**Academic Journal of Accounting and Business Management**
Vol.3, No.3; July-September-2022;
ISSN (6449 –7017);
p –ISSN 3911 -5688

# FINANCIAL SUSTAINABILITY AND STOCK PRICES OF DEPOSIT MONEY BANKS IN NIGERIA

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**Abstract:** This study was carried out to examine the relationship between financial sustainability and stock market prices of listed Deposit Money Banks in Nigeria. The study, anchored on the Theory of Profit, adopted the correlational and longitudinal research approach. The population of the study consisted of all DMBs in Nigeria. Panel data were collected from annual report of sampled DMBs and analysed using descriptive statistics and multivariate regression. The study adopted three independent variables as measures of financial sustainability namely: capital adequacy, operational efficiency and long-term liabilities. Findings of the study showed that capital adequacy has a significant positive relationship with stock market prices of listed DMBs in Nigeria. The study also finds a positive but not significant relationship of operational efficiency and long-term liquidity with stock market prices of listed DMBs in Nigeria and concludes that corporate financial sustainability enhances the stock market prices of listed Deposit Money Banks in Nigeria. The study therefore recommends amongst others that listed DMBs should establish capital adequacy measures that clearly outline the management's view of organization priorities on financial sustainability.

**Keywords**: Financial sustainability, Long-term Liability, Capital Adequacy, Operational Efficiency, Stock Market Prices

## 1. Introduction

Corporate Sustainability which comprises three dimensions: social, environmental and economic, has attracted research interest in recent times. Financial sustainability which is the economic aspect of corporate sustainability is concerned with the principle of maximizing shareholders' value by implementing the best possible investment projects with the minimum possible risk factor (Akporien, Otuya & Archibong, 2022; Zabolotnyy & Wasilewski, 2019). Financial sustainability helps the companies which are trying to cope up with the ups and down of economic development and organizational resources in the long term. Lagoarde-Segot and Paranque (2018) defines financial sustainability of a firm as the potential to provide continuity of activities and to create value for owners in the long term, using optimal combination of investment and sources of financing. It provides for the going concern principle of accounting and value maximization for stakeholders, developing a win-win situation for the firm and all the stakeholders.

The growing spillover effects of the rapid growth of industrial economies is gaining attention to the issue of financial sustainability. across the world. The implementation of the principles of financial sustainability, has enabled corporate managers and policy-makers to brace up to modern tasks of long-term corporate growth and resource management (Diantimala, 2018; Otuya & Akpyibo, 2022). Corproate investors are now seeing issues differently beyond the conventional financial scrutiny when making decisions on where, what, how and when to invest their own money. According to UN World Commission on Environment and Development (2019), sustainable financing is designed at assisting society in

meeting its needs better today and also making it possible future generations to meet their needs.

Financial sustainability as a concept has been decomposed into a number of variants in the literature. For instance, Ofeimun and Akpotor (2020) contend that adequate capital is required to maintain public confidence to absorb unanticipated or unusual losses not absorbed by normal earnings. Banks need adequate capital to be able to attract additional funds in the market and to assuage the confidence of depositors, the regulators and the general public at large on their ability to discharge their obligations. Operational efficiency has also been described by Imhanzenobe (2020) as an important factor that must be considered in determination of financial sustainability of banks in Nigeria. The argument hinges on the premise that for a long-term survival of the bank to be guaranteed, they need to be making adequate profit to cover their operational cost. However, Schafer and Fukasawa (2011) posit that corporate organisations can only maintain a certain level of profitability if the resources of the firm are efficiently harnessed. In broad terms therefore, operational efficiency is crucial for the overall financial well-being of the firm to ensure the going concern capability.

Liquidity is as important as profitability in examination of the financial sustainability of a bank. This is because a bank needs liquidity to satisfy its customers demand deposit, meet operational obligations, pay dividend to shareholders and ultimately satisfy many of its other stakeholders such as creditors, investors, lenders etc. Wang et al. (2007) emphasize that liquidity as a determinant of the financial health of firms. Managers establish credit and cash management policies that control the level of liquidity so as to maintain an adequate level of cash to avoid credit risk and for other precautionary reasons.

