REGULATORY SHOCKS AND SHAREHOLDERS RETURN OF LISTED DEPOSIT MONEY BANKS IN NIGERIA

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DECLARATION

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Table of Contents

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GLOSSARY

1. AMCON	Assets Management Corporation of Nigeria
2. BRF	Bank Reforms
3. CAR	Capital Adequacy Ratio
4. CBN	Central Bank of Nigeria
5. CRR	Cash Reserve Ratio
6. DMBs	Deposit Money Banks
7. DR	Deposit Rate
8. EXR	Exchange Rate
9. IRR	Intrinsic Return Rate
10. LR	Liquidity Ratio
11. MDR	Minimum Discount Rate
12. MPR	Monetary Policy Rate
13. NDIC	Nigerian Deposit Insurance Corporation
14. NII	Net Interest Income
15. OE	Owners Equity
16. PAT	Profit After Tax
17. ROA	Asset Return
18. ROE	Equity Return
19. RR	Reserve Requirement
20. RR	Reserve Requirement
21. RRR	Reserve Risk Requirement
22. TSR	Gross Shareholder Return

ABSTRACT

Banks have suffered a lot of setbacks and eventually collapsed due to mismanagement, inexperience, unhealthy banking practices, non-adherence to ethical standards on the part of the management and to a very large extent, absence as well as inadequate financial regulation and supervision. As a result of these ills in the banking sector then, there was a need to financially regulate the sector to ensure its optimal performance. Thus, the study examined the effect of regulatory shocks on shareholders return of listed deposit money banks in Nigeria. The sample size consisted of ten (10) deposit money banks in Nigeria. Data from the research were obtained from financial statements and annual reports of the sampled banks. Data were analyzed through Descriptive and Inferential statistics. The findings revealed that regulatory shocks have significant impact on shareholders return (Adj.R^2= 0.1715, Wald chi2$_{(1)}$ = 291.44, p<0.05); capital adequacy ratio does not significantly affect shareholders return (R^2= 0.0292, z = 1.63, p>0.05); reserve requirement does not significantly affect shareholders return (R^2= 0.0081, t = -0.90, p>0.05); monetary policy rate significantly affects shareholders return (R^2= 0.0992, t = 3.29, p<0.05) and banking reform significantly affect shareholders return of listed money deposit banks in Nigeria (R^2= 0.1060, z = -7.96, p<0.05). The study concluded that regulatory shocks have significant impact on shareholders return of listed deposit money banks in Nigeria. The study recommended that management should provide adequate capital and be readily available for any regulatory reforms to be carried out by CBN in order to reduce the negative effect, it does have on financial institutions and ensure that shareholders are catered for through increase in dividend and allowing for future expansion.

Word Count: 273

Keywords: Banking sector reform, Bank size, Capital adequacy, Reserve requirement, Monetary Policy rate, Regulatory shocks and Shareholders returns

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The banking sector is one of the most important sectors of the economy in any country. This can be due to the fact that the banking sector most particularly the money deposit banks are used by the government to accomplish certain economic goals and facilitate financial intermediation. The banking sector is also a weapon used by the government in achieving economic development. It is for this reason that the banking sector perhaps remains one of the most regulated sectors in the economy. In Nigeria, the central bank of Nigeria as the apex bank is responsible for providing guidance and regulations to direct the operations of the money deposit banks in Nigeria to accomplish those economic objectives. This guidance and regulations most times come unforeseen and are generally issued to ensure the sustainability of the banking sector.

The banking sector in Nigeria has undergone several changes as a result of diverse laws and reforms. Igbinosa, Ogbeide and Akanji (2017) opined that these numerous changes were done to improve the banking system in Nigeria and contribute to economic development. The various regulations in the Nigerian banking sector came as a result of the fact that there were certain unhealthy conditions in the Banking industry thus the need for regulations to improve them. According to Igbinosa, Ogbeide and Akanji (2017), the issue of financial regulations for the banking industry has been the responsibility of the Central Bank of Nigeria alongside the Nigerian Deposit Insurance Corporation (NDIC) who ensures that the deposits of the public are protected and that financial stability is achieved to boost efficiency and strengthen the economy as a whole. The very essence of controlling the banking industry is to avoid distress in the banking sector and ensure consumer trust to develop the economy.

Financial laws in Nigerian have been in various regions. Omankhanlen (2012) stated that financial controls in Nigeria can be dated as far back as the 1950s. Following that, further reforms came in the 1990s, 2004 by Charles Soludo, 2009 by Sanusi Lamido Sanusi which led to the creation of Assets Management Corporation of Nigeria (AMCON). The establishment of AMCON contributed to a reduction in the banking industry ratio of non-performing loans to overall credit from 34.4 per cent in November 2010 to 4.95 per cent as of December 2011.

The first reform was aimed at restructuring between 1986 and 1993 to ensure substantial private sector spending, supplemented by the period of re-regulation as a result of the global financial

distress in 1998. In 1999, the next change focussed on liberalizing universal banking, with universal banking being adopted and liberalizing. Via the merger of so many banks in Nigeria, Soludu (2009) implemented a new reform in 2003 to the consolidation of the banking industry. The banks' capital base has been increased to N25 billion at least. The number of banks decreased in 2005 from 89 to 25, and then to 24. The 2009 banking reforms aimed to remove certain gaps in the banking industry and break up the financial system, to integrate the numerous ad-hoc and tentative reforms to unleash the enormous economic potential (Sanusi, 2012)

Another area of financial control affecting the banking sector in Nigeria has been the monetary policy pace. Mishkin says in 2013 that monetary policy requires the use, to achieve such macro-economic targets such as market stabilization, maximum employment, and sustained economic development, of monetary instruments for regulating and controlling volumes, costs, accessibility, and capital and credit direction in an economy. The overall purpose of monetary policy is to monitor the money direction in various sectors of the world to achieve various macro-economic goals. The monetary policy rate was applied to indicate the optimal direction of the movement of interest rates (Nwude, 2013). Nigeria's central bank typically sets a monetary policy rate to regulate Nigeria's interest rate. Nguyen, Vu and Le (2017) expressed their view that Nigeria's banking system is a monetary policy instrument. Monetary policy is the Government's tool for controlling economic inflation. In theory, increased access to investment capital affects bank profits and thereby financial efficiency. In general, if the country has a lot of liquidity, the government has a contractionary strategy and raises the pace of monetary policy. If the government is unable to raise the money supply in the economy, the reverse is done. This normally affects the banking industry as monetary policy typically affects the demand by its customers for credit facilities.

The minimum proportion of deposits to be maintained by banks with the central bank (Abid & Lodhi, 2015). It is one of the monetary policy instruments used to regulate the financial provision of the economy. To influence the availability of funds in the banking sector, the reservation condition ratio is stipulated by the Nigerian Central Bank. As the banking industry relies on the funds that it has available for its operations, the output of banks in Nigeria is likely to be affected. A rise in the banks' reserve needs ratio contributes to a reduction in the funds available to the financial sector. It is used essentially to control the economic supply of capital. The new cash balance ratio in Nigeria is 22.5%. However, the Nigerian Central Bank has

released a guide to banks to raise their loans to 65% or to face a higher cash balance requirement of 50 per cent of the lending deficit (Reuters, 2019).

The capital adequacy ratio is one of the major financial regulations per bank. The percentage ratio of main and asset resources (e.g., credits and investments) of a financial institution is considered to be an indicator of financial strength and stability by such financial institutions (Olalekan & Adeyinka, 2013). The capital adequacy rate currently stands at 16% in Nigeria. It is seen as a message to customers about the bank's power. It is thought that banks with a capital adequacy ratio below 16 per cent exhibit symptoms of distress. There is also still a need to improve the adequacy of capital which is one of the main drivers of financial regulations. The reason is that financial institutions' capital adequacy has a significant impact on their lending capacity. That is why many banks in the country faced the high cost of financial distress that disrupted profitability because there was a lack of resources (Olalekan & Adeyinka, 2013). This is because adequate capital directly and immediately affects the amount of loan-sufficient funds that often impact risk-absorption levels and levels the effect of capital adequacy on banking sector results (Ezike, 2013).

Hence, this study is undertaken to contribute to the literature in this area. Thus, Nigerian banking institutions are products of revised regulations and reforms. So, to what extent do these series of regulations impact the return of shareholder of money deposit banks in Nigeria is a question this study seeks to address.

1.2 Rationale for Research

Because of mismanagement, inexperience, unhealthy banking procedures, lack of professional management principles, low asset quality under capitalism, and in a great deal, absence, as well as inappropriate financial oversight and supervision, the banks suffered a great many setbacks and ultimately failed during pre and postcolonial days in Nigeria. Due to these ills, the industry required financial regulation to ensure optimum efficiency in the banking sector. The international economy has suffered in the past, particularly in 1998 and 2008, as a result of unprecedented financial and economic crisis. A prominent financial institution has collapsed because of the recession (Sanusi, 2012). The crash of the Investment Bank Lehman Brothers resulted in a financial recession. Nigeria also faced the heavy burden of the crisis as its economy declined, its stock exchange fell close to 70%, and its financial market and downstream petroleum and gas industry caused major losses. Recently the Nigerian economy has just stabilized from unemployment and a recession in 2015.

The Central Bank, as the apex regulator, is required to implement adequate regulations and the policy system to avoid complete market collapse, to lower bank risks and preserve resilience (Ogbeide & Akanji, 2017). Without deliberate, aware and progressive financial controls, legislative mechanisms and the regulatory system of a Central Bank, it can be difficult to achieve growth in the banking sector. The aim of financial regulation in this regard should be to increase banks' overall efficiency to allow them to compete internationally favourably with their counterparts. The CBN provides a safeguard against this, by legislation and other ways to resolve this, through its presumed favourable regulatory stance.

Many banks failed because of countless reasons before the start of the re-capitalization reforms in Nigeria. The public discontent and lack of trust in the Nigerian banks meant a need to alleviate the troubles of the banking sector constantly undermined. This prompted the CBN to develop many regulatory changes to regulate the activity of banks to ensure that good practise is followed and that banks perform favourably with their global counterparts. The growth rate in Nigeria has over the years been very deterrent, despite various reforms. Therefore, there is an analytical concern to be discussed in this report as to whether the reform policy fulfilled its overall objectives. It is to this end that this research work seeks to measure the impact of banking sector reforms on economic growth in Nigeria

1.3 Objective of the Study

The major objective of this study was to determine the impact of regulatory shocks on shareholder return of listed deposit money banks in Nigeria. To achieve this, the following specific objectives were stated:

I. examine the effect of capital adequacy ratio on shareholder return of listed money deposit banks in Nigeria.
II. determine the effect of reserve requirement on shareholder return of listed money deposit banks in Nigeria.
III. examine the effect of monetary policy rate on shareholder return of listed money deposit banks in Nigeria.
IV. determine the effect of banking sector reform on shareholder return of listed money deposit banks in Nigeria.

1.4 Research Questions

The following research questions were answered in the course of the study:

I. To what extent does the effect of capital adequacy ratio on shareholder return of listed money deposit banks in Nigeria?
II. What is the effect of reserve requirement on shareholder return of listed money deposit banks in Nigeria?
III. How does the effect of monetary policy rate on shareholder return of listed money deposit banks in Nigeria?
IV. What is the effect of banking sector reform on shareholder return of listed money deposit banks in Nigeria?

1.5 Research Hypotheses

The following hypotheses were tested in this study:

$H_0$1: The capital adequacy ratio does not significantly affect shareholder return of listed money deposit banks in Nigeria.

