdom, France, etc., the budget system consists of the central budget of the state and the budgets of local governments, local municipalities. The budget system of federal

states consists of three rings, i.e., the central federal budget, the budgets of the subjects included in the federation and the budgets of local authorities.

1.1.3 Theoretical Review

Theoretically, the issue of state budget financing has been at the centre of debate between the three main schools of thought: Organization-based budget theory, crowding-out effect, and the Ricardian Equivalence Hypothesis (REH)

Organization-Based Budget Theory

One of the organizational purposes of the budget process is to enhance the capacity of the organization's management to make optimal resource allocation decisions. In pursuit of this end, the resource allocation process should function as a counterweight to the centrifugal forces generated by the highly differentiated nature of multiservice public organizations. Budget formats and processes should be examined for their relative utility in that regard, considering the existing capacity of the management staff.

In addition to the prescription that the resource allocation process should enhance the capacity of the management staff to make optimal resource allocation decisions, it is posited here that the ultimate criterion for determining optimality is the preservation and development of the organization's economic base. Government derives its resources from the economic base of its jurisdiction, and a basic function of professional public management is to maintain the organization's flow of resources. In this scenario, the resource allocation process of the government serves a developmental function for both the internal structure of the government and its relationship with its external environment.

The need to maintain the economic base of the jurisdiction functions as a centripetal force in government, in much the same way as the need to make a profit does in the private sector. This is not to say that the determination of the optimal course of action is not ultimately a function of societal values and political power. The approach outlined herein provides a framework for the development of theory to inform and to guide the actions of the participants, particularly the professional public administrators. Thus, the organization-based approach to budget theory also holds promise for the development of a normative theory of budgeting rooted in the profession of public management.

Crowding Out Effect Theory

The classical economists believe that keeping public undertakings such as borrowings as minimum as possible will be a great measure to avoiding crowding-out of private

investment effect. In their view, borrowing public authority accumulates resources for its use leaving the private sector with less. This phenomenon is popularly termed the crowding-out of private investment. They opined that, as public expenditure is less productive than private expenditure, the increased output because of the loan-financed public expenditure does not fully offset the negative impact of the crowding-out of investment on output, thus reducing GDP (Njiforti and Muhammad, 2010).

The crowding-out effect is an economic theory arguing that rising public sector spending drives down or even eliminates private sector spending investments. Crowding in, on the other hand, suggests government borrowing can increase demand by generating employment, thereby stimulating private spending. There are also debates on the crowding in and crowding out effects based on the different economic schools of thought. The Keynesian theory suggests that government expenditures increase aggregate demand through the multiplier effect, such as when the government expenditures inject money to encourage consumption and lead to higher demand in private consumption. Therefore, firms who want to make more profits should increase private investment to influence the crowding-in effect (Baldacci, Hillman, & Kojo, 2004; Cwik & Wieland, 2011). On the other hand, the Neo-classical theory disagrees and criticizes that outstanding government spending causes a higher interest rate and leads to a reduction in private investment due to the higher cost of borrowing (Aschauner, 1989; Bernheim, 1989; Wang, 2005).

The crowding in or crowding out effect can be presented through several channels. First, the crowding-out effect can be seen from its impact on public investment which is contracted because of the higher cost of funds given that the government's demand for funds has forced the market rate of interest to a level above the equilibrium market rate (Argimon, Gonzalez-Paramo, & Roland, 1997; Erden & Holcombe, 2006; Hatano, 2010; Furceri& Sousa, 2011). Alternatively, the evidence of crowding-in or crowding-out effects can be established through the linkages between budget deficit and interest rate (Burney, Yasmeen, & Niazi, 1989; Darrat, 2002; Cebalu, 2003).

Impact of crowding-out effect on public investment: As seen in the case of the multiplier effect, government spending will shift aggregate demand (AD) further than expected when an expansionary fiscal policy is implemented. However, monetarists believe that because of this expansionary fiscal policy, the government will need to borrow money by

selling government bonds. This leads to a rise in interest rates, i.e., from R1 to R2. The increased borrowing ‘crowds out’ private investing.

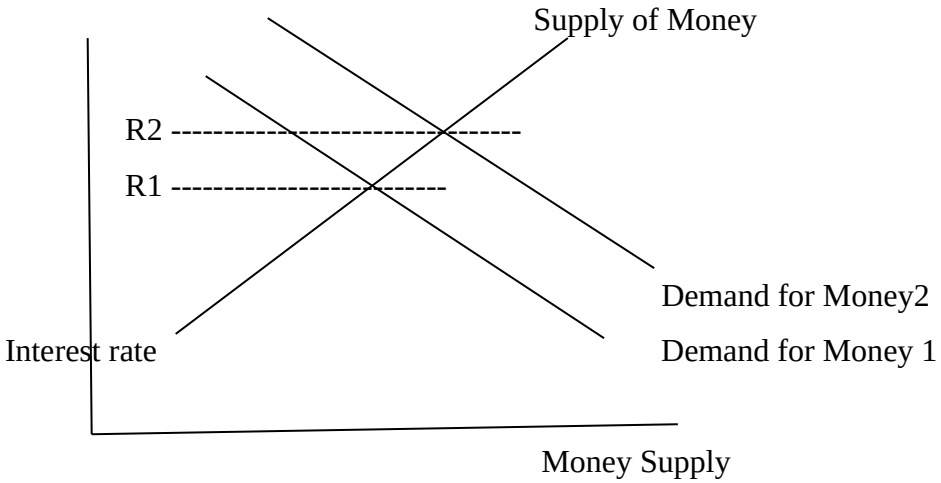

Figure 1. Crowding out effect.

Source: Slavikova, L. 2018.

Figure 1 illustrates the crowding-out effects of financing a budget deficit. When the government wishes to finance a budget deficit they have to borrow from the private financial sector. By doing this it pushes the demand for loanable funds outwards putting pressure on interest rates to rise. Given that investment is a component of aggregate demand and is negatively related to the interest rate (as the interest rate represents the opportunity cost of investing), a higher interest rate causes individual investment projects to be less profitable and therefore investment falls. Also given the fact that interest rates are higher it makes consumption lower due to difficulties trying to acquire finance from financial institutions. Therefore, despite the government stimulating the economy by running a larger budget deficit the effect on real output will be muted due to lower consumption and investment offsetting these expansionary effects

The Ricardian Equivalence Hypothesis (REH)

This is the third theoretical approach to the Fiscal Deficit Analysis. The REH contends that deficit financing just serves as a means of postponing the inevitable tax given the fact that taxes will still be collected in the future to repay the principal and interest rate on any bonds that have been issued (Muhammad, 2012). In essence, the hypothesis says that financing the deficit through debt or debt financing has no impact on consumption, output,

and employment because rational economic agents adjust their savings in expectation of future taxes that will be used to pay off the debt.

There have been some arguments in the literature as regards the justification of the proposition contained in the Ricardian Equivalence Hypothesis (REH).

First, the writings of Ricardo himself did not suggest his conviction in preference of his own REH (McCulloch 1888). The writings of Ricardo betrayed his preference for tax financing. He wrote about how to finance a war with an annual expenditure of $20 million and asked whether it makes a difference to finance the $20 million via current taxes or to issue government bonds with infinite maturity and finance the annual interest payments of $1 million in all future years by future taxes (at an assumed interest rate of 5%). His conclusion was that from the point of the economy, there is no real difference in either of the modes i.e., for $20 million in one payment (or) $1 million per annum forever, are precise of the same value.