Egboro (2016) contends that the business environment in Nigeria seems to be focused on a commercial idea that underlines short-term profit-maximasation and satisfactions of immediate demands. Financial sustainability, as a concept, necessitates that corporate organisation deploy some financial regulatory procedures that promote long-term performance and reduce financial risk. Adeyemi (2011) assets that financial sustainability is a necessary condition for any organisation to achieve its mission and vision from a going concern perspective. PricewaterhouseCoopers (2016) maintains that a managerial approach to the financial sustainability of a company derives from the principle of value maximization for shareholders at an acceptable level of risk, using the best combination of investments and available sources of financing.

Sustainability issues have attracted global attention over the past few decades. Companies now lay emphasis on long term sustainable strategies in addition to short term goals so as to ensure the long-term survival and going concern intricacies (Song, Zhao, & Zeng, 2017). Financial sustainability as a concept has been associated with several terms such as financial health, long-term financial survival, financial longevity, etc. Although the existing literature displays mixed findings as regards financial sustainability effect on a firm (Lopez, Garcia, & Rodriguez, 2007; Chan, 2010; Barnett & Salomon, 2012; Keskin, Grewatsch & Kleindienst, 2017; Dincer, & Dincer, 2020), there are differences with respect to firms, sectors, countries and regions. There is also the lack of uniformity in measure of financial sustainability. Some prior studies have used long term returns (Gardini & Grossi, 2018), liquidity ratios (Arora, Kumar, & Verma, 2018), operational efficiency (Oyewale & Adewale, 2014; Otuya & Omoye, 2021) and long-term solvency (Zorn, Esteves, Baur, & Lips, 2018). Each of the above measures have been used by some authors (HurYagba, Okeji & Ayuba, 2015; Okoye, Erin, Ado & Areghan, 2017). This study makes a clear departure from the previous study by adopting two key financial sustainability indicators that have been rarely used in the literature particularly in the Nigerian banking context. The introduction of capital adequacy and sustainable growth ratio is considered a gap, in that it gives a more encompassing measure of financial sustainability. Besides,

to the best of our knowledge, no study has been carried out on the link between financial sustainability and stock prices of DMBs in Nigeria. This is another gap that this study intends to fill.

**Objectives of the Study**

The broad objective of the study is to examine the relationship between financial sustainability and stock prices of Deposit Money Banks in Nigeria. The specific objectives are to:

(i) Examine the relationship between capital adequacy and stock market prices;
(ii) Ascertain the relationship between operational efficiency and stock market prices; and
(iii) Examine the relationship between long term liquidity and stock prices

## 2. Literature Review

### 2.1 Financial Sustainability

Sustainability is used to describe the capacity of a corporate organization to maintain its status over a long period (Bowman, 2011; Otuya, Akporien, & Ofeimun, 2019). Abdelkarim (2002) defines financial sustainability as the ability of an organization to develop and maintain a varied resource base for a long period that would satisfy its stakeholders' interest in the long term. According to a study by PricewaterhouseCoopers (2016), financial sustainability relates to the capacity of financial managers to monitor and control the expected financial benchmarks as well as financial risks over the long term. Jones and Walker (2007) sees financial sustainability of ability of a firm to avoid financial distress or prevent a situation where the firm is unable to finance operations at previously existing levels. Studies such as (Carmeli, 2008; Wang, Dennis, & Tu, 2007) view financial sustainability as the capacity of companies to pay back their debt obligations on time.

Gardini and Grossi (2018) contend however, that the concept of financial sustainability is broader than just liquidity or short-term profitability of the firm. It incorporates long-term returns, growth potential and ability to withstand financial distress. Gardini and Grossi maintain that the financial sustainability of companies can be found in the answer to the following questions; is the company making enough profits to cover its cost and be in business? What are the growth prospects of the company? Is the company operating at an acceptable financial risk level? Enekwe, Okwo, and Ordu (2013) see financial sustainability as the capacity of a company to cover both its operational and financial obligations as well as mitigate financial risk while retaining sufficient part of earnings to finance expansion.