$H_0$2: Reserve requirement does not significantly affect shareholder return of listed money deposit banks in Nigeria.

$H_0$3: Monetary policy rate does not significantly affect shareholder return of listed money deposit banks in Nigeria.

$H_0$4: Banking sector reform does not significantly affect shareholder return of listed money deposit banks in Nigeria.

1.6 Structure of the Dissertation

This thesis was divided into five chapters. Chapter one analyzed the context of the project, the issue of the analysis, the study's goals, the hypothesis of the study. Furthermore, the terms of the work were clarified based on the contextual use of the work. In short, this chapter will be a prelude to the analysis. Three key elements of the analysis were discussed in chapter two. These are the logical analysis, the underlying idea and meaning of the different variables used, the analytical examination, and the empirical examination. The empirical analysis of the previous efforts in detail. This study expanded the understanding of the researcher and the holes now covered by recent research efforts and the methodological paradigm that is behind the researcher's studies.

The approach for the thesis was presented in Chapter three. The chapter mainly addressed the study's architecture and population. In Chapter four, data were analyzed by Multiple regression for inferential statistics and mean, standard deviation, minimum and maximum, the descriptive study was divided. The empirical research attempted, with the OLS approach, to determine the relationship and importance of the independent and dependent variables. This chapter summarizes the results and the consequences of this analysis. Conclusions and suggestions have been drawn. Finally, in the chapter, the contribution to understanding and further research have been illustrated.

CHAPTER TWO
REVIEW OF LITERATURE

Chapter two dealt with three basic components of the study. These are the conceptual review, the underlying concept, and definitions of the various variables employed, the theoretical review emphasized, the empirical review for in-depth knowledge of the previous efforts. The review will broaden the researcher's knowledge and the gaps now filled by the current research effort and the researcher's conceptual model underlying the studies adopted by the researcher.

2.1 Conceptual Review

2.1.1 Financial Regulatory Shocks

The CBN and including Nigerian Deposit Insurance Corporation are responsible for financial supervision, especially in the banking sector (NDIC). The active participation of CBN in financial regulation of the banking sector aims primarily at protecting depositor money, reinforcing banks against internal and external shocks, and fostering financial stability to affect financial sector efficiency and economic improvement overall (Igbinosa, Sunday & Babatunde, 2017). Intuitive, proper banking regulation should be seen as an all-embracing position by CBN as the banking industry is the engine and driver of all sectors of the economy (James, 2018). For example, in the economic management philosophy, it is a shared view that the prevention of market collapse is essential for financial regulation. Preventing business collapse means that the apex bank establishes the right regulatory and policy framework: The Central Bank (Frank, 2019).

In addition, financial controls can result in low-risk tolerance and stability of banks. Without aware and radical financial rules, legislative procedures, and regulatory structure of the Central Bank, it can be difficult to achieve growth of the banking industry (Agu & Nwankwo, 2019). In this regard, the aim of financial regulation should be to boost banks' overall performance to allow them to compete globally in a favourable manner with their counterparts. If a bank is, for example, excessively vulnerable to capital and liquidity costs, it would have a negative impact on shareholder' equity. The CBN provides a secure roadmap to this through amendments and other approaches to the implementation of a perceived beneficial regulation program (Mirie, 2018). In Nigeria, however, financial supervision involves several changes that may go back

to the 1950s, when reforms were already implemented in the 1990s, and big shakes in the bank sector were taken between 1999 and 2003. (Omankhanlen, 2012).

Several financial institutions in Nigeria have recently been troubled, exposing the financial sector's vulnerable status. Between 1989 and 1996, many banks and non-bank financial institutions had a significant worsening financial situation which obliged authorities to take decisive measures towards restoring public trust in the financial system. The number of banks listed as distressed rose from 8 to 52 during this time (Abba, Ene, Soje & Lilian, 2018). Since then, the political turmoil of the annulment of the presidential election of 1993 has been the product of a further round of banking crises. The CBN then withdrew the 5 banks' licenses (4 in 1994 and 1 in 1995). In 1995, in addition to one new bank in 1996, the CBN took over the administration of 17 troubled banks. The bank reported that the bank's banking licenses had been revoked as of 16 January 1998 under the Bank and Other Financial Institutions Act of 1991 (as amended), which was necessitated by its serious financial circumstances (Owino & Kivoi, 2016). The situation in the sector was awful up until the governor of the Central Bank in July 2004 when the N25 billion bank recapitalization scheme in Nigeria was laid down.

2.1.1.1 Capital Adequacy

In 2019, Ahmad and Man described total capital as a measure of bank capital as total risk-weighted assets. It refers to weighted credit exposures as a percentage of the risk of a branch. This ratio is used to secure depositors and to encourage financial markets' stability and performance worldwide. The ratio of capital adjustment to capital to risk is also known as the ratio between capital to risk (weighted) assets. National regulators monitor the CAR of a bank to ensure it can withstand a sufficient amount of loss and comply with the criteria for statutory capital (Fatima & Lodhi, 2015). The ratio of capital adequacy is the ratio of the bank's ability to face time and other uncertainties, such as loan risk, operating risks, etc. The easiest formulation is that the collateral of a bank is a coating for future defaults which covers depositors and other lenders of the bank (Dare & Isaac, 2017). In most countries, banking regulators identify and track the CAR for the safeguarding of depositors and thereby preserve trust in the banking system. In the most basic wording, it is equivalent to the reverse of formulations used in leveraging debt-to-equity (although CAR uses equity over assets instead of debt-to-equity; since assets are by definition equal to debt plus equity, a transformation is required). However, CAR understands that properties may have varying degrees of risk, contrary to conventional leveraging (Edem, 2017).

Adequate capital adequacy is described by Matthew (2017) as a condition in which modified capital is necessary to absorb all losses and fixed assets of the bank that have sufficient surplus for the current operations and potential growth. The capital adjusted shall include ordinary share capital, regulatory stocks, general investments, net provisions on the accounts not exercised, and any other loss resulting from fraud, A bank has enough resources if it has sufficient funding for its service levels to meet the amounts and capital ratios, to ensure the bank's stable operation and to maintain public trust and to obtain sufficient assets to operate well (Felicia, 2013). In every commercial enterprise, sufficient resources provide an outlet for higher practices. It promotes market effort and improved results. According to Olalekan and Adeyinka (2013), as laid down in circular BSD/11/2003 of 4 August 2003, the ratio of capital to overall risk-weighted assets should stay at 10%. In addition, at least 50% of a bank's capital should be paid-up capital and reserves, whereas all banks must retain a ratio of not less than 1:10 to the gross credit net of provisions between their capital funds adjusted. Commercial banks in Nigeria are also encouraged to retain a higher capital ratio that is proportionate to their risk profiles. In general, the current concept of capital constituents, overall capital deduction and constraint within and between primary capital (Tier 1) and supplementary capital (Tier 2) are in line with the Basel Agreement. The capital of Tier 2 is restricted to 100% of the capital of Tier 1. The general arrangement belonged to Tier 2, where CBN is satisfied with a particular provision of a bank for poor and questionable debts (Olalekan & Adeyinka, 2013).

2.1.1.2 Reserve requirement

As the minimum percentage of reserves that banks can retain with central banks, Alex and Ngaba (2018) determine the reserve requirements. It is one of the monetary policy instruments used to regulate the financial provision of the economy. Any improvements in the CRR affect the bank's availability of funds for a loan in the system and thereby impact the supply of money in the economy. Excess reserves are any deposits made by a bank exceeding the reserve requirement with the central bank (Obara & Owate, 2017). Cash deposits are called cash and balances with the central bank in a bank statement of the financial situation and protect the bank from unforeseen incidents like unusual big withdrawals from depositors or banks. A bank still wants to stop government injections so it will put it at the hands of the government (Oganda, Abuga & Simeyo, 2018).

Dare and Isaac (2017) have mentioned that there are two categories of reserve requirements - primary and secondary. (a) Primary reserve: The primary reserve is often referred to as the Cash Reserve Ratio which, as in previous years, was used to supplement the monetary policy

goals of the Open Market Operations. The CRR estimate was based on the overall liabilities of the deposit money banks (that is demand, deposits and time deposit), deposit certificates and non-banking public bills, as well as other articles on the deposit. (b) Secondary reserve, also called liquidity ratio secondary (LR). Like the CRR, the liquidity requirements for commercial banks are calculated based on all liability (demand), reserves, times) deposit certificates (CDs), non-bank bills and other deposits. LR's goal is to ensure banks are still liquid to satisfy customers' withdrawal demands (Hassan, 2014).

2.1.1.3 Monetary Policy rate

The bank rate is the Central Bank's minimum lending rate for re-discounting bills of bills and shares owned by the bank (Victor, Ozioma, Nze & Samuel, 2017). The higher interest rates observed by Mutiu, Kamar, Opeyemi and Olamide (2018) are the result of a currency policy that undoubtedly decreases demands for lending and reduces output or development. The increase in the banking rate increases as CBN sees inflationary pressures in the economy. During this time, it becomes impossible to borrow from the CBN and deposit banks take less from it. The deposit money banks often borrow less from creditors such as the private and industry due to a rise in the borrowing cost (Eke, Eke & Odim, 2015). On the opposite, it decreases the bank rate in a depressed economy, making borrowing from the central bank easier. Deposit money banks often lower their loan rate so that business people can borrow money easily (Samuel & Peters, 2014).

2.1.1.4 Banking sector reform

Charles (2014) believed that the reforms are intended to allow the banking system to build the necessary resilience to promote the nation's economic growth by executing its functions efficiently as the centre of financial intermediation. Adenola and Kehinde (2017) claim that reform involves improving current relations generally resulting from several policies aimed at waste disposal and production. The reform also means improving the current state of affairs. In addition, Kehinde and Adejuwon (2011) reported that changes to the financial sector aim at developing an effective financial management system. The study also noted that efforts are being made to improve the banking system's operating capacities, increase money and securities production, revise the payment system and ensure greater central bank independence concerning macro-economic policy development and application (Kehinde & Adejuwon, 2011).

Olokoyo (2013) said that the majority of bank reforms need a financial crisis response. The authors observed that a banking crisis can be caused by the instability of the banking system

that is marked by persistent liquidity, insolvency, undercapitalization, a high degree of non-performable loans, and poor corporate governance. The study also observed, however, that bank changes are also carried out when no crises arise. If this is the case, the reform would ensure that the banks play an active developing part, to secure depositor capital and to ensure diversified, strong, and reliable banking industries. As "deliberate policy responses in reaction to perceived or imminent financial crises and related failures, Matthew (2017) described financial reforms. Financial sector reforms are designed to solve problems such as regulation, risk control, and organizational inefficiencies. Most financial changes are about capitalization being stepped up.

2.1.3 Measurement of Shareholder returns

A combination of changes in stock price during the calculation period plus all dividends paid by an interim firm, described by Felicia (2013) as its total shareholder return. Investors use this formula to calculate their shareholder profits. Gross Shareholder Return (TSR) measures the shareholder's total return on capital gains and dividends (Charles, 2014). During the retention time of an investment, the TSR is an intrinsic return rate (IRR), overall cash flows to a lender. TSR is the same, regardless of how it is calculated: the sum returned to investors. The shareholder's total return is the financial profit that results from the stock price change plus the dividends paid by the company over the calculated period, divided by the stock's original purchase price. Total shareholder return is a calculation of the success of the stocks and shares of various firms over time. It mixes share price appreciation and dividends paid to demonstrate an annualized shareholder return (Nwede, 2013). The research included tax benefits as the calculation of the shareholder's return.