Antonio De Viti De Marco elaborated on Ricardian equivalence starting in the 1890s (Feldstein 1985). Barro (1974, 1976, and 1991) took the question up independently in the 1970s, to give the proposition a firm theoretical foundation. The proposition remains controversial (Elmendorf and Mankiw 1998). Barro (1991) looks at the Ricardian equivalence hypothesis (REH) and argues that the shifts between taxes and deficits do not affect the real interest rate, capital flows (investment), or the current account balance. REH does not acknowledge the link between the two deficits. This is because the effect of tax cuts or increased government expenditure does not alter the mix of current consumption and investment as rational agents foresee that the present tax will become a tax burden in the future.

1.2 Conceptual Review of the Financial Markets

Financial markets refer broadly to any marketplace where the trading of securities occurs, including the stock market, bond market, forex market, and derivatives market, among others. Financial markets are vital to the smooth operation of capitalist economies. The financial markets make it easy for investors (both buyers and sellers) to trade their financial holdings. Financial markets create securities products that provide a return for those who have excess funds (Investors/lenders) and make these funds available to those who need additional money (borrowers). (Akinsulire, 2006).

Furthermore, a financial market could also be described as a market in which people trade financial securities and derivatives at low transaction costs. Some of the securities and derivatives include stocks and bonds, raw materials, and precious metals, which are known in the financial markets as commodities. Financial markets and intermediaries today are globally linked through a vast international telecommunications network so that the trading of securities and the transfer of payments go on continuously around the clock. The financial markets include the foreign exchange, fixed income, and equity markets, as well as the new and growing markets for "derivative" securities such as futures, options, and swaps.

Capital market functions are also performed by financial intermediaries such as banks and insurance companies, which provide customized products and services -- the kind that does not lend themselves to the standardization necessary to support a liquid market. (Samah and Ahmed 2014).

1.2.1 The Capital Market

This component of the financial market majors its activities and acts as a space where savings and investment at the macro level take place in a typical economy. The market makes use of long-term debt and equity instruments to apportion the financial resources within and outside an economy. Compared to the money market, the capital market deals in the long term and large financing and investing activities that are utilized for corporations, institutional investors, and the government to finance their projects and execute their budgets effectively.

The capital market is made up of different participants but can be categorized into three agents which are the issuer or borrowers, the investor or lenders, and the regulators. The issuer unit comprises those in need of funds for project execution and they include corporate bodies and the government at the different levels of administration. The investor, on the other hand, is corporate and institutional investors, high net worth individuals, and the government who finance the proposed projects of the issuer at a price usually termed as interest or profit in the case of Islamic financial instruments. The capital market regulators are established to ensure the efficiency and effectiveness of the market and in the Nigerian economic space, they include the Securities and Exchange Commission, the Federal Competition and Consumer Protection Committee (FCCPC), Central Bank of Nigeria (CBN), etc. that oversees the development of the capital market and protects its integrity.

1.2.2 The Money Market

The money market in contrast with the capital market involves short term financial instrument that includes bank deposits, treasury bill, bills of exchange, invoice discounting, commercial paper, and other money market financial assets. The short-term feature of the money market simply represents the time horizon nature of the instruments.

The participants are similar as in the case of the capital market as there are savers or short-term investors, borrowers, and the money market regulators. The money market establishes its relevance through the role of interest rate on several economic indicators such as exchange rate, inflation rate, and economic growth rate. The linkage between the money market and the capital market is further established by the inverse relationship that exists between interest rate and bond prices. The economic environment also establishes a link between the capital and money market given that similar factors are found in both markets

The financial market exists within an economic space both domestically and globally as the level of globalization tends to improve in recent times. Development and interaction of certain macroeconomic variables in the economic space would exert direct or indirect or both influences on the financial market variables and these macroeconomic variables include inflation rate, national budget, monetary policy rate, exchange rate, and financial regulations. According to Muhammad, A, (2012), the broadness and activeness of a financial market positively influence the volume of transactions and the achievement of financial and fiscal stability. As the financial space expands beyond the boundaries of a nation, the financial system of the developing countries gets more developed, and the government can improve the status of its state balance of payment in equilibrium and implement policies that will accelerate social stability and productive capacity

1.3 Empirical Evidence of the impact of the state budget on Financial Markets

This section of the thesis goes through past empirical works on the functional impact of fiscal or budget deficit on economic variables in the financial domain and related to the financial market while carrying out a comparative analysis of the result in at least, a country in America, Europe, Africa, and Asia.

As opined by Kapingura (2018), domestic investment specified as a simple model is equal to private and public savings and the fall in national savings resulting from a budget deficit is an important implication of fiscal imbalance. (Shojai, 1999). As noted by Paiko (2012), the empirical impact of deficit financing on investment is still inconclusive and the

diversity, in conclusion, has been mostly attributed to the empirical procedure adopted as well as the proxies employed. However, a significant number of empirical evidence concluded on a negative impact of budget deficit on domestic investment.

Abd Rahman (2012) employed the conventional Vector Error Correction Model (VECM) approach and Autoregressive Distributed Lag Model (ARDL) to examine the cointegration between a financial market with a deficit-financed economy and national investment or savings in Malaysia. This paper concluded that with a properly regulated stock market and efficient monetary authority policies, the financial market tends to cause and motivate growth in investment and economic growth.

A similar empirical assessment by Evans (1985) to determine the impact of the large deficit on interest rate determination based on the IS-LM model using simple regression analysis. He was convinced from the result of the analysis that the popular opinion of the positive impact of deficit financing and interest rate is not valid arguing that no evidence of the positive association between deficit and interest rates in the US economy.

In the same period, McMillin (1986) employed the multivariate Granger-causality tests to investigate the impact of budget deficit on the yield on a short-term investment. The paper analysed quarterly data over 27 years to conclude that the deficit measures employed-national income account measure, cyclically adjusted deficit, fund flow measure, and privately held federal debt do not Granger-cause the interest rate and would, in turn, have no significant impact on domestic investment.

A more recent empirical study on government budget financing on investment by Ezeabasili and Nwakoby (2013) in Nigeria over 1970-2006 using Error correction model (ECM) for empirical analysis while both Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) were employed to determine the presence and level of stationarity. Empirical evidence revealed that the relationship between domestic investment and government budget financing is positive and significant in the long run. Paiko (2012) in a similar attempt employed Ordinary Least Square (OLS) for the regression analysis of the empirical dependence of private sector investment on fiscal deficit in Nigeria. It was concluded from the analysis that an inverse relationship exists between deficit budget and private investment in the economy.

The further empirical effort taken in this aspect was by Shetta and Kamaly (2014) investigated how fiscal deficit affects domestic investment through private credit from the

Egyptian banking sector using the extensive Vector Autoregressive (VAR) model on quarterly data collected over forty years. The empirical investigation revealed that private investment is significantly crowded out by government borrowing that arises because of deficit financing in Egypt. On a similar note, Adedokun (2014) was convinced that there exists a significant crowding-out effect of investment from deficit financing having analysed the short-run and long-run impact of fiscal deficit on domestic investment in Nigeria using VAR empirical technique on data collected over 1975-2010.

The decisions that the government takes are led by a certain situation, such that in the period of inflation, the government implements contractionary policies that can help mop up the excess liquidity and cut down aggregate demand by increasing tax rate or expanding the tax base while expansionary actions are taking when the economy is slipping into recession and high unemployment. Such actions result in the government spending more than it gets from the household and business sector and satisfying the difference through public debt. Public debt may be domestic or foreign, both have different implications on the financial market where capital is raised either in the form of debt or equity.

