


**CORPORATE GOVERNANCE, LIQUIDITY RISK, AND SUSTAINABLE GROWTH RATE
IN THE NIGERIAN BANKING INDUSTRY**

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ARTICLE INFO	ABSTRACT
<p>Article history:</p> <p>Received 24 July 2023</p> <p>Accepted 19 October 2023</p>	<p>Purpose: The objective of this study was to investigate the impact of board independence, liquidity risk management, and other bank-specific factors on the sustainable growth rate of banks in a developing country.</p>
<p>Keywords:</p> <p>Board Independence; Corporate Governance; Liquidity Risk; Sustainable Growth Rate.</p>	<p>Theoretical framework: The study relied on two major theories: the Agency Theory, which explored the conflicts of interest between owners and managers, and the Resources-based View Theory (RBV), which examined how banks utilised unique resources to achieve competitive advantages and sustain growth.</p>
	<p>Design/methodology/approach: The study analysed panel data from twelve banks listed on the Nigerian Stock Exchange from 2008 to 2021. This study utilised the Feasible Generalised Least Squares (FGLS) regression technique, chosen for its effectiveness in addressing serial correlation and heteroskedasticity, to examine the effect of various factors on the sustainable growth rate.</p> <p>Findings: The study found that the sustainable growth rate (SGR) of banks was significantly affected by the interaction between corporate governance variables and factors such as liquidity risk, dividend payout ratio, bank size, asset quality, and operating margin. Additionally, board independence and bank performance may not be enough to ensure a bank's resilience in volatile conditions.</p> <p>Research, Practical & Social implications: The study illuminated previously neglected factors that affect the sustainable growth rate of banks. Bank boards and policymakers can utilise these insights to enhance governance structures, risk management practices, and regulatory frameworks. This enhanced comprehension can contribute to a more stable financial system, improving public confidence and economic stability.</p> <p>Originality/value: This study addresses a notable research gap by examining the influence of board independence and bank-specific factors on the sustainable growth rate of banks. Prior research has predominantly focused on the non-financial services industry, leaving this area understudied.</p> <p>Doi: https://doi.org/10.26668/businessreview/2023.v8i10.3506</p>

**GOVERNANÇA CORPORATIVA, RISCO DE LIQUIDEZ E TAXA DE CRESCIMENTO
SUSTENTÁVEL NO SETOR BANCÁRIO NIGERIANO**

RESUMO

Objetivo: O objectivo deste estudo foi investigar o impacto da independência do conselho de administração, da gestão do risco de liquidez e de outros factores específicos dos bancos na taxa de crescimento sustentável dos bancos num país em desenvolvimento.

Enquadramento teórico: O estudo baseou-se em duas teorias principais: a Teoria da Agência, que explorou os conflitos de interesses entre proprietários e gestores, e a Teoria da Visão Baseada em Recursos (RBV), que examinou como os bancos utilizaram recursos únicos para obter vantagens competitivas e sustentar crescimento.

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Desenho/metodologia/abordagem: O estudo analisou dados de painel de doze bancos listados na Bolsa de Valores da Nigéria de 2008 a 2021. Este estudo utilizou a técnica de regressão de mínimos quadrados generalizados viáveis (FGLS), escolhida por sua eficácia no tratamento da correlação serial e da heterocedasticidade, examinar o efeito de vários fatores na taxa de crescimento sustentável.

Constatações: O estudo concluiu que a taxa de crescimento sustentável (SGR) dos bancos foi significativamente afetada pela interação entre variáveis de governança corporativa e fatores como risco de liquidez, índice de distribuição de dividendos, tamanho do banco, qualidade dos ativos e margem operacional. Além disso, a independência do conselho de administração e o desempenho dos bancos podem não ser suficientes para garantir a resiliência de um banco em condições voláteis.

Implicações de investigação, práticas e sociais: O estudo iluminou factores anteriormente negligenciados que afectam a taxa de crescimento sustentável dos bancos. Os conselhos de administração dos bancos e os decisores políticos podem utilizar estas informações para melhorar as estruturas de governação, as práticas de gestão de risco e os quadros regulamentares. Esta maior compreensão pode contribuir para um sistema financeiro mais estável, melhorando a confiança do público e a estabilidade económica.