2.2 Theoretical Framework

2.2.1 Normative theory of financial regulation

Wittman developed this regulatory theory of financial regulation (1977). The theory suggests that financial regulators can further include a viable pricing mechanism that can increase economic performance and create regulatory regimes in line with a regulatory framework that is transparent, predictable, legitimate, and credible. Wittman thus maintains that the principle of regulation guarantees that the study of costs and benefits of different regulatory tools used by monetary authorities is cost-effective. The word 'policy' can be used as 'reform' interchangeably. In general terms, changes have arisen to address the problems faced by global financial economies, such as systemic crisis, globalization, technical developments, and the global financial crisis. In particular, the banking industry, stock markets, and non-bank

financial institutions form the financial sector. The objective of each industry's financial sector is to improve monetary management, risk management, and corporate capital holding capacity. Reforms also aim to proactively stabilize the financial system, deter systemic crises, improve the frameworks of business conditions and introduce ethical norms, as Omankhanlen (2012) pointed out.

Several reforms and financial controls have since been introduced to positively strengthen the activities and efficiency of the Nigerian banking sector. Shittu (2012) reports that changes to Nigeria's banking sector led to a new business perspective as banks put best practices in the fields of corporate management and risk management in place. In addition, the integrity of transactions and public accountability have greatly increased. Therefore, amended laws and amendments result in Nigerian banks. Many banks failed because of countless reasons before the start of the re-capitalization reforms in Nigeria. The public discontent and lack of trust in the Nigerian banks meant a need to alleviate the troubles of the banking sector constantly undermined. This prompted the CBN to develop many regulatory changes to regulate the activity of banks to ensure that good practise is followed and that banks perform favorably with their global counterparts. The use of monetary policy to control the CBN's interest rates is another area where financial regulations have taken place in the banking sector. The aim was to promote short-term connectivity to deficit financing units. In theory, increased access to investment capital affects bank profits and thereby financial efficiency. There is also still a need, one of the main factors of financial legislation is improving the adequacy of funds. The reason is that financial institutions' capital adequacy has a significant impact on their lending capacity. That is why many banks in the country faced the high cost of financial distress that disrupted profitability because there was a lack of resources (Olalekan & Adeyinka, 2013). In other terms, the impact of capital adequacy on the profitability of the banking sector cannot be underestimated as the sufficient amount of money available for loans determines explicitly and instantly the extent and degree of risk absorption (Ezike, 2013).

The thesis would be based on the normative principle of financial regulation, as regulators can promote healthy competitiveness where possible, by collecting information and then supplying operators with the necessary incentives to increase their corporate output to reduce the cost of information asymmetry. This theory outlines how banks deal with regulatory surprises and ensure shareholder get their equity return as they should.

2.3 Empirical Review

2.3.1 Capital adequacy and Shareholder' return

Frank (2019) looked at the relationship between Ghana's capital sufficiency, cost-income ratio, and bank results. The study found that output was negative in terms of capital adequacy, calculated by asset return (ROA) and equity return (ROE). However, against the return on investment, it was statistically negligible but meaningful in the case of the equity return. The report also showed that the cost to revenue ratio is negatively linked to ROA and ROE. It is unfavourable for ROA and ROE concerning gross equity debt. The relationship is therefore statistically important for ROA but negligible for ROE. The scale of the bank also had a poor output partnership, both with ROA and ROE. Finally, asset growth is related to both ROA and ROE, but statistically negligible for ROA and statistically meaningful for ROE.

The effects of capital adequacy on financial success in Nigeria by Commercial Bank were investigated by Agu and Nwankwo (2019). The outcome of this study reveals the optimistic and important effect of Owner's equity (OE) on Nigerian commercial banks' net interest income (NII). This study further verified the optimistic and important association between Loans and Advances and Net Interest Revenues of Nigerian commercial banks. Total deposits had a negative impact on the net interest income of commercial banks in Nigeria, and no major effects on them. The financial regulations and the banking sector in Nigeria are reviewed by Igbinosa, Sunday, and Akanji (2017). The analytical results revealed that financial regulation greatly impacts the efficiency of the banking sector while financial regulation has complex and short-term relationships with the performance of the banking sector in Nigeria. The four-period capital adequacy latency has been shown to have detrimental consequences for the output of the banking sector and is not statistically significant.

The impact of corporate governance on banking efficiency in the banking sector in Kenya has been estimated by Owino and Kivoi (2016). The study revealed a positive impact on bank profitability in terms of liquidity, efficiency, and auditing, and reporting quality. The protection and inflation of minority shareholder had a detrimental impact on results, on the other hand. Abba, Ene, Soy, and Lilian (2018), using balanced panel data from financial statements of 12 selected banks, studied the CAR's basic bank determinants in Nigerian deposit money banks (DMBs) over the period from 2005 to 2014 for the ten years. The study concluded that the risk portfolio, deposit, profitability, and the consistency of the assets of banks are decided by the CAR, and that the Nigerian banks' CAR exceeds the regulatory minimum.

2.3.2 Reserve requirement and Shareholder' return

The interaction between liquidity and company results of Nigeria banks for the use of annual data from 1984 to 2014 has been studied by Isaac and Owate (2017). The empirical findings have shown a substantial unfavourable, short-term association between, however marginally and insignificantly, Cash Reserve Ratio and corporative efficiency and a positive link between the Deposit Loan Ratio and liquidity ratio, on the one side. The cash-to-deposit ratio is also statistically sufficiently important to affect returns on the Shareholder' Fund in the long term while the credit-to-deposit ratio is indulgent to stimulate performance in Nigeria's money deposit banks.

The relationship between the reserve requirement ratio and the profitability of banks in Pakistan was investigated by Fatima and Lodhi (2015). The research finding showed that CRR as a reserve requirement metric has a major reverse financial relationship with banks determined by ROA and ROE. The impact on the success of commercial banks in Kenya by cash reserves was assessed by Oganda, Abuga, and Simeyo (2018). The study found a clear negative association between cash reserves and returns on capital and the success of the Equity Bank. The effect of the monetary policy on Nigeria's success by commercial banks was empirically evaluated by Dare and Isaac (2017). The study showed that the relationship between MPR and ROA in the selected bank is positive but statistically negligible. The study also showed that the relationship between CRR, LR, and ROA was negative and statistically negligible. They inferred that it could not be far from commercial banks that the reasoning for the statistically negligible ties found was low conformity with monetary policy guidelines.

The empirical evidence for liquidity management's effect on deposit money banking efficiency was reviewed by Edem (2017). Results from the empirical study suggest that liquidity management and the success in Nigeria of deposit money banks are significantly related. The association between equity and liquidity management variables indicated positive effects: liquidity and cash balance ratios, while credit to repository ratios had negative effects. By using the panel database regression, Nhan, Vu, and Le (2017) studied the effect of monetary policy on the Vietnam benefit of commercial banks. The findings showed that banks' earnings and monetary policies had a good association. Just MB had a substantial positive effect on the Bank's earnings at 10 per cent of the variables selected reflecting SBV's monetary policy.

2.3.3 Monetary Policy rate and Shareholder's return

The effect of monetary policies systems on Nigeria's business banks was investigated by Victor, Ozioma, Nze, and Samuel (2017). The study found that during the SAP period the

monetary policy rate did not have a substantial effect upon the total asset value, mobilization of deposits, loans, loans and advances, and loans of the private sector. During the SAP period, the monetary policy rate affected significantly the number of total assets value, mobilization of deposits, loans and advances and loans to the private sector. The impact of monetary policy on Nigerian banks' success was investigated by Greg, Udude, and Hope (2015). The research tested the null hypothesis that the bank deposits are not significantly connected with selected output indices, namely Exchange Rate (EXR), Deposit Rate (DR) and minimum Discount Rate (MDR). Overall results indicate that monetary policy has an important impact on the liabilities of banks deposits. The Exchange rate (EXR) had a positive, substantial effect on banks' deposit accounts in Nigeria, mostly individually, and found that the deposit rate (DR) and the minimum Discounts Rate (MDR) had a negative influence on banks' deposit liabilities in Nigeria.

Determinants of profitability of the African banks during bank capital regulation were examined by Ozili (2017). The findings showed that the bank size, overall regulatory equity, and loan loss provisions were substantial factors determining the return on assets of listed banks as compared with non-listed banks, through the use of static and dynamic panel estimation techniques. In particular where there was an adequate regulatory capital ratio of banks listed, regulation capital often had a greater (and a more positive) effect on the return on assets of listing banks than non-listed banks. The impact of government regulations on commercial banks in Kenya was evaluated by Osano and Gekano (2018). The study concluded that the interest rate limit and profitability of commercial banking companies in Kenya are positive. Likewise, the analysis concluded that the capital needs and profitability of commercial banks in Kenya are positively interconnected.

Adama and Apelete (2017) studied short-term and long-term relationships with the Togo bank sector profitability (measured by return on assets and incomes on capital) between three major macroeconomic variables (GDP expansion, actual exchange rate and inflation) in the 2006 to 2015 period, using the Pool Mean group estimator. Results have shown that the banks' asset return and equity return are not, in the short term, relevant to macroeconomic variables. However, banks' return on assets is favourably calculated by the ratio of bank capital to assets and the size of banks' assets while banks are adversely impacted by the bank's return on equities.

2.3.4 Banking sector reform and Shareholder's return

Matthew (2017), through the adaptation of the ANOVA model in the Stepwise Regression, evaluated the effect of banking reform on banks' success and economic growth for the period

1981 to 2015. The study confirmed the double effect of the changes to the banking system in Nigeria on economic performance and banks. Felicia (2013) has accessed the impact on banks' success in Nigeria of the reforms. The requisite data have been collected using the questionnaire instrument. The study found that the process of recapitalization and privatization affected the manufacturing sector of the economy and thus the Nigerian economy as a whole. The relationship between banking sector restructuring and Nigeria's economic growth was analyzed with data spanning by Emeka, Maryann and Priye (2016). The determination coefficient suggested that approximately 55% of the variance in Nigerian economy results can be explained by variables in banking reforms. The impact of bank reforms on Nigeria's economic developments for the period 1986–2014 has been discussed by Ifeanyi and Isaac (2016). The study showed the favourable and important effects on the Gross Domestic Product of the minimum capital base of banks. The Minimum Capital Base of the banks was also found to affect inflation. The Minimum Capital Base of Banks was however found to have a significant positive impact on unemployment.

2.4 Gap(s) in Literature

Empirical studies have been carried out on capital, regulatory shocks and regulatory frameworks and their effect on performance and profitability have been studied several times over the years in developed countries. Although, based on article review and gap analysis carried out, the gap missing in the literature is that regulatory shocks and their effect on shareholder return have not been rare in literature in developing countries like Nigeria. This research, therefore, intends to overcome this gap of the existing empirical literature by studying how regulatory shocks through capital adequacy, banking sector reforms, monetary policy rate, and reserve requirement and how it impacts shareholder return of listed financial institutions in Nigeria.

CHAPTER THREE

METHODOLOGY

This chapter describes the methodological framework used in attaining the stated objectives of the study. The main focus is on the research design, type and sources of data, population description, sample size, and method of data analysis.

3.1 Research Design

The research design adopted was an *ex-post facto* design to obtain data from the annual report of individual companies. The reason is that all information needed for the research can be obtained from the already published financial statement, CBN bulletin, fact book, and other secondary sources.

3.2 Population

The population of the study consisted of all the twenty-one (21) deposited money banks listed on the Nigerian Stock Exchange (2019).