The schools of thought on this topic have given a diverse opinion on how to budget deficit affects the financial market. Most of the studies argued that the financial market is more efficient when government securities are introduced since the returns from the government securities serve as risk bias assets that the holders or investors hold with high confidence. Other scholars claimed that the borrowing would reduce the capital available to private sectors and this may result in what is termed crowding-out-effect, whereby the more efficient business sector is discouraged from investing because of rising interest rates.

Shetta and Kamaly (2014) employed the VAR model to investigate how the banking sector- a segment of the financial market is affected by heavy reliance on debt financing- a result of a budget deficit. The study was modelled in line with Emran and Farazi (2009) that conducted cross-country-based research to evaluate the impact of fiscal imbalance on the financial market. As revealed by the study, the VAR was employed guided by the assumption that two major variables modelled are endogenous. The VAR model would also help establish how shock is responded to by the variables. The study concluded, guided by the empirical outcome that the banking sector becomes less willing to invest in private securities because it is relatively riskier than the government securities. It concluded that this act is known as lazy banking and can cause the financial market to shrink largely.

A similar study by Uddin and Tariq (2018) employed the bond market as a proxy for the financial market and investigated how the government deficit budget affects the development of the bond market in Pakistan. The VECM was utilized after a long-run relationship established from the Johansen cointegration test, the study found that there exists a short and long run significant relationship between budget deficit and bond market in Pakistan. The relationship specified was however positive, implying that as the government implements expansionary policies and satisfies the fiscal deficit with public debt, the bond market expands and gets more developed. The research study produced a speed of adjustment which was appropriate with a negative value and statistically significant.

Abakah and Adusah-Poku (2016) also empirically investigated the relationship between budget deficit and the stock market returns in Ghana using the All-Share index as a proxy for the financial market performance for the entire period under study between 2008 and 2015. VAR model, Impulse response function, and Granger Causality tests were the empirical techniques used and the empirical output produced revealed that a significant and positive relationship exists between the stock market performance measured by its returns and the real budget deficit. Another revelation deduced from the empirical output was that budget deficit Granger-cause stocks in a unidirectional manner.

More elaborate research was conducted by Grobys (2013) to investigate the impact that the federal budget deficit in the US economy exerts on the stock market return over 20 years between 1968 and 2011 in a two-sample analytical procedure. The study concludes from empirical evidence that the positive impact of the federal fiscal deficit on stock market returns is significant for both samples analysed. Granger causality and Impulse response functions were the empirical techniques adopted and the evidence provided from the analytical procedure were that a stochastic interrelation exists between the variables employed as a proxy for the research analysis.

Ewing (1988) examined the role of the federal budget deficit as a factor in the financial market proxied by the stock market. The stock market hypothesis was largely incorporated in the literature as the simple regression analytical procedure employed by the research study revealed that the federal budget deficit in terms of size significantly affects the movement in stock prices. A thesis produced in Germany by Gerleman (2012) was interested in discerning how changes in the government fiscal obligations resulting from deficit financing affect the domestic financial market performance. This study took a panel approach

examining macroeconomic variables from Germany, Portugal, and Sweden over 12 years between 2000 to 2011. The analytical method adopted was the conventional Ordinary Least Square (OLS) and the Granger-causality test and the empirical outcome based on the efficient market hypothesis was that government fiscal imbalance significantly and positively affects the financial market performance.

Osi (2015) empirically investigated the impact of deficit financing by the government on the development of the Nigerian financial market specifying the Twin-Deficit model analysed using the ARDL to establish the long-run equilibrium relationship on the data collected over 1981 to 2013. The study included the combination of credit for the private sector and the stock market capitalization as a proxy for the financial sector development and the multiple regression analysis revealed that a negative impact is exerted by a budget deficit on financial market development in Nigeria despite the existence of a long-run significant relationship.

1.4.1 Synthesis and analysis of empirical studies

The evaluation of previous empirical studies relevant to the thesis's research objective indicates a wide range of viewpoints for different economies and empirical analysis approaches. The temporal bias and economic basic bias are the primary causes of divergence. This study therefore shows that in the spending shocks of government, the general effects are not significant as they expect. However, these shocks create a positive and persistent effect on productivity, a negative effect on private investment mostly leading to a quick fall in stock prices. On the other hand, in a revenue shock situation has an opposite effect because the impact on financial market and investment is positive. The stock market variable of the All-share index is the most used proxy for financial market performance or development.

The economy, interest rates, and stock markets are all affected by the budget. The fiscal deficit is influenced by how the finance minister spends and invests money. The size of the deficit and how it is funded have an impact on the money supply and interest rate in the economy. High interest rates increase the industry's cost of capital, resulting in reduced earnings and, as a result, lower stock prices.

2. METHODOLOGY

2.1 Aim, model, and hypothesis of the research

Aim

There has been long debate surrounding the relationship between state budget and financial market performance of firms. This research aims to develop from existing literature regarding the effect of state budget on the financial market, using Nigeria as a case study.

The following objectives will be used to assist the researcher in addressing the research aim as stated above:

i. To evaluate the influence of inflation rate on the financial market performance in Nigeria.
ii. To assess the impact of interest rate on the financial market performance in Nigeria.
iii. To examine the effect of exchange rate on financial market performance in Nigeria.
iv. To examine the effect of budget gap on financial market performance in Nigeria

Model

A research model shows the relationship between the dependent and the independent variables used in the study. The dependent and core independent variables and other moderating and mediating variables that the model intends to specify. Based on this study, five variables used by other researchers were also applied here which include budget gap, inflation rate, all share index, interest rate and real GDP (Steinbach, et., al., 2013).

The dependent variable is market performance proxied by all share price index, while the independent variable which is state budget is proxied by inflation rate, interest rate, budget gap deficit, and real GDP which are used to investigate the impact of the state budget on the financial market.

$$ASI = \alpha + \beta 1BGAP + \beta 2INFR + \beta 3INT + \beta 4RGDP + \mu t \quad \text{---------- (4)}$$

Where:

α = Coefficient

ASI: All-Share Index

BGAP: Budget Gap

INFR: Inflation rate

INT: Interest rate (real)

RGDP: Real Gross Domestic Product

μt = Error term

At this junction, the investigated variables are identified as dependent and independent variables and they are defined concerning the purpose of the study. The variables are divided into three based on their functions in the model specified. There are identified as follows.

Dependent Variable: All Share Index (ASI)

Independent Variable: Budget gap (BGAP)

Moderating Variables: Inflation rate (INFR), Interest rate (INT), and Real Gross Domestic Product (RGDP).

The variables are thus summarily defined below:

All Share Index: This index tracks the performance or market movement of equities of companies that are listed on the stock exchange. It indicates well the economy performs in reaction to the financial market sentiment. The Nigerian Stock Exchange All Share Index (ASI) data was sourced from the official website Nigerian stock exchange

Budget Gap: The budget gap is determined as the difference between the national government's revenue and expenditure. The difference may be surplus (when revenue exceeds expenses) or deficit (expenses exceed revenue). This indicator is used as a policy instrument and information about the budget surplus/deficit is obtained from Debt Management Office (DMO, 2020).

Inflation rate: This is the weighted average measure of price change for the aggregate goods and services within the economy. Usually calculated in terms of how the prices of commodities increase over a period. The consumer price index inflation data are available and obtained from the CBN Statistical Bulletin 2020.

Interest rate: This may also be called the monetary policy rate being the general cost of borrowings and income from deposit savings as stipulated by the monetary policy committee of the Central Bank of Nigeria and established as an important monetary policy tool (Cash reserve ratio). Data on this variable are collected from the CBN Statistical Bulletin 2020.