Originalidade/valor: Este estudo aborda uma lacuna notável na investigação, examinando a influência da independência do conselho de administração e de fatores específicos dos bancos na taxa de crescimento sustentável dos bancos. A investigação anterior centrou-se predominantemente na indústria de serviços não financeiros, deixando esta área pouco estudada.

Palavras-chave: Independência do Conselho, Governança Corporativa, Risco de Liquidez, Taxa de Crescimento Sustentável.

GOBIERNO CORPORATIVO, RIESGO DE LIQUIDEZ Y TASA DE CRECIMIENTO SOSTENIBLE EN LA INDUSTRIA BANCARIA NIGERIANA.

RESUMEN

Propósito: El objetivo de este estudio fue investigar el impacto de la independencia de la junta directiva, la gestión del riesgo de liquidez y otros factores específicos de los bancos en la tasa de crecimiento sostenible de los bancos en un país en desarrollo.

Marco teórico: El estudio se basó en dos teorías principales: la teoría de la agencia, que exploraba los conflictos de intereses entre propietarios y gerentes, y la teoría de la visión basada en recursos (RBV), que examinaba cómo los bancos utilizaban recursos únicos para lograr ventajas competitivas y sostenerse. crecimiento.

Diseño/metodología/enfoque: El estudio analizó datos de panel de doce bancos que cotizan en la Bolsa de Valores de Nigéria de 2008 a 2021. Este estudio utilizó la técnica de regresión de mínimos cuadrados generalizados factibles (FGLS), elegida por su eficacia para abordar la correlación serial y la heterocedasticidad. examinar el efecto de diversos factores sobre la tasa de crecimiento sostenible.

Hallazgos: El estudio encontró que la tasa de crecimiento sostenible (SGR) de los bancos se vio significativamente afectada por la interacción entre las variables de gobierno corporativo y factores como el riesgo de liquidez, el índice de pago de dividendos, el tamaño del banco, la calidad de los activos y el margen operativo. Además, la independencia del directorio y el desempeño bancario pueden no ser suficientes para garantizar la resiliencia de un banco en condiciones volátiles.

Implicaciones de investigación, prácticas y sociales: El estudio iluminó factores previamente ignorados que afectan la tasa de crecimiento sostenible de los bancos. Los directorios bancarios y los formuladores de políticas pueden utilizar estos conocimientos para mejorar las estructuras de gobernanza, las prácticas de gestión de riesgos y los marcos regulatorios. Esta mayor comprensión puede contribuir a un sistema financiero más estable, mejorando la confianza pública y la estabilidad económica.

Originalidad/valor: este estudio aborda una brecha de investigación notable al examinar la influencia de la independencia de la junta directiva y los factores específicos de los bancos en la tasa de crecimiento sostenible de los bancos. Las investigaciones anteriores se han centrado predominantemente en la industria de servicios no financieros, dejando esta área poco estudiada.

Palabras clave: Independencia del Consejo, Gobierno Corporativo, Riesgo de Liquidez, Tasa de Crecimiento Sostenible.

INTRODUCTION

The corporate objective of any company, regardless of industry, is to maximise shareholders' wealth; profitability has also been used as a proxy for shareholders' profit maximisation goals. Profit maximisation is typically a short-term performance indicator, unlike the sustainable growth rate (SGR), which predicts long-term performance (Vukovi et al., 2022). Perhaps, this may explain why most banks that experienced runs and eventually failed were profitable before failing. This study aims to elucidate the potential consequences of a pervasive financial crisis if banks neglect their long-term sustainability. The banking ecosystem significantly emphasises addressing long-term growth and sustainability concerns, and the SGR offers comprehensive growth prospects.