### 2.2 Capital Adequacy

Adequate capital is a financial condition of a company that assures enough capital to absorb all potential losses and assets of the bank with enough excess for the present and imminent expansion. Ofeimun and Akpotor (2020) explain that capital adequacy is essential so as to sustain public confidence and to mitigate unexpected losses that cannot be covered by normal earnings. Bank's capital adequacy is necessary so that the bank can attract extra funds in the capital market and to promote depositors' confidence on bank's ability to meet the exigencies and debt obligations. In the view of Onoh (2002), a bank capital is considered adequate if it can cover the bank's operational expenses and satisfy customers varying financial needs through protection of depositors against partial or total loss of deposits in the event of the liquidation of the bank.

Capital adequacy is considered very crucial in any business concern as it is an indication which spurs business exertion, firm value and ultimately the financial sustainability (Olalekun & Adeyinka, 2013). In view of this, Nigerian banks are mandated by the CBN to maintain a higher capital level that is proportionate to their risk profiles. According to Eyo and Amenawo (2015) the essence of bank capital adequacy is to guarantee that banks possess satisfactory capital to meet obligations and cover financial, operating and reputational losses. To further buttress the important concept of capital adequacy for Nigerian banks, the CBN further requires all banks to

release their credit ratings from reputable credit rating organisations from time to time as a pointer to the financial health of banks and this must be incorporated in banks financial reports (CBN 2010). Capital adequacy therefore represents a foremost component determining the financial sustainability of a corporate organization especially the banking sector. In this study, capital adequacy is measured as a proportion of total number of equity against the reported shareholders fund at the end of a bank's financial accounting period.

**2.3 Operational Efficiency**

Operational efficiency is defined by Schafer and Fukasawa (2011) as a ratio which indicates the extent to which a corporate organisation is able to cover operational expenses using income generated during a given period of time. Operational expenditure includes administration costs, financing costs, wages and other costs incurred to manage operational activities of the company. (Aveh, Krah, & Dadzie, 2013). In adopting operational efficiency as a measure of financial sustainability, Aveh, Krah, and Dadzie (2013) contend that a higher the ratio, gives an indication of a better operational efficiency and the ability of a firm to be financially sustainable. Drucker (1963) stresses that efficiency is more associated with how profit is achieved than how much profit is achieved. Bodie, Kane, and Marcus (2013) emphasizes operational efficiency as a measure of financial sustainability dictates that "you do more of what is good, and less of what is bad". A key gauge of management effectiveness is in the use of its assets thus operational efficiency is adequately captured in the asset turnover ratio. This ratio measures the percentage of revenue generated from each naira of assets. The asset turnover gives a more encompassing measure of efficiency than other short-term efficiency measures (e.g. operating expense ratio). The ratio tests the productivity of capital investment expenditure by measuring the capacity actualization of the company in terms of the level of productivity in relation to asset usage.

Operational efficiency capture haw best an entity is able to utilize the scarce resources at its disposal to generate revenue hence the concept of operational efficiency is measured in this study as the total value of assets as a percentage of total turnover for the accounting period.

**2.4 Long-term Liquidity**

A company's long-term liquidity is the capacity to redeem its immediate obligations both on the short and long term. The liquidity of a company can be captured by the working capital management techniques adopted. Liquidity as a measure of financial sustainability is important because a profit may be making profit but faces risk of bankruptcy if it lacks cash to discharge its immediate debt obligations. In view of this, Wang et al. (2007) suggested liquidity as a determinant of the financial health of firms. Managers establish credit and cash management policies that control the level of liquidity so as to maintain an adequate level of cash to avoid credit risk and for other precautionary reasons.

The first model for predicting financial distress was developed by Edward Altman (Altman, 1968). The index which is commonly called Altman Z-score uses five crucial ratios and a model to predict the financial sustainability index for public companies. It expresses financial sustainability in absolute numbers. A low Z-score signifies a low financial sustainability and vice versa. The Altman Z-score model measures financial distress in an indirect manner (i.e. the lower the Z-score, the higher the risk of bankruptcy). If the Z-Score is less than 3, potential investors ought to do critical due diligence before investing in such a firm. This model was arrived at from a combination of financial ratios combined with a regression coefficient and has been widely used to predict financial sustainability and as a guide to a financial turnaround for both financial and non-financial organisations with a reasonable level of accuracy (Altman, IwaniczDrozdowska, Laitinen, & Suvas, 2014).