Real Gross Domestic Product: This is the actual value of goods and services produced within an economy either by foreigners or nationals of the country. It is calculated by adjusting the nominal GDP by inflation or GDP Deflator to estimate the real size of the economy not inflated by rising prices. Annually & quarterly data on the real GDP are retrieved from the National Bureau of Statistics (NBS).

Hypotheses of the research

Based on the research aims and objectives, the following hypotheses were formulated for this study:

Hypotheses

H_1: Is there any significant relationship between inflation rate and financial market performance.

H_2: Is there any significant relationship between interest rate and financial market performance.

H_3: Is there a significant relationship between exchange rate and financial market performance.

H_4: Is there any significant relationship between budget gap deficit and financial market performance.

2.2 Organization and instrument of the research

Organisation of the study

This research is categorised into four major sections.

Table 1

Organisation of the research

Chapter	Description
Chapter 1: Introduction and Theoretical Background to the Study	This chapter introduces the topics and themes that will be examined throughout the research, providing a brief history and definitions. The reasons and rationale for undertaking this study as well as theories explaining the concepts of state budget and financial market performance.
Chapter 2: Research Methodology	In the section, the aim of the study is discussed, the model of the study constructed, and the hypotheses is stated. This section further analyses the organization of the study and the instrument used in carrying out the research. Furthermore, the sample size and characteristics are discussed in this chapter, likewise the limitation experience by the researcher.
Chapter 3: Data Analysis and Interpretation	This chapter provides in depth details of how the researcher data were collected, followed by the techniques used in analysing the data that has been collected. This chapter also discusses the pre-estimation data, the estimation and post estimation data analysis conducted on the study.
Chapter 4: Conclusion and recommendation.	This chapter summarizes the main findings of this research and recommendations for future studies.

Source: Researchers' work.

Instrument of the research

Data for this study will be collected from secondary sources which include the National Bureau of Statistics, Nigeria Stock Exchange (NSE), Central Bank Statistics Bulletins, and the Federal government budget over a period of 20 years spanning from 2001 to 2020. Data were collected from annual market performance and the state budget

Table 2

Research Instrument

Instrument	**Type**	**Data Type**	**Source**
All-share price index	Quantitative	Pre-estimation	Nigeria Stock Exchange
Budget Gap	Quantitative	Estimation	Federal Government Budget
Interest Rate	Quantitative	Pre-estimation	Central Bank Statistical Bulletin
Inflation Rate	Quantitative	Pre-estimation	Nigeria Bureau of Statistics
Real GDP	Quantitative	Pre-estimation	Nigeria Bureau of Statistics

Source: Researchers' work.

2.3. Sample characteristics

For this research the sample approach used is the convenience sampling technique due to the nature of the study being quantitative research. Qualitative and quantitative researchers have different sampling techniques. While in quantitative, the primary goal for the sampling procedure is to get a representative sample, out of the bigger population and produce accurate generalization about the population, it is more concern about using specific techniques that will yield highly representative samples and they tend to use a type of sampling frame based on theory of probability. This is known as probability or random sampling. According to Neuman (2009) researchers has two motivations for using probability or random sampling: (1) time and cost effectiveness, and (2) accuracy of the findings. Neuman (2009) suggested that the results of a well-designed, carefully executed probability sampling will produce results that are equally if not more accurate than trying to reach every single person in the whole population. Qualitative researchers on the other hand focus less on a sample's

representativeness or on detailed techniques for drawing a probability sample (Neuman, 2009). As such, many authors enlightening qualitative approach as research methodology never actually discuss sampling procedures, let alone detailing the exact procedure in choosing research participants or informants.

Limitations of the research not subchapter

According to Price and Murnan (2004), the limitations of the study are those characteristics of design or methodology that impacted or influenced the application or interpretation of the results of your study. They are the constraints on generalizability and utility of findings that are the result of the ways in which you chose to design the study and/or the method used to establish internal and external validity. A major limitation of this research is lack of reliable data. The unavailability of data on the budget gap caused the researcher to limit the research length to 20 years which span between 2001 and 2020. The data collected for the purpose of this study also may not correctly answer the specific research questions or contain specific information that the researcher needed, however since the researcher did not collect the data directly, the researcher has no control over what is contained in the data set, but the data will be well presented and analysed for the purpose of the study.

Validity of Data

To ensure that the data extracted were valid, the figures extracted were subjected to review to ensure the correctness, appropriateness, and exhaustiveness in accordance with the variables tested in this study. The review was done by a data analyst and cross-checked for accuracy by the researcher.

Data Processing

This study established the relationship between state budget and financial market performance in Nigeria. It examined a cause-and-effect relationship between state budget (independent variable) proxied by inflation rate, interest rate, budget gap deficit, and real GDP, and market performance (dependent variable) proxied by all share index (ASI). To accomplish this, both descriptive and inferential statistics were employed. The data analysis was carried out in two stages, i.e., descriptive, and inferential statistics to analyze the data collected from annual reports and accounts of the sampled listed firms. The simple regression analysis was used to analyze and test the four (4) hypotheses formulated in this study, while panel regression analysis was used for the test of the main objective of the study. The

regression models were estimated using Unobserved Effects Model (UEM), while the result of the Hausman test would indicate between Pooled, fixed effect model and random effect models, implying that any of the models could be used depending on the likely result from the Hausman test to be conducted and the results of the Hausman confirmation tests using either Breusch-Pagan Lagrangian Multiplier (LM) test for random effect or Testparm Test for fixed effect. In addition, diagnostic tests such as heteroskedasticity, serial autocorrelation, and cross-sectional dependence tests were conducted for objectivity of the results and to unveil any econometric problem in the models.

Reliability

The set of financial statements which would constitute the source of data for this study are prepared by the banks in line with the applicable financial reporting framework, audited by the respective Banks's statutory auditors in compliance with Companies and Allied Matters Act (CAMA) and also certified by the appropriate regulatory agencies such as Securities and Exchange Commission (SEC), Banks and Other Financial Institution Act (BOFIA), Nigerian stock Exchange (NSE), Central Bank of Nigeria (CBN), National Insurance Commission (NAICOM), Financial Reporting Council of Nigeria (FRCN) are considered to be suitable and appropriate for public consumption. The data from these sources are therefore considered reliable for the purpose of this study. Secondary data from the published audited annual reports and accounts of the banks would be sourced from the government approved regulatory agencies and parastatals as Corporate Affairs Commission (CAC), Nigerian Stock Exchange, National Bureau of Statistics and Central bank of Nigeria Statistical Bulletin. Data sourced from these secondary sources are adjudged suitable and appropriate for this study due to the following reasons: They are the relevant, approved, and recognized agencies of government for the purpose of corporate usage, as such; they are deemed reliable and credible data for the purpose of this study.

3. DATA ANALYSIS AND INTERPRETATION

This chapter explained in detail the results of the descriptive and inferential analyses as well as other relevant tests conducted in examining the effect of state budget on financial market performance in Nigeria. Also, the simple regression analysis was used to test the hypotheses and final regression results for each of the models were presented, interpreted, and discussed.

3.1 Statistics Summary

A statistical summary shows the fundamental and numerical characteristics of the variables studied. It reveals the average values, standard deviation, skewness, kurtosis and Jacque-bera statistics of all the variables analysed.