Nevertheless, it is crucial to acknowledge that the sustainable growth rate (SGR) is fundamentally contingent upon the internal growth rate. The internal growth rate pertains to utilising a company's cash flow to fund present and future investments. The internally generated funds of the company encompass the retained earnings. According to Phillips et al. (2010), a positive correlation exists between a company's retained earnings and internal growth rate. This study centres around the Higgins model of Sustainable Growth Rate (SGR), which operates under the premise that SGR can be achieved by attaining a specific return on equity level. The model assumes a constant capital structure over the period without introducing additional ordinary shares. Instead, it relies on the retention of earnings and payment of dividends to maintain the capital structure. According to Lockwood and Prombutr (2010), this methodology offers investors a more favourable option for evaluating their anticipations regarding a corporation's long-term growth. According to Altahtamouni et al. (2022), the efficiency of a company's business model, as measured by the sustainable growth rate (SGR), is influenced by two important factors: return on equity and retention rates. These factors were found to have a statistically significant impact on the efficiency of the business model. Remarkably, extant scholarly works frequently overlook the inclusion of banks in investigations on SGR (Ul Ain et al., 2022; Chen et al., 2022; Imhanzenobe, 2020; Arora et al., 2018; Rahim, 2017; Hartono & Utami, 2016; Escalante et al., 2009). The study conducted by Ul Ain et al. (2022) excludes banks due to the presence of industry-specific and stringent regulatory prerequisites. Given the nature of the banking crisis and the acknowledged strategic intermediary function of banks, examining the relationships between bank governance, loan-to-deposit ratio (LDR), and SGR is crucial. Researching banks' systemic risk holds heightened significance in developing nations like Nigeria, where the regulator frequently intervenes due

to banks prioritising short-term profit maximisation over sustainable long-term expansion with effective corporate governance, risk management, and asset quality.

Banks are highly leveraged and reliant on external financing to achieve their strategic goals. However, understanding how and what effect Higgins' sustainable growth model can have on a bank's long-term sustainability prospects is just as important as in any other industry. In addition, the few studies focusing on banks (Isnurhadi et al., 2023; Zheng & Escalante, 2020; Huy et al., 2021; Olson & Pagano, 2005; Vasiliou & Karkazis, 2002;) were based on European and Asian banks and did not account for other contributing factors, such as liquidity risk and corporate governance mechanisms. The role of board independence (BID), which has implications for the long-term sustainability of banks, was also omitted. Therefore, this study asserts that understanding the interactions and relationships between corporate governance, liquidity risk proxy by loan-to-deposit ratio (LDR), and sustainable growth is essential for banks' long-term strategic objectives.

In the context of this study, corporate governance is a channel for establishing the agenda for sustainable growth, as it provides robust accountability to all stakeholders while also addressing the needs of stakeholders and the long-term viability of banks. After the global financial crisis, regulatory authorities have scrutinised corporations, especially banks, more than non-financial firms. Consequently, the ultimate objective of regulators and bank boards is to ensure that banks remain resilient and sustainable and that long-term goals are achieved to reduce the costly externalities that can result from bank failure. This study aims to answer the following research questions to develop empirical models for analysing the factors that influence the SGR of banks:

- i) What effect does BID have on LDR?*
- ii) What impact does BID have on the SGR?*
- iii) How does the interaction between BID and LDR affect the SGR?*

Therefore, this study focuses on a crucial gap in the existing literature, which has not adequately examined the possible interactions between corporate governance mechanisms, LDR, and SGR in the banking industry. This study makes two substantial contributions to the existing empirical and theoretical literature. First, the paper contributes to the scant research on bank governance mechanisms, LDR, and SGR in the banking industry. Existing research has excluded banks; the few studies that included banks have not examined them in the context of a developing nation such as Nigeria, which has the largest GDP in Africa. In addition to local and macroeconomic factors, internationalisation and globalisation of the financial system

directly affect Nigerian banks, now global players. Consequently, this study gives banks insights into decision-making that can sustain realistically sustainable growth, provide shock resistance, and continue as a going concern.

This paper's next section is structured as follows: Section two establishes the background and theoretical framework. The third section of the paper describes the methodology employed, the dataset utilised, and the variable definitions. The results and discussions are presented in the fourth section of the article, and in the fifth, conclusions, limitations and policy implications are discussed.