3.3 Sample size and Sampling Technique

The sample size for this study was ten banks. The sample for this study were Access Bank of Nigeria, Fidelity Bank of Nigeria, First City Monument Bank of Nigeria, Guaranty trust bank, Stanbic IBTC Bank, Sterling Bank, Union Bank of Nigeria, United Bank for Africa, Wema Bank, and Zenith bank. This sample was selected by the researcher because of the ease of finding complete information for these banks for the ten years ranging 2009-2018, using convenience sampling.

3.4 Source of Data

Data for this study was sourced using secondary data and will be extracted from the financial statements of the selected banks' various CBN statistical bulletins.

3.5 Method of Data Analysis

The study established the effect of regulatory shocks on shareholder return of deposit money banks quoted in Nigeria. To achieve this, inferential statistics was employed in this study. The study used a simple regression model in investigating the impact of independent variables on the dependent variable. Regression analysis was suitable because of its unique benefit such as it allows the researcher to establish objective measures of relationships between the independent and the dependent variables, rather than using personal judgment. The regression

equations were tested using econometric models. The regression equations were analyzed on the Stata/IC 13.0 Output and some other pre/post-estimation and the diagnostic test was carried out.

3.6 Model Specification and Measurement of Variables

Variable	Abbreviation	Measurements
Regulatory Shocks		
Capital Adequacy Ratio	CAR	Capital divided by Risk-weighted assets
Monetary Policy Rate	MPR	Monetary Policy Rate as stipulated by CBN
Reserve Risk-weighted	RRR	Reserve Requirement as stipulated by CBN
Bank Reforms	BRF	Variable of one (1) in the period banking reform occurs and zero (0) in the period banking reform never occurred
Shareholder Return		
Profit after tax	PAT	Profit after tax

Therefore,

$$PAT_{it} = \alpha_1 + \beta_1 CAR_{it} + e_{it} \ldots\ldots\ldots\ldots \text{Model 1}$$

$$PAT_{it} = \alpha_2 + \beta_2 MPR_{it} + e_{it} \ldots\ldots\ldots\ldots \text{Model 2}$$

$$PAT_{it} = \alpha_3 + \beta_3 RRR_{it} + e_{it} \ldots\ldots\ldots\ldots \text{Model 3}$$

$$PAT_{it} = \alpha_4 + \beta_4 BRF_{it} + e_{it} \ldots\ldots\ldots\ldots \text{Model 4}$$

$$PAT_{it} = \beta_0 + \beta_1 CAR_{it} + \beta_2 MPR_{it} + \beta_3 RRR_{it} + \beta_4 BRF_{it} + e_i \ldots\ldots\ldots\ldots \text{main model A}$$

Where;

e_i = disturbance term.

β_0 = intercept.

$\beta_1 - \beta_4$ = coefficient of the independent variables.

The test above will be carried out at a 5% level of significance.

3.7 Model Evaluation

i. T-statistic: the measure of the statistical significance of an independent variable *x* in explaining the dependent variable *y*. It is determined by dividing the estimated regression coefficient *b* by its standard error SB.

ii. F-test: The F-test was used to test the overall significance of the regression equations. It usually involves the ratio of two independent estimates of variance. The regression equation is adequate if the F-statistic is significant at the chosen level of significance.

iii. R-squared and Adjusted R-squared: *R*-Squared, also known as the coefficient of determination and Adjusted R-squared known as the coefficient of multiple determination, are statistical terms saying how good one term is at predicting another.

3.8 *A priori* Expectation

The *a priori* expectation from the data analysis was that a significant relationship exists between regulatory shocks and shareholder return. The *a-priori* expectation for the stated models can be given as follows:

Table 3: *A-priori* Expectation

S/N	Variable	Measurement	Expected Sign	Interpretation
1.	PAT	Financial performance of ith bank at year *t*		
	Independent Variables			
2.	CAR	Capital divided by Risk-weighted assets	+	$\beta > 0$
3.	MPR	Monetary Policy Rate as stipulated by CBN	+	$\beta > 0$
4.	RRR	Reserve Requirement as stipulated by CBN	+	$\beta > 0$
5.	BRF	Variable of one (1) in the period banking reform occurs and zero (0) in the period banking reform never occurred	+	$\beta > 0$

Source: Author Compilation (2021)

Decision Rule

Reject the null hypothesis when *p*-value < 0.05

3.9 Ethical Consideration

The research work was carried out with expertise, diligence, honesty, and integrity from the researcher. This is to perceive and guarantee the integrity of the findings. The researcher was to avoid any form of dishonesty by recording truthfully the data extracted from the various annual reports.

CHAPTER FOUR
DATA ANALYSIS, RESULTS AND DISCUSSION OF FINDINGS

This chapter presents an explicit analysis and interpretation of the results of the econometric methods and tests employed in analysing the impact of regulatory shocks on shareholder return of listed deposit money banks in Nigeria. The descriptive characteristics of both the dependent variable (Profit after tax (PAT) and independent variables (Capital Adequacy Ratio (CAR), Reserve requirement (RR), Monetary policy rate (MPR) and Banking Reforms (BRF) were discussed in this chapter. The result of the diagnostic tests (Hausman Test, Heteroskedasticity test, autocorrelation test and cross-sectional independence test) were also reported in this chapter. In this chapter, the estimation analysis results were discussed in relation to the prior empirical findings.

4.1. Pre-Estimation Analysis

The pre-estimation analysis entails the description of the variables in the model. Table 4.1 depicts the characteristics of the dependent variable (Profit after tax (PAT) and independent variables (Capital Adequacy Ratio (CAR), Reserve requirement (RR), Monetary policy rate (MPR) and Banking Reforms (BRF).

4.1.1. Descriptive Statistics

Table 4.1.1: Characteristics of the Variables

Variable	PAT	CAR	RR	MPR	BRF	BZ
Mean	29.9479	12.721	14.175	11.425	0.1	9.1043
Std. Dev	57.67191	32.87735	8.189709	2.838342	0.3015113	0.4137736
Min	-281.37	-198.56	1	6	0	8.18
Max	193.42	44	22.5	14	1	9.92

Source: Researcher's Work, 2021.

Interpretation

The statistical properties of the variables are highlighted in Table 4.1; and the emphasis here is on the mean, minimum, maximum and measures of dispersion of the variables involved in this study. The characteristics of Profit after tax (PAT) showed that the earnings of the companies are highly volatile with a standard deviation of 57.67 which measures the dispersion of the range of the figures from the mean. Also, the minimum value of -281.37 indicated that there are periods within the time frame when the companies reported huge losses as evidenced in the negative sign of the data. The maximum figure of 193.42 implies that the maximum return of

193.42% was generated by the companies within the time frame of this study but the average net profit is 29.95% which is extremely low.

The minimum and maximum values of Bank reforms (BFR) indicated a minimum of 0 and a maximum of 1, the maximum reforms show that bank reconstructions for improvement and reforms by CBN to improve the banking sector and allow for the strengthening of the banking sector. Looking at that of Reserve requirement (RR) with the minimum of 1% and a maximum of 22.5%, this shows the development that takes place in the banking sector as a result of reforms and laws regulated by CBN for the effectiveness of the sector for income generation. The minimum value of 1 is a result of the second banking reform to increase bank capitalization for a competitive edge with the international banking sector. Also, the minimum and maximum values of the Monetary policy rate (MPR) indicated a minimum of 6 and a maximum of 14, the maximum rate shows that bank reconstructions for improvement and reforms by CBN to improve the banking sector and allow for the strengthening of banking sector leading to borrowing and financial inclusion to SME's and firms. The Central Bank lowers its bank rate making it cheaper to borrow from them. The deposit money banks also lower their lending rate making it easy for businessmen to borrow money.

The characteristics of the Capital adequacy ratio (CAR) showed that the total capital of the companies is highly volatile with a standard deviation of 32.88 which measures the dispersion of the range of the figures from the mean. Also, the minimum value of -198.56 indicated that there are periods within the time frame when the companies reported negative capital as a result of accumulated losses as evidenced in the negative sign of the data. The maximum figure of 44 implies that the maximum total capital of 44% for total risk-weighted assets was generated by the companies within the time frame of this study but on average total capital is 12.71% which is extremely low.

4.2 Testing of Hypotheses

4.2.1 Testing of Hypothesis One

Research Objective 1: Examine the effect of capital adequacy ratio on shareholder return of listed money deposit banks in Nigeria.

Research Question 1: To what extent does the effect of capital adequacy ratio on shareholder return of listed money deposit banks in Nigeria?

Research Hypothesis: $H_0$1: Capital adequacy ratio does not significantly affect shareholder return of listed money deposit banks in Nigeria.

Table 4.2.1: Test of Hypothesis One (Random-effects GLS regression)

Variable	Coefficient	Drisc/Kraay Std. Error	z-Statistic	Prob.
CAR	0.1095358	0.0673813	1.63	0.138
Constant	28.5545	32.58872	0.88	0.404
Adjusted R-squared	0.0292			
Wald chi2(1)	2.64			
Prob > chi2	0.1040			
Diagnostic Tests	**Probability**			
Hausman Test	chi2(1) = 0.82 (0.3659)			
Breusch and Pagan Lagrangian multiplier test	Chibar2 (01) = 67.43 (0.0000)			
Heteroskedasticity Test	$chi^2_{(1)}$ = 0.89 (0.3459)			
Serial Auto-Correlation Test	F (1, 9) = 1.117 (0.3180)			
Pesaran's test of cross-sectional independence	F (1, 9) = 11.999 (0.0000)			

Source: Author's Work (2021)

Interpretation

Diagnostic Tests

The outcome of the Hausman test with the p-value of 0.3659, that is, 36.59 per cent which is greater than the 5 per cent degree of significance selected for the analysis shows that fixed effect is not the suitable estimator according to its null hypothesis which states that there is the presence of systemic variation in the model coefficients; hence, the study does deny the null hypothesis. The findings of the Breusch-Pagan Lagrangian multiplier test showed a p-value of 0.0000, which is less than the significance level of 5 per cent; this is an indicator that random effect is a successful estimator of the model, therefore; the analysis does deny the null hypothesis which means that random effect is the most effective estimator for the model.

The model was tested for heteroskedasticity. This research was carried out using the Breusch-Pagan/Cook-Weisberg test and the outcome of the heteroskedasticity with a p-value of 0.3459 which is greater than the 5 per cent level of significance chosen for the analysis is an indicator of the absence of heteroskedasticity; that is the residuals of the model are not stable over time, thus the study does consider the null hypothesis. The effect of Pesaran's test of cross-sectional independence with a p-value of 0.0000 which is less than 5 per cent level of significance chosen for the sample is an indicator of cross-sectional dependency presence in the results. The test firmly rejects the null hypothesis of no cross-sectional dependency at a 5 per cent level of significance. The correction of the standard errors can be achieved by the method suggested by

Driskoll and Kraay (1998) using Regression with Driscoll-Kraay standard errors for Random-effects GLS regression.

The autocorrelation problem allows the standard errors of the coefficient to be lower than their real value and the coefficient of decision (R-squared) to be higher than average. The null hypothesis of the test states that there is a serial correlation. The test was carried out using the Wooldridge test with a p-value of 0.3459 which is greater than the relevant amount of 5 per cent is an indicator that there is no serial correlation in the model. Therefore, the analysis does support the null hypothesis.

Conclusively, the diagnostic testing showed that there is an absence of heteroskedasticity and no serial association issues in the model. As a part of this; the fixed effects and pooled OLS will not be sufficient estimators for the model; random-effects GLS regression was used to estimate the effect.