Table 3

Descriptive statistics

	ASI	**BDG**	**INF**	**INT**	**RGDP**
Mean	327.48	-6601.50	12.07	14.10	1946.90
Std. Dev.	146.53	13366.24	3.66	13.39	764.63
Skewness	-0.42	0.52	0.06	0.86	-0.33
Kurtosis	1.94	2.18	2.26	2.40	2.20
Jarque-Bera	1.51	1.44	0.47	2.77	0.91
Probability	0.47	0.49	0.79	0.25	0.64
Observations	20.00	20.00	20.00	20.00	20.00

Source: Researchers' work (2021).

The standard deviation a measure of how dispersed the data is in relation to the mean. Low standard deviation means data are clustered around the mean, and high standard deviation indicates data are more spread out. The standard deviation for All share index

(ASI), Inflation rate (INF), interest rate (INT) and real gross domestic product (rGDP) of Nigeria as shown in table 4 turns out to be lower than the mean value except for the standard deviation of budget deficit which happens to be higher than the mean value at $13366.24 as compared to the mean of -$6601.50. This might be because of outliers in the research data.

The skewness of the variables as shown in table 3 assesses the extent to which the variables' distribution is symmetrical. Skewness measures the asymmetry of the distribution of the series around the mean. The threshold for skewness is 0. Hence, the closer the skewness to zero, the more likely the variables will be normally distributed. A skewness of -0.42 indicates that the sample data for all share index is approximately symmetric, while the other variables are likely to be normally distributed because they are positively skewed and are close to the threshold of 0.

The kurtosis describes the shape of a probability distribution. The threshold for kurtosis of any univariate normal distribution is 3. Distributions with kurtosis less than 3 are said to be platykurtic, while distributions with kurtosis greater than 3 are said to be leptokurtic. Based on the report in table 4, the kurtosis of the variables is all platykurtic as the result of the data indicated that All share index (ASI), budget deficit (BDG), Inflation rate (INF), interest rate (INT) and real gross domestic product (rGDP) of Nigeria are not normally distributed.

Finally, the Jacque–Bera test is a goodness-of-fit test of whether sample data have the skewness and kurtosis matching a normal distribution. The threshold for Jacque Bera statistics is 0, hence if the result is far from zero, it signals the data do not have a normal distribution. Based on the result of the data in table 4, the p-value of the Jacque-bera test of (ASI), budget deficit (BDG), Inflation rate (INF), interest rate (INT) and real gross domestic product (rGDP) of Nigeria are 0.469537, 0.486933, 0.791329, 0.249740 and 0.635319 respectively. From the result, on ASI, BDG, and INT are below the chosen significance level of 0.5 hence they are likely to be normally distributed. While the actual significance level of INF and RGDP indicates that they are not normally distributed.

3.2 Effect of inflation rate on financial market performance in Nigeria

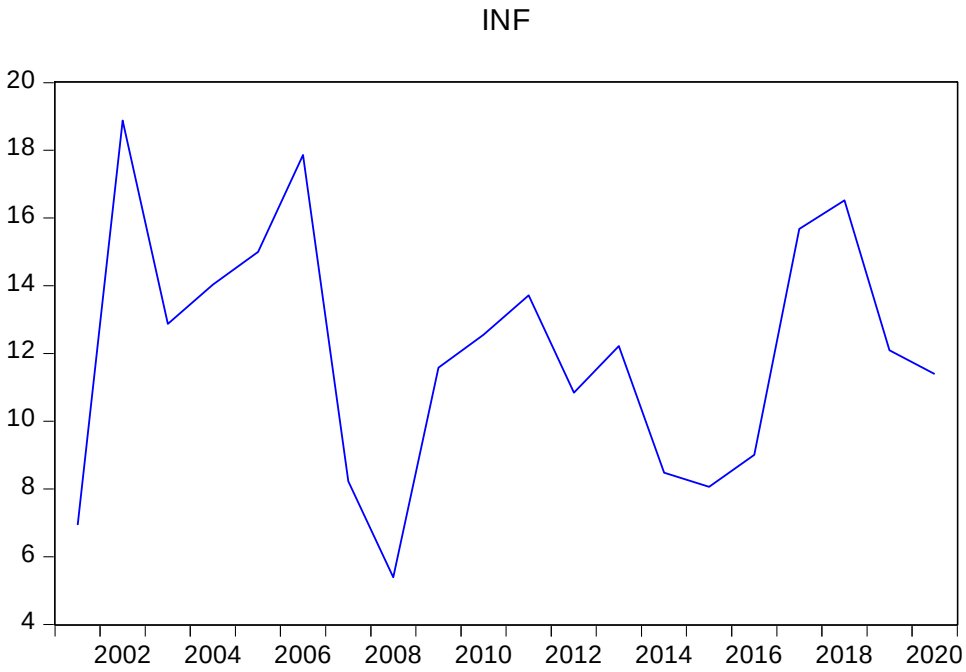

Figure 2. Trend of Inflation rate in Nigeria between 2001 and 2020

Source: Researcher's Data

According to the graph above, the interest rate was rising from 2001 up until 2003, and further became stable in 2004 at 14% but slightly rose to 17% in 2005. However, there was a deep fall in inflation rate between 2007 and 2008. This can be linked to the great financial depression which caused a fall in market performance of global stock. After 2008, the inflation continues to rise again, at a low rate and stable rate up until 2020. This is shown in Figure 3.1. The findings here is closer to the fisher hypothesis (Fisher, 1930) states that there must be a positive association between inflation and financial markets for it to be relevant. Fama (1981) researched inflation and the financial market prices and concluded that there is a negative association between them. Inflation has a diverse effect on the economy of Nigeria. Uwubanmwen and Eghosa (2015) researched to investigate how inflation affected the Nigerian financial market prices. An insignificant was revealed concluding that inflation cannot be used in determining the financial market prices.

Test of hypothesis one

H_0: There is no significant relationship between inflation rate and financial market performance.

Table 4

Regression analysis of hypothesis one

	MODEL ONE			
	Random-effects GLS regression with Driscoll-Kraay standard errors			
Variable	Coeff	Std.Err	t-test	Prob
Constant	259.73	114.02	2.28	0.05
INF	-1.11	0.38	-2.9	0.02
R^2	0.033			
Hausman Test	$chi^2_{(1)}$ = 1.43 (0.23)			
Breusch and Pagan LM test	$chi^2_{(1)}$ = 228.22 (0.00)			
Heteroskedasticity Test	$chi^2_{(1)}$ = 2.51 (0.11)			
Serial Auto-Correlation Test	$F_{(1, 9)}$ = 81.98 (0.00)			
Cross Sectional Dependence	7.503 (0.00)			

Source: Author's Work, 2021.

$ASI_{it} = \alpha_0 + \alpha_1 INF_{it} + \varepsilon_{it}$.....*Model 1*…… *(5)*

$ASI_{it} = 259.73 - 1.11 INF_{it} + \varepsilon_{it}$.....*Model 1*…… *(6)*

Regression Estimate Interpretation

The result of the random effect generalized least square (RE GLS) showed that INF negatively and significantly affects all share price (ASI) considering the sign and probability of the t-test and the sign of the coefficient (α = -1.11, t-test = -2.90, ρ = 0.02). The value of the regression coefficient revealed that a percentage increase in inflation rate (INF) would result to ₦1.11billion decrease in ASI. The value of the coefficient of determination of 0.033 implies that only 3.3% variations in ASI could be explained by the changes in INF, while the remaining 96.7% variations is caused by other factors beyond the scope of this model.

Decision

Based on the result of the probability of T-stat of 0.00 which is less than the 1% chosen significant level, this study thus rejects the null hypothesis which states that state budget measured as inflation rate (INF) has no significant effect on market performance measured as all share index (ASI) of the Nigerian Stock Exchange. Therefore, this study accepted the alternate hypothesis stating that inflation rate significantly affects financial

market performance in Nigeria. From these findings, it can thus be concluded that state budget deficit has a positive significant effect on market performance in Nigeria.