Deposit Money Banks receive deposits from their teeming customers. They also give out loans and advances to

**Academic Journal of Accounting and Business Management**
Vol.3, No.3; July-September-2022;
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individuals and corporate bodies with interest charges. The liquidity of the firm is paramount in maintaining the nexus between money received from depositors and loans granted to customers. To maintain long term liquidity position, a banks must strike a balance between deposit received and loans granted hence this study measure long term liquidity of the DMBs as total loan and advances as a proportion of total customers' deposit.

This theory is considered suitable for this study because financial practices of corporate managers of Deposit Money Banks in Nigeria are related to how adequate the capital is able to cover customers deposits, the efficiency of operations such that profits can be made both on the short run and long run as well as sustainable growth indices which are used to identify financial sustainability.

**2.5 Theoretical Review: Rent Theory of Profit**

Based on the above theoretical framework and the hypotheses, the following conceptual model can be proposed:

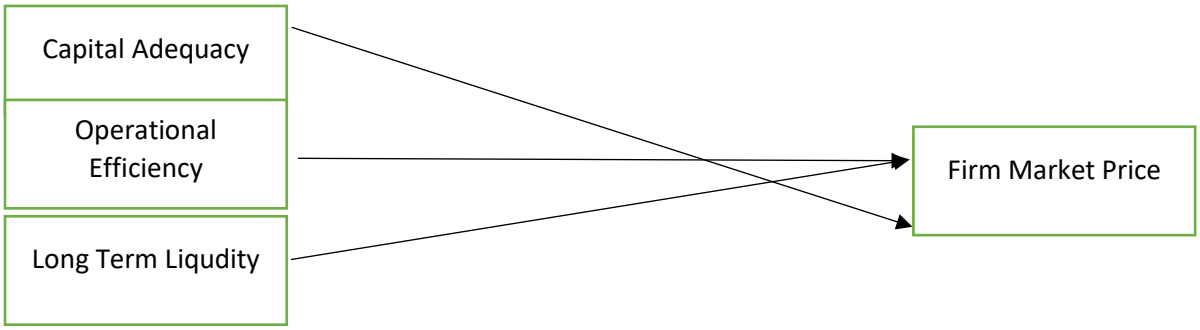


Figure 1: Theoretical Framework
Source: Author (2022)

The above framework conceptualizes graphically the interaction between variables studied in this work. The study adopts three measures of financial sustainability namely: capital adequacy, operational efficiency, and long-term liquidity as independent variables. Stock market price is used as dependent variable for the study.

**3.1 Materials and Method**

This study adopted both cross-sectional and longitudinal research designs. The population of this study comprised of all the 14 listed Deposit Money Banks (DMBs) in the Nigerian Stock Exchange (NSE). Due to the small size of the population, a census sampling method was thus applied. Data for the study covered DMBs' annual reports for the years 2016-2020 for the sampled fourteen (14) banks representing seventy (70) year-end-observations.

**3.2 Model Specification**

To be able to empirically analyze the relationship between financial sustainability and stock market prices, a multiple regression analysis model adapted as indicated below:

$SMP_{it} = f\ (FINANCIAL\ SUSTAINABILITY)$……..*(i)*

This can be stated in econometric form

$SMP_{it} = \beta_0 + \beta_1 CAD_{it} + \beta_2 OPE_{it} + \beta_3 LTL_{it} U_{it}$.....
(ii)

Where:

SMP= Share prices measured as the stock prices at the end of the financial year

CAD = Capital Adequacy; OPE = Operational Efficiency; LTL = Long term liquidity

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e = Error term; i = sampled DMBs (1,2, 3, ….. 14); t = Time dimension of the Variables (1,2, 3, …..5); βo = Constant; $\beta_1$, to $\beta_3$ = Coefficients of slope parameters