Model 1

PAT = *f* (CAR)

$PAT_{jt} = \alpha_0 + \beta_1 CAR_{it} + \mu_1$

$PAT_{jt} = 28.5545 + 0.1095358 CAR_{it} + \mu_1$

Interpretation of Findings

The result of the regression analysis for the Capital Adequacy ratio in Table 4.2.1 shows that the capital adequacy ratio has a positive effect on shareholder's return measured by Profit after tax (PAT). This is indicated by the signs of the coefficients, that is $\beta_1 = 0.1095358 > 0$. This result is consistent with *a priori* expectation as it was expected that CAR will have a positive effect on PAT. The overall coefficient of determination of R^2 which is the explanatory power of the model is 0.0292. This implies that within the model context, the independence of capital adequacy ratio is responsible for 2.92% variations in profit after tax while the remaining 97.08% is explained by other factors that can impact the dependent variable not captured in this model. In addition, at the level of significance of 0.05, and t-statistics of 1.63, the *p-value* of 0.138, the null hypothesis one that capital adequacy ratio does not significantly affect shareholder return of listed money deposit banks in Nigeria is accepted. Therefore, from the regression estimates, the capital adequacy ratio does not significantly affect shareholder return of listed money deposit banks in Nigeria.

4.2.2 Testing of Hypothesis Two

Research Objective II: Determine the effect of reserve requirement on shareholder return of listed money deposit banks in Nigeria

Research Question II: What is the effect of reserve requirement on shareholder return of listed money deposit banks in Nigeria?

Research Hypothesis II: $H_0 2$: Reserve requirement does not significantly affect shareholder return of listed money deposit banks in Nigeria.

Table 4.2.2: Test of Hypothesis Two (Linear OLS)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RR	-0.0007512	0.0008388	-0.90	0.373
Constant	31.27091	5.958979	5.25	0.000
R-squared	0.0081			
Adjusted R-squared	-0.0020			
F-Statistics	$F_{(1, 98)} = 0.80$			
Prob (F-stats)	0.3727			
Diagnostic Tests	**Probability**			
Hausman Test	$chi2(_1) = 0.50$ (0.4813)			
Heteroskedasticity Test	$chi^2_{(1)} = 1.73$ (0.1880)			
Serial Auto-Correlation Test	$F_{(1, 9)} = 1.282$ (0.2868)			

Source: Author's Work (2021)

Interpretation

Diagnostic Tests

The results of the Hausman test with a p-value of 0.4813, 48.13% that is above the 5% significance for the analysis, show that, per its null hypothesis, the fixed effect is not the proper estimator, which states that the model coefficients are systemically differentiated, such that the null hypothesis is rejected. Heteroskedasticity was measured on the model. This research was done with Breusch-Pagan/Cook-Weisberg and, due to p-value heteroscedasticity of 0.1880 which exceeds the 5 per cent significant amount chosen for the analysis, it shows that the model residues are not constant over time and hence the null hypothesis is acceptable.

Serial correlation tests were also conducted to assess the autocorrelation between residuals and model coefficients. The null research hypothesis says a serial association exists. The test was performed using Wooldridge with a p-value of 0.2868, higher than the mean 5 per cent mark, which shows that the model has no serial correlation. The analysis accepts the null hypothesis accordingly. Finally, the diagnostic tests showed a lack of heteroscedasticity and no issue with the serial association of the model. This would not be the effective estimator of the model for fixed effects and random effects; pooled OLS regression was applied to estimate the effect.

Model 2

PAT = *f* (RR)

$PAT_{jt} = \alpha_0 + \beta_2 RR_{it} + \mu_2$

$PAT_{jt} = 31.27091 - 0.0007512 RR_{it} + \mu_2$

Interpretation of Findings

The result of the regression analysis for Reserve requirement in Table 4.2.2 shows that Reserve requirement has a negative effect on shareholder's return measured by Profit after tax (PAT). This is indicated by the signs of the coefficients, that is $\beta_2 = -0.0007512 > 0$. This result is inconsistent with *a priori* expectation as it was expected that RR will have a positive effect on PAT. The overall coefficient of determination of R^2 which is the explanatory power of the model is 0.0081. This implies that within the model context, the independence of reserve requirement is responsible for 0.8% variations in profit after tax while the remaining 99.2% is explained by other factors that can impact the dependent variable not captured in this model. In addition, at the level of significance of 0.05, and t-statistics of -0.90, the *p-value* of 0.373, the null hypothesis two that reserve requirement does not significantly affect shareholder return of listed money deposit banks in Nigeria is accepted. Therefore, from the regression estimates, reserve requirement does not significantly affect shareholder return of listed money deposit banks in Nigeria.

4.2.3 Testing of Hypothesis Three

Research Objective III: Examine the effect of monetary policy rate on shareholder return of listed money deposit banks in Nigeria

Research Question III: How does monetary policy rate affect shareholder return of listed money deposit banks in Nigeria?

Research Hypothesis III: $H_0$3: Monetary policy rate does not significantly affect shareholder return of listed money deposit banks in Nigeria.

Table 4.2.3: Test of Hypothesis Three (Linear OLS)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RR	6.400532	1.948023	3.29	0.001
Constant	-43.17818	22.92602	-1.88	0.063
R-squared	0.0992			
Adjusted R-squared	0.0900			
F-Statistics	$F_{(1, 98)} = 10.80$			
Prob (F-stats)	0.0014			

Diagnostic Tests	Probability
Hausman Test	$chi2_{(1)} = 1.00$ (-0.00)
Heteroskedasticity Test	$chi^2_{(1)} = 1.86$ (0.1721)
Serial Auto-Correlation Test	$F_{(1, 9)} = 1.736$ (0.2202)

Source: Author's Work (2021)

Interpretation

Diagnostic Tests

The outcome of the Hausman test is 0 per cent with a p-value of 0.00. The model that is fitted into the data set is not in keeping with Hausman's asymptotic assumptions. This leads to linear regression to measure the relation between the variables. Heteroskedasticity was measured on the model. This research was carried on the test of Breusch-Pagan/Cook-Weisberg and is an indicator that the model residuals are not stable in the course of the period, as a consequence of the heteroscedasticity with a p-value of 0.1721 that is greater than 5 per cent of the meaning for the sample chosen. Serial correlation tests were also conducted to assess the autocorrelation between residuals and model coefficients. The null research hypothesis says a serial association exists. The research was done using a Wooldridge test of 0.2202 p-value that is above the significant 5% range, showing no serial correlations in the model. The analysis accepts the zero hypothesis accordingly. Finally, the diagnostic tests showed a lack of heteroscedasticity and no issue with the serial association of the model. This would not be the effective estimator of the model for fixed effects and random effects; pooled OLS regression was applied to estimate the effect.

Model 3

$PAT = f(MPR)$

$PAT_{jt} = \alpha_0 + \beta_3 MPR_{it} + \mu_3$

$PAT_{jt} = -43.17818 + 6.400532 MPR_{it} + \mu_1$

Interpretation of Findings

The result of the regression analysis for the Monetary policy rate in Table 4.2.3 shows that the Monetary policy rate has a positive effect on shareholder's return measured by Profit after tax (PAT). This is indicated by the signs of the coefficients, that is $\beta_3 = 6.400532 > 0$. This result is consistent with *a priori* expectation as it was expected that MPR will have a positive effect on PAT. The overall coefficient of determination of R^2 which is the explanatory power of the model is 0.0992. This implies that within the model context, the independence of monetary policy rate is responsible for 9.9% variations in profit after tax while the remaining 90.1% is explained by other factors that can impact the dependent variable not captured in this model.

In addition, at the level of significance of 0.05, and t-statistics of 3.29, the *p-value* of 0.001, the null hypothesis three that monetary policy rate does not significantly affect shareholder return of listed money deposit banks in Nigeria is rejected. Therefore, from the regression estimates, the monetary policy rate significantly affects shareholder return of listed money deposit banks in Nigeria.

4.2.4 Testing of Hypothesis Four

Research Objective IV: Determine the effect of banking sector reform on shareholder return of listed money deposit banks in Nigeria.

Research Question IV: What is the effect of banking sector reform on shareholder return of listed money deposit banks in Nigeria?

Research Hypothesis IV: $H_0$4: Banking sector reform does not significantly affect shareholder return of listed money deposit banks in Nigeria.

Table 4.2.4: Test of Hypothesis Four (Random-effects GLS regression)

Variable	Coefficient	Drisc/Kraay Std. Error	z-Statistic	Prob.
BSR	-62.27544	7.826401	-7.96	0.000
Constant	36.17544	24.32719	1.49	0.171
Adjusted R-squared	0.1060			
Wald chi2(1)	63.32			
Prob > chi2	0.0000			
Diagnostic Tests	**Probability**			
Hausman Test	chi2($_1$) = 0.00 (1.0000)			
Breusch and Pagan Lagrangian multiplier test	Chibar2 ($_{01}$) = 102.95 (0.0000)			
Heteroskedasticity Test	$chi^2_{(1)}$ = 12.75 (0.0000)			
Serial Auto-Correlation Test	F $_{(1, 9)}$ = 0.539 (0.4816)			
Pesaran's test of cross-sectional independence	F $_{(1, 9)}$ = 5.559 (0.0000)			

Source: Author's Work (2021)

Interpretation

Diagnostic Tests

The results of the Hausman test with the p-value of 1.0000 (i.e., 100%, higher than the 5% meaning for the study) show that, following the zero hypothesis, the fixed effect is not the proper estimator, stating the existence of the systemic differences in model coefficients.

The findings of the Breusch Pagan Lagrangian multiplier test have a p-value of 0.0000, which is less than 5%. This indicates that a random effect is therefore a strong estimator of the formula, and the analysis would not accept the null hypothesis that a random effect is the model's most suitable estimator. Heteroskedasticity was measured on the model. The Breusch-Pagan/Cook-Weisberg test was used. The outcome of the *p*-value for heteroscedasticity of

0,0000, which is lower than 5%, is a symbol of heteroscedasticity. The model's residues are stable over time, and thus the test does not accept the null hypothesis.

The consequence of a cross-sectional independence test of Pesaran's with a p-value of 0.0000 that is less than one per cent, is an indicator of the cross-sectional dependency presence in the results. The test firmly opposes the zero hypothesis of 5% of importance for a cross-sectional dependency. The dataset contains cross-sectional dependency. By means of regression with Driscoll-Kraay Standard Errors (Random-Effects) GLS regression, the approach proposed by Driskoll and Kraay (1998) can correct the defects. Serial correlation tests were also conducted to assess the autocorrelation between residuals and model coefficients. The null research hypothesis says a serial association exists. The research was conducted using a p-value test Wooldridge, which is higher than 5 per cent, indicating that the model has no serial correlation. The analysis accepts the null hypothesis accordingly. The diagnostic tests show that heteroscedasticity and no serial association issues are present in the model. Consequently, the fixed effects and pooled OLS would not be suitable model estimators; The effect was estimated using random GLS regression.

Model 4

PAT = *f* (BSR)

$PAT_{jt} = \alpha_0 + \beta_4 BSR_{it} + \mu_4$

$PAT_{jt} = 36.17544 - 62.27544 BSR_{it} + \mu_4$

Interpretation of Findings

The result of the regression analysis for Banking reform in Table 4.2.4 shows that the banking reform ratio has a negative effect on shareholder's return measured by Profit after tax (PAT). This is indicated by the signs of the coefficients, that is $\beta_4 = -62.27544 > 0$. This result is inconsistent with *a priori* expectation as it was expected that BSR will have a positive effect on PAT. The overall coefficient of determination of R^2 which is the explanatory power of the model is 0.1060. This implies that within the model context, the independence of banking reform is responsible for 10.60% variations in profit after tax while the remaining 89.40% is explained by other factors that can impact the dependent variable not captured in this model. In addition, at the level of significance of 0.05, and t-statistics of -7.96, the *p-value* of 0.000, the null hypothesis four that banking reform does not significantly affect shareholder return of listed money deposit banks in Nigeria is rejected. Therefore, from the regression estimates,

banking reform significantly affects the shareholder return of listed money deposit banks in Nigeria.