3.3 Effect of interest rate on financial market performance in Nigeria

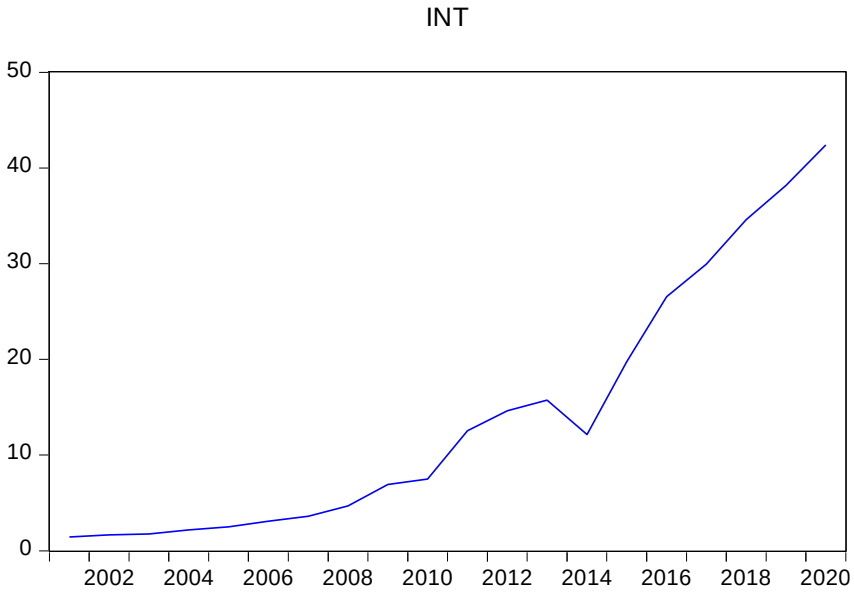

Figure 3. Trend of interest rate in Nigeria 2001 – 2020

Source: Author's Work, 2021.

According to the trend analysis, the interest rate was stable within the period of 2000 to 2003 but rapidly started rising from 2004 up until 2013 when the interest rate dropped to 12%. However, subsequently, the interest rate continually rose again in 2015 following the sharp decline.

Test of hypothesis Two

Table 5

Regression Analysis of Hypothesis Two

	MODEL TWO			
	Random-effects GLS regression with Driscoll-Kraay standard errors			
Variable	Coeff	Std.	t-	Prob
Constant	149.5	117.	1.2	0.233
INT	4.41	1.79	2.4	0.03
R^2	0.03			
Hausman Test	$chi^2_{(1)}$ = 0.01 (0.93)			
Breusch and Pagan LM test	$chi^2_{(1)}$ = 258.76 (0.00)			
Pesaran CD Test of Cross-sectional	8.141 (0.00)			
Heteroskedasticity Test	$chi^2_{(1)}$ = 3.05 (0.08)			
Serial Auto-Correlation Test	$F_{(1, 9)}$ = 120.29 (0.00)			

Source: Author's Work, 2021.

ASIit = α0+α1INRFit + εit.....Model 2 …… (7)

MVit = 259.73 + 4.41CARit + εit.....Model 2 …….. (8)

Regression Estimate Interpretation

The result of the random effect generalized least square (RE GLS) revealed that capital adequacy ratio (CAR) has significant positive effect on market value (MV) considering the sign and probability of the t-test and the sign of the coefficient (α = 4.41, t-test = 2.46, ρ = 0.03). the value of the regression coefficient showed that a percentage increase in the capital adequacy ratio (CAR) would result to N4.41billion increase in market value (MV). The value of the coefficient of determination of 0.03 implies that only 3% variations in MV could be explained by the changes in CAR, while the remaining 97% variations is caused by other factors beyond the scope of this model.

Decision: Based on the result of the probability of T-stat of 0.00 which is less than the 1% chosen significant level, this study thus rejects the null hypothesis which states that capital risk measured as capital adequacy ratio (CAR) has no significant effect on shareholders' wealth measured as market value (MV) of banks listed on the Nigerian Stock Exchange. Therefore, this study accepted the alternate hypothesis stating that capital risk significantly affects shareholders' wealth of listed banks in Nigeria.

3.4 Effect of real GDP on financial market performance

Table 6

Regression estimates of hypothesis 3

	MODEL THREE			
	Linear regression, correlated panels corrected standard errors (PCSEs)			
Variable	Coeff	Std.Er	t-test	Prob
Constant	591.4	83.16	7.11	0.00
rGDP	-4.88	1.14	-4.30	0.00
R^2	0.23			
Hausman Test	$chi^2_{(1)}$ = 8.67 (0.03)			
Testparm Test	$F_{(10, 89)}$ = 4.10 (0.00)			
Pesaran CD Test of Cross-sectional	6.54 (0.00)			
Heteroskedasticity Test	$chi^2_{(10)}$ = 682.88 (0.00)			
Serial Auto-Correlation Test	$F_{(1, 9)}$ = 142.76 (0.00)			

Source: Author's Work, 2021.

The result of the Hausman test (ρ = 0.03) supported Fixed Effect and the confirmation test conducted using Testparm test (ρ = 0.00) also supported Hausman result for the appropriateness of Fixed Effect. From the diagnostic tests carried out, the heteroskedasticity test (0.00) showed that the residuals of the model are trending (not constant over time) which connotes heteroskedasticity in the model; the result of Pesaran CD test (ρ = 0.00) that the model has cross-sectional dependence problem as well as serial autocorrelation issue when tested by Wooldridge test (ρ = 0.00); due to the existence of heteroskedasticity, serial autocorrelation and cross-sectional dependence problem in the model; the study estimated the regression equation between real GDP and market performance proxied by (ASI) usingLinear regression, correlated panels corrected standard errors (PCSEs)

$ASI_{it} = \alpha_0+\alpha_1 rDGP_{it} + \varepsilon_{it}$.....Model 3 ……. (9)

$ASI_{it} = 591.4 – 4.88OrGDP_{it} + \varepsilon_{it}$.....Model 3…… (10)

Regression Estimate Interpretation

The result of the regression equation showed that rGDP negatively and significantly affects all share index (ASI) considering the sign and probability of the t-test and the sign of the coefficient (α = -4.88, t-test = -4.3, ρ = 0.00). The value of the regression coefficient revealed that a percentage increase in the ratio of real GDP would result to ₦4.88billion decrease in ASI. The value of the coefficient of determination of 0.033 implies that only 23% variations in ASI could be explained by the changes in rGDP, while the remaining 77% variations is caused by other factors beyond the scope of this model.

Decision: Based on the result of the probability of T-stat of 0.00 which is less than the 1% chosen significant level, this study thus rejects the null hypothesis which states that state budget measured as real gross domestic product (rGDP) has no significant effect on market performance measured as all share index (ASI) of Nigeria. Therefore, this study accepted the alternate hypothesis stating that that real gross domestic product significantly affects market performance in Nigeria.

3.5 Effect of budget gap on financial market performance

Table 7

Regression estimates of hypothesis 4

	MODEL FOUR			
	Linear regression, correlated panels corrected standard errors (PCSEs)			
Variable	Coeff	Std.Err	t-test	Prob
Constant	42.17	65.95	0.64	0.52
BDG	4.13	1.23	3.36	0.00
R^2	0.08			
Hausman Test	$chi^2_{(1)}$ = 3.31 (0.07)			
Breusch and Pagan LM test	$chi^2_{(1)}$ = 220.63 (0.00)			
Pesaran CD Test of Cross-sectional	8.4 (0.00)			
Heteroskedasticity Test	$chi^2_{(1)}$ = 2.42 (0.12)			
Serial Auto-Correlation Test	$F_{(1, 9)}$ = 101.27 (0.00)			

Source: Author's Work, 2020.