THEORETICAL REVIEW

As Fama and Jensen (1983) outlined, agency theory emphasises the conflict of interests between owners and managers, resulting in significant expenses and information asymmetries. This theory highlights the need for an independent board to monitor and make managerial decisions that align with stakeholder interests. The study aims to investigate whether the interests of the board and management align with sustainable growth strategies and if independent directors have oversight-monitoring responsibility to ensure the bank attains sustainable growth. And Armstrong and Shimizu (2007) emphasise the significance of irreplaceable resources to a company's competitive advantage. Lockett et al. (2009). posit that firms with valuable talent and unique resources can adopt a value-added strategy to achieve sustainable competitive advantage. The RBV theory assumes heterogeneous and imperfectly mobile firm resources, enabling firms to develop products and services utilising existing and new resources. Long-term growth is more likely to be sustained by banks with distinctive resources, such as an effective independent board or executive management, good asset quality, innovative technology, superior strategy, and efficiency.

Nigeria's banking sector evolved in the late 19th and early 20th centuries, beginning with the arrival of the African Banking Corporation in 1891 and the Bank of British West Africa in 1894, which played a pivotal role. In addition to the colonial structure, Nigeria established a domestic banking system between 1945 and 1960; however, many of these banks failed due to mismanagement and other issues (Uche, 1997). The Central Bank of Nigeria implemented significant reforms beginning in 1986, including the Universal Banking Model in 2001 and a substantial recapitalisation in 2005, which reshaped the banking landscape by merging 89 banks into 24. The global financial crisis of 2008 had an effect on Nigerian banks, resulting in government interventions and the establishment of the Asset Management Company of Nigeria

in 2010, followed by the adoption of sustainable banking principles in 2012 (Sanusi, 2011; Soludo, 2006;). Refer to Table 1 for five-year financial and economic indicators.

Table 1. Selected Nigeria Banking and Macro-economic Indicators

Indicators	2017	2018	2019	2020	2021
Loan-to-Deposit Ratio (%)	72.84	60.16	58.73	60.33	60.48
Savings rate (%)	4.13	4.07	3.95	3.22	1.55
Average Lending rates (%) max	30.60	28.16	30.57	28.64	28.12
Number of banks branches	5,714	5,301	5,437	5,385	6,918
Nigeria's External Debt (N'bn)	5,787.51	7,759.23	9,022.42	12,705.62	15,855.23
External reserves (\$' Million)	39,353.49	42,594.84	38,092.72	36,476.89	40,230.80
Exchange Rate (N/US\$1.00)	306.00	307.00	307.00	381.00	435.00
Inflation rate (%)	15.37	11.44	11.98	15.75	15.63
GDP growth- Annual rate (%)	0.81	1.92	2.21	-1.79	3.65

Source: CBN 2021 Statistical Bulletin.

Nigeria has experienced its 'own' local banking system crisis comparable to the global financial crisis of 2007-2008, which has increased the significance of corporate governance in any organisation. In 2009, the CBN took the extreme measure of dismissing the management and boards of five deposit money banks for poor corporate governance, insufficient risk management, and deteriorating asset quality. In addition, the apex bank fired the board of Nigeria's oldest bank in April 2021 for the same reasons as in 2009, which had severe implications for the bank's sustainability. Corporate governance, specifically BID and banking risk, are crucial factors influencing the sustainability of the banking industry. BID refers to the role of non-executive and independent non-executive directors in maintaining the long-term sustainability strategies of banks. Ngo et al. (2023) have established a positive correlation between the proportion of non-executive directors within a company and its financial performance, specifically when the market environment is characterised by competitiveness. Consequently, this study investigates the effect of BID on banks' LDR and the impact of BID and LDR interactions on banks' SGR in Nigeria.