4.2.5 Test of the Main Hypothesis

Main Hypothesis

Research Objective V: Determine the impact of regulatory shocks on shareholder return in financial institutes in Nigeria.

Research Question V: What is the impact of regulatory shocks on shareholder return in financial institutes in Nigeria?

Research Hypothesis V: $H_0$5: There is no significant impact between regulatory shocks and shareholder return in financial institutes in Nigeria.

Table 4.2.5: Test of the Main Hypothesis

	Random-effects GLS regression			
Variable	**Coeff**	**Drisc/Kraay Std.Err**	**z-test**	**Prob**
Constant	-18.245	16.241	-1.12	0.290
CAR	0.233	0.109	2.13	0.062
RRE	-0.0005	0.0002	-2.66	0.026
MPR	4.370	1.977	2.21	0.054
BSR	-38.15	8.709	-4.38	0.002
Adj. R^2	0.1715			
Wald chi2(4)	291.44			
Prob > chi2	0.0000			
Hausman Test	$chi^2_{(2)}$ = 0.35 (0.9503)			
Breusch & Pagan LM Test	$chi^2_{(1)}$ = 98.23 (0.0000)			
Heteroskedasticity Test	$chi^2_{(1)}$ = 5.32 (0.0210)			
Serial Auto-Correlation Test	$F_{(1, 9)}$ = 0.900 (0.3676)			
Pesaran's test	F = 5.115(0.0000)			

Source: Author's Work (2021)

Interpretation

Diagnostic Tests

The results of the Hausman tests for both models (p-value of 0.9503) as presented in Table 4.2.5 revealed the most appropriate estimator for the random effect yet, on the contrary, the results of the confirmatory tests conducted using the p-value of 0.0000 for Breusch-Pagan LM tests supporting the results of the Hausman test, which confirms that the random effect is the most suited;

The Breusch-Pagan/Cook-Weisberg test with a p-value value of 0.0210 showed that in the model, there is a heteroscedasticity problem; thus, there is no difference in the residuals of the model over the duration "t" in the first model. The outcome of the cross-sectional dependence test for Pesaran's for the model was an indicator of the existence of cross-sectional dependencies in the data with a p-value of 0.0000 which is a less than 5 per cent level of signification chosen for this analysis. The test denies firmly the zero hypothesis of 5% no cross-sectional dependency. The models have a transverse dependency. By means of regression with Driscoll-Kraay Standard Errors (Random-Effects) GLS regression, the method suggested by Driskoll and Kraay (1998) will correct the defects.

With the Wooldridge test for serial autoconnection as the unsafe relationship, the correlations between the model coefficients were checked, with the finding that error values were smaller than predicted and that the determination coefficient is higher than average. The numbers of μ-value of 0.3676 accepted the zero-hypothesis that there was no autocorrelation of the first order. This means that the series in the model have no autocorrelation problem.

Based on the results of the diagnostic tests carried out; Model Five are estimated using Regression with Driscoll-Kraay standard errors for Random-effects GLS regression.

$PAT_{it} = \beta_0 + \beta_1 CAR_{it} + \beta_2 MPR_{it} + \beta_3 RRR_{it} + \beta_4 BRF_{it} + e_i$ -

.....Model 5

$PAT_{it} = -38.151 + 0.233CAR_{it} + 4.370MPR_{it} - 0.0005RRR_{it} - 38.151BRF_{it}$

The results of the regression models for with and without control variable (Bank size) presented in Table 4.2.5 showed that Capital adequacy ratio (CAR) and Monetary policy rate (MPR) has an insignificant positive effect on Profit after tax of listed deposit money banks for both models while Reserve requirement (RRR) has a significant negative effect on Profit after tax of listed deposit money banks and Bank reform (BSF) has a significant negative effect on Profit after tax of listed deposit money banks. The probability of the F-statistics showed that regulatory shocks have a significant impact on shareholder return of financial institutions in Nigeria.

4.3 Discussion of Findings

4.3.1 Capital adequacy and Shareholder's return

The findings of this study showed that the capital adequacy ratio has a positive effect on shareholder's return measured by Profit after tax (PAT). The independence of capital adequacy ratio is responsible for 2.92% variations in profit after tax while the remaining 97.08% is explained by other factors that can impact the dependent variable not captured in this model.

The capital adequacy ratio does not significantly affect shareholder return of listed money deposit banks in Nigeria. The research sponsored the study performed in Ghana by Frank (2019) and Agu and Nwankwo (2019) in Nigeria, which showed negligible consequences between capital adequacy and tax benefit. The analysis by Igbinosa, Sunday (2017) and Akanji corroborated the above finding by analyzing Nigeria's performance in financial regulation and the banking sector and stated that the four-period capital adequacy delay is not statistically substantial for bank performance. Aymen (2013) research carried out in Tunisia and Owino and Kivoi (2016) in Kenya negates the conclusions by showing a statistically relevant association between capital and returns. In the case of the Nigerian Deposit Money Banks, Abba, Ene, Soje, and Lilian (2018) studied and contradicted the studying that CARs are primarily determined by banks' risk portfolio, deposit size, profitability and quality of assets, and that the CARs of Nigerian banks are well above the required regulatory minimum.

4.3.2 Reserve requirement and Shareholder′s return

The findings of this study stated that the Reserve requirement has a negative effect on shareholder′s return measured by Profit after tax (PAT). The independence of reserve requirement is responsible for 0.8% variations in profit after tax while the remaining 99.2% is explained by other factors that can impact the dependent variable not captured in this model. Reserve requirement does not significantly affect shareholder return of listed money deposit banks in Nigeria. The research supported the work carried out in Kenya and Dare in Oganda, Abuga and Simeyo (2018) and Isaac in Nigeria (2017), which found that the links between MPR and PAT were statistically negligibly important. In addition, the research conducted in Edem (2017) examined how cash balance ratios affect the performance of deposit money banks and the effects the liquidity control has on the performance of the bank. Aymen (2013) research carried out in Tunisia and Owino and Kivoi (2016) in Kenya negates the conclusions by showing a statistically relevant association between capital and returns. Isaac and Owate (2017) examined and refuted the analysis by arguing that the cash-reserve ratio and liquidity ratio are statistically sufficiently important to have a meaningful long-term effect on the return of shares on the shareholder funds. Fatima and Lodhi (2015) looked at the link between the reserve requirement ratio and bank profitability in Pakistan and denied the analysis by noting the substantial reverse association between the CRR used for reserve requirement and the financial performance of banks.

4.3.3 Monetary Policy rate and Shareholder's return

The findings of this study stated that the Monetary policy rate has a positive effect on shareholder's return measured by Profit after tax (PAT). The independence of monetary policy rate is responsible for 9.9% variations in profit after tax while the remaining 90.1% is explained by other factors that can impact the dependent variable not captured in this model. Monetary policy rate significantly affects shareholder return of listed money deposit banks in Nigeria. The research supported the study conducted in Vietnam by Nhan, Vu and Le (2017), as well as in Victor, Ozioma, Nze and Samuel (2017) in Nigeria which shows a good link between bank income and monetary policies. At the importance of 10 per cent, MPR had a major positive effect on bank earnings. In addition to this report Greg and Udude and Hope (2015), the above results have been reinforced by analyzing the impact of monetary policy on the efficiency of the banking sector in Nigeria. The analysis carried out in Tunisia by Ozili (2017) and Owino and Gekano (2018) carried out in Kenya negates the results by arguing that the association between monetary policy and returns is statistically important.

4.3.4 Banking sector reform and Shareholder's return

The findings of this study discovered that the banking reform ratio has a negative effect on shareholder's return measured by Profit after tax (PAT). The independence of banking reform is responsible for 10.60% variations in profit after tax while the remaining 89.40% is explained by other factors that can impact the dependent variable not captured in this model. Banking reform significantly affects shareholder return of listed money deposit banks in Nigeria. The study supported the study of Felicia (2013) conducted in Nigeria and Matthew (2017) conducted in Nigeria that stated that banking system reforms in Nigeria have a dual impact on the economy and banks' performance. The study of Emeka, Maryann and Priye (2016) also correlated the result above by examining the relationship between banking sector reforms and performance of Nigerian economy and stated that causality between banking sector reforms and performance of Nigerian economy. The study of Jegede (2014) and Ifeanyi and Isaac (2016) both conducted in Nigeria negates the findings by stating the relationship between banking reforms and returns had statistically insignificant.

4.3.5 Regulatory shocks and Shareholder's return

According to the report of this study, it was revealed that the Capital adequacy ratio (CAR) and Monetary policy rate has an insignificant positive effect on Profit after tax of listed deposit money banks. This corroborated the findings of Frank (2019) and Victor, Ozioma, Nze and

Samuel (2017) in the study conducted in Ghana who also reported an insignificant positive relationship between Capital adequacy ratio (CAR), Monetary policy rate and profit after tax. A similar result was reported by Agu and Nwankwo (2019) and Greg, Udude and Hope (2015) in the study carried out in Nigeria. Reserve requirement (RRR) has a significant negative effect on Profit after tax of listed deposit money banks and Bank reform (BSF) has a significant negative effect on Profit after tax of listed deposit money banks. This corroborated the findings of Isaac and Owate (2017) and Fatima and Lodhi (2015) in the study conducted in Nigeria who also reported that Reserve requirement (RRR) has a significant positive effect on Profit after tax of listed deposit money banks and Bank reform (BSF) has a significant positive effect on Profit after tax. A similar result was reported by Oganda, Abuga and Simeyo (2018) in the study carried out in Nigeria. The result of the analysis of this model showed that regulatory framework measured as Capital adequacy ratio (CAR), Monetary policy rate (MPR), Reserve requirement (RRR) and Bank reform (BSF) jointly but significantly impact on shareholder return of financial institutions in Nigeria; this aligned with the assertion of the study of Okon and Oladapo (2014) in Nigeria, Jegede (2014), Ifeanyi and Isaac (2016) which also reported similar results of significant effect of regulatory framework on shareholder's return. On the contrary, the report of this model contradicts the findings of Emeka, Maryann and Priye (2016); the study conducted in Nigeria by Matthew (2017), likewise, Adama and Apelete (2017) carried out in Nigeria.

4.4 Implication of Findings

The implications of the findings of this study are:

To the management: it is an eye-opener to the management of the sampled firms and other companies in related business that banking reform positively affects shareholder return by the firm. Management should keep the minimum reserve ratio with CBN to improve the banking sector and also CBN to help them in terms of liquidity.

To the government: the study exposes the threat that banking reform, monetary policy rate, capital adequacy and reserve requirement pose on the performance of the banks. The increase in capital adequacy and reserve requirement is a dilemma to the growth of deposit money banks because it reduces the incidence of liquidation and increases solvency. Government should find means of regulating the monetary policies in favour of the establishment, growth and survival of the banking sector.

To the regulators e.g., Central Bank of Nigeria: The positive though insignificant impact of Capital adequacy ratio and Monetary policy rate and a negative relationship between Reserve requirement and Banking reform is an indication of the effect of regulatory shocks of banks on shareholder return of their businesses. Central Bank of Nigeria should reduce reforms and structures made to banks and reserve requirements to allow banks to increase their performance through bank loans to SME's and financial inclusion leading to an increase in shareholder returns.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter deals with a summary of findings, conclusion, recommendations and suggestions for further studies.