**3.3 Measurement of Variables**

**Table 1: Variable Measurement**

| SN | Variable | Acronym | Measurement | Source | *A Priori* Expectation |
|---|---|---|---|---|---|
| 1 | Stock Market Prices | SMP | Market value of stock prices as at the end of the financial year | Qaim, Shahzad and Salahuddin (2021) | + |
| 2 | Capital Adequacy | CAD | Equity Capital scaled by Shareholders' fund | Ofeimun and Akpotor (2020) | + |
| 3 | Operational Efficiency | OPE | Total Asset scaled by turnover for the period | Imhanzenobe (2020) | |
| 4 | Long term liquidity | LTL | Loan and advances scaled by total customers' deposit | Agu and Nwankwo (2019) | + _ |

**4.1 Data Presentation and Analysis**

**Table 2: Regression Analysis**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 0.465336 | 0.332157 | 3.775534 | 0.4324 |
| CAD | 2.632324 | 1.147557 | 27.78642 | 0.0023 |
| OPE | 4.753229 | 2.365423 | 20.66438 | 0.5848 |
| LTL | 2.111553 | 0.763532 | 9.565325 | 0.0751 |

Source: Author's Computation with E-View 9.0

**Capital Adequacy and Stock Market Prices**

Hypothesis one examines the relationship between capital adequacy and share prices of listed DMBs in Nigeria. As observed in the regression estimates in the model, a positive and significant relationship exists between SMP and CAD ($\beta_1 CADit$ =2.632324, $p=0.0023$). We therefore have enough evidence to reject the null hypothesis as the results suggest that there is significant positive between stock market prices and capital adequacy of listed Deposit Money Banks in Nigeria.This result meets our expectation and is consistent with prior studies such Enekwe, Okwo, and Ordu (2013), Ofeimun and Akpotor (2020), Qaim, Shahzad, and Salahuddin (2021) and Imhanzenobe (2020).

**Operational Efficiency and Stock Market Prices**

This hypothesis examines operational efficiency and stock market prices. As observed from the regression statistics table, there is a positive but not significant relationship between operational efficiency and stock market prices. ($\beta_3 OPEit$ =4.753229, $p=0.5848$). We therefore have enough evidence to accept the null hypothesis and state that there is no significant positive relationship between operational efficiency and stock market prices of Deposit Money Banks in Nigeria.

This result did not meet our a priori expectation. However, it is in tamed with previous studies such as Aveh, Krah, and Dadzie (2013) and Sulimany, Ramakrishnan, Chaudhry, and Bazhair (2020).

**Long Term Liquidity and Stock Market Prices**

This hypothesis examines the relationship between long term liquidity and stock market prices. As observed from the regression statistics table, there is a positive but not significant association between long term liquidity and stock market prices. ($\beta_3 LTLit$ =2.111553, $p=0.0751$). We therefore have enough evidence to accept the null hypothesis and state that there is no significant positive association between long term liquidity and stock market prices of Deposit Money Banks in Nigeria. This result did not meet our prior expectation. We expected long term liquidity in form of loan to deposit ratio to significantly influence stock market prices. However, prior studies such as IwaniczDrozdowska, Laitinen, and Suvas (2014) and Yameen and Pervez (2016),

**5.1 Conclusion**

This study was carried out to examine the relationship between financial sustainability stock market prices of listed Deposit Money Banks in Nigeria. The study, using the results of the financial statement statistics and exploratory variables in a regression model showed that capital adequacy has a significant positive relationship with stock market prices of listed Deposit Money Banks in Nigeria. The study also finds a positive but not significant relationship of operational efficiency and long-term liquidity with stock market prices of listed Deposit Money Banks in Nigeria and concludes that corporate financial sustainability enhances the stock market prices of listed Deposit Money Banks in Nigeria.

**5.2 Recommendations**

In line with the findings of this study, the following recommendations are proffered:

1. Listed Deposit Money Banks should establish capital adequacy measures that clearly outline the management's view of organization priorities on financial sustainability.
2. It is also suggested that banks should engage in activities that improve on its economic efficiency by identifying the vital factors that improves its stock market price.
3. Listed Deposit Money Banks should also implement policies that promote long term liquidity while maximizing company stock value.

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