Empirical Review and Hypothesis Development

Concerning other corporate governance measures and bank risk management, Kyei et al. (2022), who focused on African banks, discovered a negative correlation between bank risks and particular board characteristics, such as gender diversity and CEO duality. Their findings supported the claim that improved corporate governance can increase risk management effectiveness. In a study of Pakistani banks, Fida and Naveed (2021) discovered that corporate governance measures, including board meeting attendance and the frequency of board

committee meetings, affected banking risk. This highlights the significance of the board's active involvement in risk management. Both Aebi et al. (2012) and Ellul and Yerramilli (2013) investigated the chief risk officer (CRO) position within US banks. They found that banks performed better when the CRO reported directly to the board rather than the CEO, highlighting the need for executive involvement in risk management. Okere et al. (2018) identify a positive correlation between risk management, which includes credit and LDR, and financial performance among Nigerian banks. In contrast, Velliscig et al. (2022) found a negative correlation between the simple book leverage ratio and equity volatility for a large sample of European banks, indicating a more risky perspective on leverage. The literature on BID and LDR yields contradictory results, which may be attributed to the various risk measures and methodologies of many related studies.

In the macroeconomic environment, banks play a significant role. The stock market serves as a platform for companies to raise equity capital for investment and capital expenditure, major determinants of industrial and economic growth (Levine & Zervos, 1998). According to Hoque et al. (2018), the growth of the economy and the stock market are mutually reinforcing. However, the growth of stock markets is never uniform, nor is it ever smooth. Several factors, such as credit market imperfections, the political economy, and political instability, are responsible for this growth volatility (Berg & Ostry, 2017). The sluggish growth of sub-Saharan African nations can be attributed to state fragility, which inhibits economic growth. According to a study by Mazorodze (2021) based on data analyses of 13 sub-Saharan countries from 2009 to 2018, misaligned exchange rates increase state fragility in sub-Saharan Africa. Reducing the impact of state fragility on economic growth by strengthening institutions, enhancing the capacity and capability of service providers, and legitimising frameworks and policies is one method for promoting sustainable economic growth. Reddy et al. (2023) asserted that domestic credit, return on equity, and Capital adequacy ratio were significant determinants of economic growth in India and that domestic credit and return on equity had a negative relationship with GDP. In a related study, Genevieve et al. (2023) examined the effect of exchange rates on the time-frequency dependence of international remittance inflows on economic growth in Africa between 1980 and 2020. They concluded that exchange rates can impede economic growth and that sustainable policies are necessary for risk mitigation.

The Sustainable Growth Rate (SGR) Nexus

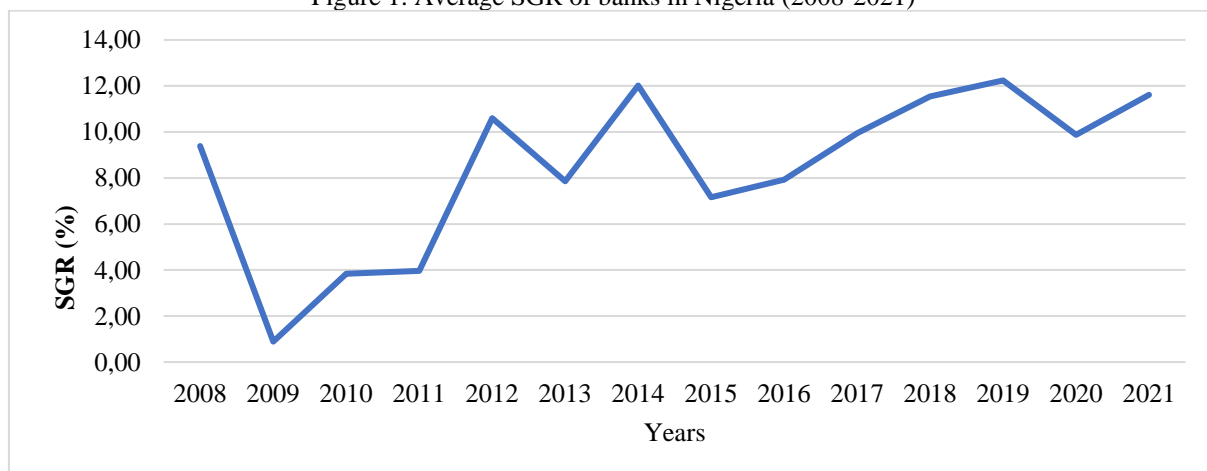
Combining economic growth, sustainable development, and SGR, a more comprehensive view of sustainability is conceptualised, including economic viability and environmental and social responsibilities. In business, SGR can signify a company's capacity to manage its resources and investments to ensure long-term viability. This pertains to the 'triple bottom line' concept in business, which emphasises not only economic outcomes (profits) but also social (people) and environmental (planet) impacts. Higgins (1977) proposed that the SGR determines a company's maximum growth rate without exhausting its financial resources. Therefore, it is envisioned that a company's sustainable growth will affect its capital structure, precisely its dividend policy and issuance of new equity. Ashta (2008) defines SGR as the growth rate that enables a business to expand without incurring excessive or insufficient cash flow. In addition to Higgins (1977), Van Home's sustainable growth model examines enterprise growth from a dynamic viewpoint (Yang & Gan, 2019). Fonseka et al. (2012) evaluate the significance of the differences between two competing SGR models. It was found that Higgins' SGR is more sensitive to variations in financial characteristics than Van Home's SGR and that both models result in roughly the same sample size loss. Burger and Hamman (1999) analysed the difference between accounting SGR and cash flow SGR (CFSGR). They discovered that non-cash working capital components affected the CFSGR but not the accounting SGR. Although profitability substantially impacts growth and cash positions, Burger and Hamman (1999) advise businesses to consider the effects of CFSGR on growth and cash positions.