5.1 Summary of Findings

The findings revealed that; For hypothesis one, it was discovered that capital adequacy ratio has a positive insignificant effect on shareholder return of listed money deposit banks in Nigeria. For hypothesis two, reserve requirement has a negative insignificant effect on shareholder return of listed money deposit banks in Nigeria. For hypothesis three, it was obtained that monetary policy rate significantly affects shareholder return of listed money deposit banks in Nigeria. For hypothesis four, banking reform significantly affects shareholder return of listed money deposit banks in Nigeria. For hypothesis five, the result of the regression analysis revealed that regulatory shocks have a significant impact on shareholder return of financial institutions in Nigeria.

5.2 Conclusion

The study concluded that regulatory shocks significantly affect shareholder return of listed financial institutions in Nigeria using Deposit money banks listed on the Nigerian Stock Exchange and that capital adequacy is the single most effective regulatory instrument to apply to banks, and affords the best outcomes both for investors in banking shares and for consumers

5.3 Recommendations

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

1. Government should find means of regulating the monetary policies in favour of the establishment, growth and survival of the banking sector.
2. Central Bank of Nigeria should reduce reforms and structures made to banks and reserve requirements to allow banks to increase their performance through bank loans to SME's and financial inclusion leading to an increase in shareholder returns.

3. Central Bank of Nigeria should increase the minimum capital adequacy ratio made for banks to allow banks to increase their solvency and also ensure that there is more for branch expansion thereby increasing shareholder's wealth.
4. Management should provide adequate capital and be readily available for any regulatory reforms to be carried out by CBN to reduce the negative effect, it does have on financial institutions and ensures that shareholders are catered for through an increase in dividend and allowing for future expansion.

5.4 Contributions to Knowledge

This study has made the following contribution to knowledge:

To policy: The study contributed the body of knowledge by bridging the major gap from previous researchers which is studying how regulatory shocks through capital adequacy, banking sector reforms, monetary policy rate, and reserve requirement and how it impacts shareholder return of listed financial institutions in Nigeria which has been rare in study.

To theory: This research has added to current literature by examining regulatory shock theories and how they influenced shareholder returns, including Financial Regulation Normative Theory, Organization Theory, and Regulation Theory of Public Interest. The study was based on a regulatory theory of financial regulation, which describes how banks deal with regulatory shocks and ensures that shareholder get their stock returns as needed.

To accounting practice: This study has given more knowledge on the determination of an optimal level of management judgment and discretion to ensure effective communication between managers and investors and to encourage regulatory policies improvement.

To the concept: The study contributed the body of knowledge studying the concepts and definition of regulatory shocks through capital adequacy, banking sector reforms, monetary policy rate and reserve requirement and how it impacts shareholder return measured by profit after tax.

To Literature: The study has contributed to literature by carrying out a study on regulatory shocks and shareholder' returns. The study also contributed the new body of findings that regulatory shocks significantly affect shareholder return of financial institutions in Nigeria using Deposit money banks listed.

To Research: The research helped to resolve the findings of the issue, current scientific observations, study ideas, principles, review results, guidelines, conclusions and proposals for further study.

5.5 Limitation of the Study

The scope of this study is the deposit money banks on the Nigerian Stock Exchange. The study made use of only ten deposit money banks and neglected other financial institutions like Mortgage, insurance companies and other commercial banks. The study was an empirical study, *ex-post-facto* in nature, made use of secondary sources of information obtained from published annual reports and accounts of the selected companies, thus only listed deposit money banks' record was accessible for the study.

5.6 Suggestions for Further Study

This study suggested further investigation of the relationship between the regulatory shocks and the returns of the shareholder to other financial institutions, including insurances firms and other commercial banks as well as the categories of the NSE market, which may be dependent on sector research. Additional research should widen the period covered by this study to more than ten (10) years.

APPENDIX

DATA

ID	YEAR	ROE	PAT	ROA	CAR	RRE	MPR	BSR
1	2009	-2.50	-4.19	-0.60	32.00	64.59	6.00	1.00
1	2010	6.44	11.24	1.40	26.00	25.40	6.25	0.00
1	2011	9.10	15.83	0.97	22.00	139.20	12.00	0.00
1	2012	19.25	44.89	2.57	23.00	109.11	12.00	0.00
1	2013	15.45	37.50	2.04	19.20	172.41	12.00	0.00
1	2014	15.69	42.98	2.04	18.40	249.95	13.00	0.00
1	2015	18.10	65.87	2.54	19.50	257.59	11.00	0.00
1	2016	15.94	71.44	2.05	20.77	250.83	14.00	0.00
1	2017	12.19	61.99	1.51	20.06	406.81	14.00	0.00
1	2018	19.68	94.98	1.92	20.78	579.24	14.00	0.00
2	2009	3.10	3.99	0.77	31.00	9.01	6.00	1.00
2	2010	5.89	7.93	1.47	30.30	13.41	6.25	0.00
2	2011	-8.42	-9.92	-1.65	26.19	34.93	12.00	0.00
2	2012	11.58	15.29	1.68	23.00	57.89	12.00	0.00
2	2013	11.13	16.00	1.59	18.00	73.47	12.00	0.00
2	2014	13.80	22.13	1.89	19.25	146.11	13.00	0.00
2	2015	2.93	4.76	0.41	16.88	125.55	11.00	0.00
2	2016	8.02	14.34	1.22	16.54	139.46	14.00	0.00
2	2017	4.60	8.61	0.73	16.88	109.64	14.00	0.00
2	2018	8.17	14.97	1.05	14.17	146.50	14.00	0.00
3	2009	1.34	1.75	0.40	40.50	8.33	6.00	1.00
3	2010	4.39	5.97	1.24	44.00	25.51	6.25	0.00
3	2011	1.77	2.58	0.35	30.00	82.27	12.00	0.00
3	2012	1.13	1.82	0.20	29.00	117.29	12.00	0.00
3	2013	4.72	7.72	0.71	21.77	207.83	12.00	0.00
3	2014	7.97	13.80	1.16	24.21	258.13	13.00	0.00
3	2015	7.58	13.90	1.13	19.00	185.33	11.00	0.00
3	2016	5.25	9.73	0.75	17.00	207.06	14.00	0.00
3	2017	8.82	17.77	1.29	16.03	269.63	14.00	0.00
3	2018	11.79	22.93	1.33	16.65	384.93	14.00	0.00
4	2009	14.81	28.60	2.65	23.52	255.94	6.00	1.00
4	2010	18.35	39.32	3.37	23.24	273.07	6.25	0.00
4	2011	22.65	51.74	3.22	20.70	368.28	12.00	0.00
4	2012	30.94	87.30	5.03	24.20	322.99	12.00	0.00
4	2013	35.56	116.39	5.53	23.91	148.59	12.00	0.00
4	2014	26.77	98.69	4.19	21.40	261.01	13.00	0.00
4	2015	24.42	99.44	3.94	18.17	276.46	11.00	0.00
4	2016	26.20	132.28	4.24	19.79	327.10	14.00	0.00
4	2017	27.27	170.47	5.09	25.68	373.49	14.00	0.00

4	2018	32.79	184.64	5.62	23.39	414.67	14.00	0.00
5	2009	-42.80	-9.02	-0.42	12.00	8.57	6.00	1.00
5	2010	19.31	5.04	0.19	12.00	6.66	6.25	0.00
5	2011	16.83	6.91	0.14	17.00	36.81	12.00	0.00
5	2012	14.91	6.95	0.12	15.00	63.62	12.00	0.00
5	2013	13.04	8.27	0.12	14.00	96.90	12.00	0.00
5	2014	10.63	9.00	0.11	14.00	174.76	13.00	0.00
5	2015	10.77	10.29	0.13	17.49	115.92	11.00	0.00
5	2016	6.03	5.16	0.62	11.16	107.86	14.00	0.00
5	2017	7.89	8.02	0.75	12.21	122.63	14.00	0.00
5	2018	9.43	9.22	0.84	12.86	137.69	14.00	0.00
6	2009	1.29	2.38	0.15	17.00	68.23	6.00	1.00
6	2010	0.34	0.60	0.04	18.20	68.06	6.25	0.00
6	2011	-5.74	-8.67	-0.45	21.70	81.79	12.00	0.00
6	2012	28.45	54.77	2.41	23.50	119.70	12.00	0.00
6	2013	20.47	46.60	1.76	21.90	246.26	12.00	0.00
6	2014	18.43	47.91	1.73	16.00	310.71	13.00	0.00
6	2015	18.31	59.65	2.17	20.00	276.67	11.00	0.00
6	2016	16.62	72.26	2.06	20.00	376.69	14.00	0.00
6	2017	15.37	78.59	1.93	22.00	445.24	14.00	0.00
6	2018	15.64	78.61	1.61	24.00	563.68	14.00	0.00
7	2009	118.06	-281.37	-24.24	-13.04	86.85	6.00	1.00
7	2010	-91.95	106.47	5.91	-9.51	24.44	6.25	0.00
7	2011	-48.74	-91.14	-8.70	20.79	51.32	12.00	0.00
7	2012	3.93	7.62	0.71	20.00	55.12	12.00	0.00
7	2013	2.00	3.84	0.38	24.80	72.97	12.00	0.00
7	2014	12.37	26.83	2.66	16.39	113.38	13.00	0.00
7	2015	6.12	14.30	1.43	15.90	127.61	11.00	0.00
7	2016	6.13	15.40	1.37	13.30	154.95	14.00	0.00
7	2017	3.85	13.01	0.89	11.50	251.29	14.00	0.00
7	2018	8.25	18.09	1.24	16.40	281.87	14.00	0.00
8	2009	-23.31	-16.11	-6.25	-12.36	2037.07	6.00	1.00
8	2010	28.33	12.44	4.07	10.85	2295.72	6.25	0.00
8	2011	6.15	2.69	0.72	12.01	6812.01	12.00	0.00
8	2012	12.01	6.18	1.56	13.35	36832.86	12.00	0.00
8	2013	-80.04	-22.58	-5.59	-13.80	9710.93	12.00	0.00
8	2014	14.02	10.69	2.59	2.02	6814.22	13.00	0.00
8	2015	5.68	4.69	1.06	-21.46	27587.48	11.00	0.00
8	2016	2.63	2.18	0.44	-46.98	51129.06	14.00	0.00
8	2017	6.16	-14.92	-9.53	-198.07	5675.46	14.00	0.00
8	2018	-5.21	12.69	5.38	-198.56	8860.99	14.00	0.00
9	2009	16.74	-7.53	-4.99	30.32	6.35	6.00	1.00
9	2010	106.64	17.46	8.04	43.83	6.57	6.25	0.00
9	2011	-67.47	-4.23	-1.91	-13.00	10.82	12.00	0.00