Diagnostic Tests

The result of the Hausman test (ρ = 0.07) supported Random Effect and the confirmation test conducted using LM test (ρ = 0.00) also supported Hausman result for the appropriateness of Random Effect. From the diagnostic tests carried out, this study discovered that the model has cross-sectional dependence problem going by the result of Pesaran CD test (ρ = 0.00) as well as serial autocorrelation issue when tested by Wooldridge test (ρ = 0.00); while the heteroskedasticity test (ρ = 0.12) showed that the residuals of the model are invariant which connoted homoscedastic model; due to the existence of these two econometric problem in the model, the study estimated the regression equation between budget gap deficit (BDG) and all share index (ASI) usingLinear regression, correlated panels corrected standard errors (PCSEs)

$ASI_{it} = \alpha_0+\alpha_1 BDG_{it} + \varepsilon_{it}$.....Model 4 …… (11)

$ASI_{it} = 42.17 + 4.13 BDG_{it} + \varepsilon_{it}$.....Model 4 ……. (12)

The result of the linear regression estimates revealed that budget gap deficit (BDG) has significant positive effect on market performance measured by all share index (ASI) considering the sign and probability of the t-test and the sign of the coefficient (α = 4.13, t-test = 3.36, ρ = 0.00). The value of the regression coefficient showed that a percentage increase in the budget gap deficit (BDG) would result to ₦4.13billion increase in all share index (ASI). The value of the coefficient of determination of 0.08 implies that only 8% variations in ASI could be explained by the changes in BDG, while the remaining 92% variations is caused by other factors beyond the scope of this model.

Decision

Based on the result of the probability of T-stat of 0.00 which is less than the 1% chosen significant level, this study thus rejects the null hypothesis which states that state budget measured as budget gap deficit (BGD) has no significant effect on market performance measured as all share index (ASI) of Nigeria. Therefore, this study accepted the alternate hypothesis stating that budget gap deficit affects market performance of Nigeria.

3.5 Applicability of results

The implications of the findings of this study are:

Government, Policy makers, and Regulators: the ideas of mandating financial institutions to grant stipulated interest rate on deposits as loan to customers is great as it tends towards the development of the indigenous industries and economic growth as a whole; but the policy makers should also consider the impact on the financial market.

Researchers and Analyst: The financial advisors should consider inflation rate as crucial factor to investigate when rendering capital market advisory services to clients who are interest in investing their fund in the Nigerian financial market.

CONCLUSIONS AND RECOMMENDATION

Conclusions

This study investigated the effect of state budget on financial market using Nigeria as a case study. The findings of this study suggests that the state budget have a significant influence on the financial market. Specifically, the state budget in Nigeria influences the performance of the financial market proxied by the All-share price index as compared with the interest rate, inflation rate, real GDP, and budget gap deficit in the country over the last 20 years (2001 – 2020).

Table 4 reveals that there is a strong and positive relationship between all share price index and Inflation rate in Nigeria. Due to the correlation figure which is below5%, it is considered that there is a relationship between the two variables. Firth (1979) posited that holding stocks might be an effective hedge against inflation and hence the "Fisher effect" would explain this negative correlation. Marshall (1992) stated that if inflation is caused by money shock, it would lower the rate of interest and investors would shift their cash holdings to stocks and bonds to maximize potential capital gains. The increase in demand would in turn raise stock prices. Increases in expected inflation may also signal a potential increase in real activity, production, and hence higher stock returns (Fama and Gibbons, 1982). In this test, we reject the null hypothesis which states that there is no significant relationship between state budget and inflation rate in Nigeria.

Table 5 demonstrates that there is a positive but low correlation coefficient between all share price index and Interest rates. This implies that the fixed deposit interest rate in the country has a minor effect on state budget share prices. Short- and long-term interest rates have significant respectively positive but low impact on the Nigeria financial market based on the results of the current study. This is consistent with the findings of Bulmash and Trivoli (1991) in the case of the United States, and by Mukherjee and Naka (1995) for Japan. Maysami and Koh (2000) similarly observed a positive relationship between the Singapore stock market and short-term interest rates while the long-term rate was negative. The reason is probably that long-term interest rate serves as a better proxy for the nominal risk-free component used in the discount rate in the stock valuation models and may also serve as a surrogate for expected inflation in the discount rate. In this test, we reject the null hypothesis that state budget has no significant relationship on interest rate of financial market in Nigeria.

In line with Table 6, there is a strong and positive association between all share price index and real GDP which means when the real GDP rise, all share price index also rises proportionately and vice versa. The answers the research objective three which seeks to examine the effect of real GDP on state budget proxied by all share price in Nigeria. A possible explanation for the positive relationship might be the government's active role in preventing prices escalation as the economy continued to improve after the 2008 crisis.

Furthermore, table 7 reveals that there is a positive and strong association between all share price index and budget gap deficit. The positive correlation between budget gap deficit and stock returns is consistent with the findings of Mukherjee and Naka (1995) who attributed a rise in the discount rate to the expansionary effect of money supply increase. Fama (1981) explained a spurious, rather than causal, positive relation between budget gap deficit and stock prices through a simple quantity theory model, where money demand is stimulated through increases in real activity, which in turn drive stock returns. This indicates that when there is an increase in the budget gap deficit within the country, all share price index will rise and vice versa.

The result of this study indicates that state budget has a positive significant effect in determining the financial market performance in Nigeria.

Recommendations

Based on the findings of this study, it is therefore recommended that:

1. Policymakers need to be careful when trying to influence the economy through changes in macroeconomic variables such as the inflation rate, interest rates, real GDP, and budget gap deficit.
2. Government should set up mechanism to correct macroeconomic ills such as inflation, by managing depression in the stock market, and promoting capital formation which itself would lead to further boom of the economy.
3. The government should ensure that the interest rate in the country is stable during the fiscal year, in other for the government to be able fund to finance the government debt and deficits using a stable long-term real interest rate.

Directions of further research

The study may be extended by employing Engle and Granger's (1987) error correction model so that the short-run dynamics between the variables could be addressed, much the same way as Maysami and Sim did in the cases of Hong Kong and Singapore (Maysami and Sims 2002), Malaysia and Thailand (Maysami and Sims 2001), and Japan and Korea (Maysami and Sims 2001b), or as Islam (2003) did for the Kuala Lumpur Stock Exchange (KLSE) Composite Index.

THE IMPACT OF STATE BUDGET ON FINANCIAL MARKETS (USING NIGERIA AS A CASE STUDY)

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Finance and Banking Master Programme
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SUMMARY

The main purpose of this master thesis is to determine the impact of state budget on financial markets using Nigeria as a case study.

The Master thesis consists of three main parts; the literature review which covers the theoretical construct, the research methodology, and finally the data analysis, its results, a conclusion, and recommendations.

Literature analysis reviews the development of budgetary and management theories, presents the main concepts of organisation-based budget theory, introduces crowding-out effect theory and the Ricardian-Equivalence theory. The researcher also shows the criticism and relevance of these theories to the study.

Following the literature analysis, the author examined the relationship between state budget and financial markets using secondary data. Secondary data was obtained from annual reports and accounts of the Nigerian government for a period of twenty (20) years from 2001 to 2020. The data were validated and reliable as it has been audited and approved by regulatory bodies. Both descriptive and inferential analyses were conducted in answering the research questions.