9	2012	-394.32	-5.04	-2.05	-16.00	20.51	12.00	0.00
9	2013	20.47	4.66	1.76	27.00	25.67	12.00	0.00
9	2014	18.43	4.79	1.73	18.22	70.06	13.00	0.00
9	2015	4.93	2.27	0.57	15.09	53.39	11.00	0.00
9	2016	5.28	2.56	0.60	11.07	27.62	14.00	0.00
9	2017	4.55	2.26	0.58	14.32	26.50	14.00	0.00
9	2018	6.54	3.33	0.68	18.01	58.05	14.00	0.00
10	2009	6.11	20.50	1.23	20.00	126.78	6.00	1.00
10	2010	10.33	37.33	1.97	16.50	141.72	6.25	0.00
10	2011	11.71	45.85	1.97	18.90	223.19	12.00	0.00
10	2012	21.35	98.13	3.77	30.00	332.52	12.00	0.00
10	2013	18.87	95.32	3.03	31.00	603.85	12.00	0.00
10	2014	18.01	99.46	2.65	13.90	752.58	13.00	0.00
10	2015	17.80	105.66	2.64	15.91	761.56	11.00	0.00
10	2016	18.43	129.65	2.74	19.70	669.06	14.00	0.00
10	2017	21.69	177.93	3.18	18.70	957.66	14.00	0.00
10	2018	23.76	193.42	3.25	17.00	954.42	14.00	0.00

ACCESS
FCMB
FIDELITY
GTBANK
STERLING
UBA
UNION
UNITY
WEMA
ZENITH

```
------------------------------------------------------------------------------------------------------------------------
------------------
      name:  <unnamed>
       log:  C:\Users\Desktop\JOLOMI.log
  log type:  text
 opened on:   1 May 2021, 21:15:34

. xtset id year
       panel variable:  id (strongly balanced)
        time variable:  year, 2009 to 2018
                delta:  1 unit



. su

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
          id |       100         5.5    2.886751         1         10
        year |       100      2013.5    2.886751      2009       2018
         pat |       100     29.9479    57.67191   -281.37     193.42
         roa |       100      1.0059    3.613128    -24.24       8.04
-------------+--------------------------------------------------------
         car |       100      12.721    32.87735   -198.56         44
         rre |       100    1761.119     6916.92      6.35   51129.06
         mpr |       100      11.425    2.838342         6         14
         bsr |       100          .1    .3015113         0          1


. hausman fixed random

                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |    fixed        random       Difference          S.E.
-------------+------------------------------------------------------------
         car |    .0711969     .1095358       -.0383388        .0424052
------------------------------------------------------------------------------
                      b = consistent under Ho and Ha; obtained from xtreg
           B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(1) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =        0.82
                Prob>chi2 =      0.3659

. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects
```

pat[id,t] = Xb + u[id] + e[id,t]

Estimated results:

| Var sd = sqrt(Var)
---------+----------
pat | 3326.05 57.67191
e | 1941.274 44.05989
u | 1520.482 38.99335

Test: Var(u) = 0
chibar2(01) = 67.43
Prob > chibar2 = 0.0000

. xtserial pat car

Wooldridge test for autocorrelation in panel data
H0: no first order autocorrelation
F(1, 9) = 1.117
Prob > F = 0.3180

. xtcsd, pesaran abs

Pesaran's test of cross sectional independence = 11.999, Pr = 0.0000

The average absolute value of the off-diagonal elements = 0.566

. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of pat

chi2(1) = 0.89
Prob > chi2 = 0.3459

. xtscc pat car, re

Regression with Driscoll-Kraay standard errors Number of obs = 100
Method: Random-effects GLS regression Number of groups = 10
Group variable (i): id Wald chi2(1) = 2.64
maximum lag: 2 Prob > chi2 = 0.1040
corr(u_i, Xb) = 0 (assumed) overall R-squared = 0.0292

| Drisc/Kraay
pat | Coef. Std. Err. t P>|t| [95% Conf. Interval]
---------+----------
car | .1095358 .0673813 1.63 0.138 -.0428912 .2619628
_cons | 28.5545 32.58872 0.88 0.404 -45.16631 102.2753

```
-------------+----------------------------------------------------------------
    sigma_u |  38.993352
    sigma_e |  44.059892
        rho |  .43922267   (fraction of variance due to u_i)
------------------------------------------------------------------------------

. hausman fixed random

                ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |     fixed        random       Difference          S.E.
-------------+----------------------------------------------------------------
         rre |    .0002617     .0000805        .0001812        .0002573
------------------------------------------------------------------------------
                       b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(1) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =        0.50
                Prob>chi2 =      0.4813

. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of pat

         chi2(1)      =     1.73
         Prob > chi2  =   0.1880

. xtserial pat rre

Wooldridge test for autocorrelation in panel data
H0: no first order autocorrelation
    F(  1,       9) =      1.282
           Prob > F =      0.2868

. reg pat rre

      Source |       SS       df       MS              Number of obs =     100
-------------+------------------------------           F(  1,    98) =    0.80
       Model |  2673.07038     1  2673.07038           Prob > F      =  0.3727
    Residual |  326605.832    98  3332.71257           R-squared     =  0.0081
-------------+------------------------------           Adj R-squared = -0.0020
       Total |  329278.902    99  3326.04952           Root MSE      =   57.73

------------------------------------------------------------------------------
         pat |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
```

```
-------------+----------------------------------------------------------------
         rre |  -.0007512   .0008388    -0.90   0.373    -.0024158    .0009134
       _cons |   31.27091   5.958979     5.25   0.000     19.44551    43.09631
------------------------------------------------------------------------------

. hausman fixed random

                ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |     fixed        random       Difference          S.E.
-------------+----------------------------------------------------------------
         mpr |    6.400532     6.400532       -1.60e-14             .
------------------------------------------------------------------------------
                          b = consistent under Ho and Ha; obtained from xtreg
           B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(1) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =    -0.00    chi2<0 ==> model fitted on these
                                       data fails to meet the asymptotic
                                       assumptions of the Hausman test;
                                       see suest for a generalized test

. hausman fixed random, sigmamor

                ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |     fixed        random       Difference          S.E.
-------------+----------------------------------------------------------------
         mpr |    6.400532     6.400532       -1.60e-14             .
------------------------------------------------------------------------------
                          b = consistent under Ho and Ha; obtained from xtreg
           B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(1) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =    -0.00    chi2<0 ==> model fitted on these
                                       data fails to meet the asymptotic
                                       assumptions of the Hausman test;
                                       see suest for a generalized test

. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of pat

         chi2(1)      =     1.86
```

```
        Prob > chi2  =   0.1721

. xtserial pat mpr

Wooldridge test for autocorrelation in panel data
H0: no first order autocorrelation
   F(  1,       9) =      1.736
         Prob > F =      0.2202

. reg pat mpr

     Source |       SS       df       MS              Number of obs =     100
------------+------------------------------           F(  1,    98) =   10.80
      Model |  32673.5899     1  32673.5899           Prob > F      =  0.0014
   Residual |  296605.313    98  3026.58482           R-squared     =  0.0992
------------+------------------------------           Adj R-squared =  0.0900
      Total |  329278.902    99  3326.04952           Root MSE      =  55.014

------------------------------------------------------------------------------
        pat |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
------------+----------------------------------------------------------------
        mpr |   6.400532   1.948023     3.29   0.001     2.534744    10.26632
      _cons |  -43.17818   22.92602    -1.88   0.063    -88.67413    2.317772
------------------------------------------------------------------------------

. hausman fixed random

                ---- Coefficients ----
          |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
          |     fixed        random       Difference          S.E.
----------+------------------------------------------------------------------
        bsr |   -62.27544    -62.27544       -1.92e-13        7.15e-07
------------------------------------------------------------------------------
                     b = consistent under Ho and Ha; obtained from xtreg
          B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                chi2(1) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                        =        0.00
              Prob>chi2 =      1.0000

. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

        pat[id,t] = Xb + u[id] + e[id,t]

        Estimated results:
                          |       Var     sd = sqrt(Var)
```

```
---------+----------------------------
     pat |    3326.05       57.67191
       e |   1552.959       39.40759
       u |   1579.832        39.7471

Test:   Var(u) = 0
                  chibar2(01) =   102.95
               Prob > chibar2 =   0.0000

. xtserial pat bsr

Wooldridge test for autocorrelation in panel data
H0: no first order autocorrelation
   F(  1,       9) =      0.539
         Prob > F =      0.4816

. xtscd, pesaran abs
unrecognized command:  xtscd
r(199);

. xtcsd, pesaran abs


Pesaran's test of cross sectional independence =     5.559, Pr = 0.0000

The average absolute value of the off-diagonal elements =     0.469

. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
        Ho: Constant variance
        Variables: fitted values of pat

        chi2(1)      =    12.75
        Prob > chi2  =   0.0004

. xtscc pat bsr, re

Regression with Driscoll-Kraay standard errors   Number of obs     =       100
Method: Random-effects GLS regression            Number of groups  =        10
Group variable (i): id                           Wald chi2(1)      =     63.32
maximum lag: 2                                   Prob > chi2       =    0.0000
corr(u_i, Xb) = 0 (assumed)                         overall R-squared =    0.1060

------------------------------------------------------------------------------
             |               Drisc/Kraay
         pat |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         bsr |  -62.27544   7.826401    -7.96   0.000    -79.97999   -44.57089
       _cons |   36.17544   24.32719     1.49   0.171    -18.85649    91.20738
```

```
-------------+----------------------------------------------------------------
    sigma_u |  39.747102
    sigma_e |  39.407595
        rho |  .50428908   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

. hausman fixed random

Note: the rank of the differenced variance matrix (3) does not equal the number of coefficients being tested (4); be sure this is what you expect, or there may be problems computing the test. Examine the output of your estimators for anything unexpected and possibly consider scaling your variables so that the coefficients are on a similar scale.

```
                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |     fixed        random       Difference          S.E.
-------------+----------------------------------------------------------------
         car |    .2081575     .2327005       -.0245431        .0401269
         rre |   -.0004332    -.0004976        .0000644        .0002374
         mpr |     4.29307     4.369706       -.0766361              .
         bsr |   -38.35949    -38.15101       -.2084729              .
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =        0.35
                Prob>chi2 =      0.9503
                (V_b-V_B is not positive definite)
```

. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

pat[id,t] = Xb + u[id] + e[id,t]

Estimated results:

```
                 |       Var     sd = sqrt(Var)
         ---------+-----------------------------
             pat |    3326.05       57.67191
               e |   1499.836       38.72772
               u |   1263.557       35.54654
```

Test: Var(u) = 0

```
                        chibar2(01) =    98.23
                     Prob > chibar2 =    0.0000
```

```
. xtserial pat car rre mpr bsr

Wooldridge test for autocorrelation in panel data
H0: no first order autocorrelation
   F(  1,       9) =      0.900
         Prob > F =      0.3676

. xtcsd, pesaran abs


Pesaran's test of cross sectional independence =     5.115, Pr = 0.0000

The average absolute value of the off-diagonal elements =     0.442

. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
        Ho: Constant variance
        Variables: fitted values of pat

        chi2(1)      =     5.32
        Prob > chi2  =   0.0210

. xtscc pat car rre mpr bsr, re

Regression with Driscoll-Kraay standard errors   Number of obs     =       100
Method: Random-effects GLS regression            Number of groups  =        10
Group variable (i): id                           Wald chi2(4)      =    291.44
maximum lag: 2                                   Prob > chi2       =    0.0000
corr(u_i, Xb) = 0 (assumed)                      overall R-squared =    0.1715

------------------------------------------------------------------------------
             |               Drisc/Kraay
         pat |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         car |   .2327005    .109073     2.13   0.062    -.0140397    .4794407
         rre |  -.0004976   .0001867    -2.66   0.026      -.00092   -.0000752
         mpr |   4.369706   1.977092     2.21   0.054    -.1027877      8.8422
         bsr |  -38.15101   8.709064    -4.38   0.002    -57.85228   -18.44974
       _cons |  -18.24477   16.24061    -1.12   0.290    -54.98357    18.49403
-------------+----------------------------------------------------------------
     sigma_u |  35.546542
     sigma_e |  38.727717
         rho |  .45724832   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

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