Furthermore, the results of the research were compared to the similar studies performed in other developed and developing countries. The results of the research were statistically processed with the SPSS programmed batch.

The study found that state budget had significant effect on the financial market in Nigeria (Adj. R2 =0.136; F (3.622); p=0.00). The result of this study indicates that state budget has a positive significant effect on exchange rate and money supply in determining the financial market performance in Nigeria, while the other two performance measures, inflation rate and interest rate, have little influence on financial market performance in Nigeria.

The conclusions and recommendations summarize the main concepts of literature analysis as well as the results of the performed research. The author believes that the results of the study could give useful guidelines to the country towards setting up a sustainable budget that would help the country improve its financial market.

VALSTYBĖS BIUDŽETO POVEIKIS FINANSŲ RINKOMS (ATVEJO TYRIMĄ NAUDOJANT NIGERIJA)

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SANTRAUKA

Pagrindinis šio magistro darbo tikslas – nustatyti valstybės biudžeto įtaką finansų rinkoms, naudojant Nigeriją kaip atvejo analizę.

Magistro baigiamasis darbas susideda iš trijų pagrindinių dalių; literatūros apžvalga, kurioje pateikiama teorinė konstrukcija, tyrimo metodika ir galiausiai duomenų analizė, jos rezultatai, išvada ir rekomendacijos.

Literatūros analizėje apžvelgiama biudžeto ir valdymo teorijų raida, pateikiamos pagrindinės organizacinio biudžeto teorijos sampratos, supažindinama su išstūmimo efekto teorija ir Ricardo-ekvivalencijos teorija. Tyrėjas taip pat parodo šių teorijų kritiką ir aktualumą tyrimui.

Atlikęs literatūros analizę, autorius nagrinėjo valstybės biudžeto ir finansų rinkų ryšį naudodamasis antriniais duomenimis. Antriniai duomenys buvo gauti iš metinių ataskaitų ir Nigerijos vyriausybės ataskaitų už dvidešimt (20) metų laikotarpį nuo 2001 m. iki 2020 m. Duomenys buvo patvirtinti ir patikimi, nes juos auditavo ir patvirtino reguliavimo institucijos. Atsakant į tyrimo klausimus buvo atlikta ir aprašomoji, ir išvadinė analizė.

Be to, tyrimo rezultatai buvo lyginami su panašiais tyrimais, atliktais kitose išsivysčiusiose ir besivystančiose šalyse. Tyrimo rezultatai buvo statistiškai apdoroti SPSS programuojama partija.

Tyrimas parodė, kad valstybės biudžetas turėjo reikšmingos įtakos Nigerijos finansų rinkai (Adj. R2 =0,136; F (3,622); p=0,00). Šio tyrimo rezultatai rodo, kad valstybės biudžetas daro teigiamą reikšmingą poveikį valiutos kursui ir pinigų pasiūlai, nulemdamas finansų rinkos

veiklą Nigerijoje, o kiti du veiklos rodikliai – infliacijos lygis ir palūkanų norma – turi mažai įtakos finansų rinkos rezultatams. Nigerija.

Išvadose ir rekomendacijose apibendrinamos pagrindinės literatūros analizės sąvokos bei atlikto tyrimo rezultatai. Autorius mano, kad tyrimo rezultatai gali duoti naudingų gairių šaliai kuriant tvarų biudžetą, kuris padėtų šaliai tobulinti finansų rinką.

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ANNEXES

Appendix 1

Year	INF	INT	ASI	rGDP	BDG
2001	6.93	1.43	74.03	583.00	- 2,358.00
2002	18.87	1.67	95.39	731.00	1,267.00
2003	12.88	1.77	104.91	780.00	- 2,264.00
2004	14.03	2.19	136.39	963.00	7,164.00
2005	15.00	2.49	176.13	1,222.00	8,334.00
2006	17.86	3.08	236.10	1,563.00	19,531.00
2007	8.23	3.61	275.63	1,792.00	- 2,931.00
2008	5.39	4.68	337.04	2,198.00	18,909.00
2009	11.58	6.94	291.88	1,927.00	- 15,901.00
2010	12.56	7.49	361.46	2,328.00	- 15,411.00
2011	13.72	12.55	404.99	2,544.00	1,791.00
2012	10.84	14.64	455.50	2,756.00	- 598.00
2013	12.22	15.75	508.69	2,998.00	- 13,718.00
2014	8.48	12.15	546.68	3,223.00	- 13,818.00
2015	8.06	19.76	486.80	2,719.00	- 18,718.00
2016	9.01	26.56	404.65	2,176.00	- 18,808.00
2017	15.68	29.96	375.75	1,969.00	- 20,395.00
2018	16.52	34.61	397.19	2,153.00	- 18,207.00
2019	12.09	38.18	448.12	2,230.00	- 21,019.00
2020	11.40	42.41	432.29	2,083.00	- 24,880.00

	ASI	BDG	INF	INT	RGDP
Mean	327.48	-6601.50	12.07	14.10	1946.90
Std. Dev.	146.53	13366.24	3.66	13.39	764.63
Skewness	-0.42	0.52	0.06	0.86	-0.33
Kurtosis	1.94	2.18	2.26	2.40	2.20
Jarque-Bera	1.51	1.44	0.47	2.77	0.91
Probability	0.47	0.49	0.79	0.25	0.64
Observations	20.00	20.00	20.00	20.00	20.00

	MODEL ONE			
	Random-effects GLS regression with Driscoll-Kraay standard errors			
Variable	Coeff	Std.Err	t-test	Prob
Constant	259.73	114.02	2.28	0.05
INF	-1.11	0.38	-2.9	0.02
R^2	0.033			
Hausman Test	$chi^2_{(1)}$ = 1.43 (0.23)			
Breusch and Pagan LM test	$chi^2_{(1)}$ = 228.22 (0.00)			
Heteroskedasticity Test	$chi^2_{(1)}$ = 2.51 (0.11)			
Serial Auto-Correlation Test	$F_{(1, 9)}$ = 81.98 (0.00)			
Cross Sectional Dependence	7.503 (0.00)			

	MODEL TWO			
	Random-effects GLS regression with Driscoll-Kraay standard errors			
Variable	Coeff	Std.	t-	Prob
Constant	149.5	117.	1.2	0.233
INT	4.41	1.79	2.4	0.03
R^2	0.03			
Hausman Test	$chi^2_{(1)}$ = 0.01 (0.93)			
Breusch and Pagan LM test	$chi^2_{(1)}$ = 258.76 (0.00)			
Pesaran CD Test of Cross-sectional	8.141 (0.00)			
Heteroskedasticity Test	$chi^2_{(1)}$ = 3.05 (0.08)			
Serial Auto-Correlation Test	$F_{(1, 9)}$ = 120.29 (0.00)			

	MODEL THREE			
	Linear regression, correlated panels corrected standard errors (PCSEs)			
Variable	Coeff	Std.Er	t-test	Prob
Constant	591.4	83.16	7.11	0.00
rGDP	-4.88	1.14	-4.30	0.00
R^2	0.23			
Hausman Test	$chi^2_{(1)} = 8.67$ (0.03)			
Testparm Test	$F_{(10, 89)} = 4.10$ (0.00)			
Pesaran CD Test of Cross-sectional	6.54 (0.00)			
Heteroskedasticity Test	$chi^2_{(10)} = 682.88$ (0.00)			
Serial Auto-Correlation Test	$F_{(1, 9)} = 142.76$ (0.00)			