Platt et al. (1995) stressed the importance of monitoring the SGR of firms in financial distress to control their growth rates. According to Platt et al. (1995), if sales grow faster than SGR, it results in additional financing, which may be unattainable, and this situation is responsible for about 47% of bankruptcies. In this study, a bank's SGR refers to the growth rate at which it can maintain financial stability and long-term viability. Most of the existing literature has examined board gender diversity and SGR (Isnurhadi et al., 2023), CEO ownership and capital structure and performance (Bhagat & Bolton, 2019), corporate governance and financial stability (Anginer et al., 2018), board diversity and firm risk (Bernile et al., 2018), independent board directors and firm transparency (Armstrong et al., 2014), corporate governance and operational risk (Neifar & Jarboui, 2018), and board audit committee and non-performing loans (Angahar & Mejabi, 2014; Ojeka et al., 2021). Whilst contributing to the existing literature, these studies on corporate governance, irrespective of the measures used, indicate that an effective corporate governance mechanism is a prerequisite for a firm's

financial performance, as it has a positive relationship with long-term sustainable growth. However, studies examining the core of banks' board structure- BID (the role of non-executive and independent non-executive directors) and its impact on LDR and SGR are scarce and almost non-existent. Moreover, certain existing studies (Mukherjee & Sen, 2017; Olson & Pagano, 2005; Radasanu, 2015; Zheng & Escalante, 2020) have not holistically addressed the three objectives of this study. However, Alkhodary (2023) conducted significant research that explored incorporating sustainability principles into banks' strategic management practices. Alkhodary (2023) found that banks with a clearly articulated and effectively communicated sustainability strategy are more inclined to successfully attain their sustainability objectives than banks lacking such a strategy.

The SGR is a cost-free method of financing for a company, representing the proportion of retained returns reinvested by equity holders. It is sustainable due to irredeemable equity capital, a significant factor in determining a business's financial independence (Imhanzenobe, 2020). SGR was defined by Vukovi et al. (2022) as a firm's capacity to maintain competitiveness and ensure survival in a turbulent market environment while achieving sustainable and responsible market expansion. In this study, the SGR measures a bank's capacity to grow without the assistance of external funds or bailouts. Due to the global and Nigerian banking crises, the SGR of the sampled banks in this study dropped precipitously from 9.39% in 2008 to 0.88% in 2009. Nonetheless, the SGR increased gradually in 2010, as shown in Figure 1. By contrast, while the average SGR of listed banks fell significantly in 2009, that of listed manufacturing companies increased from 6.00% in 2008 to 10% in 2009 (Imhanzenobe, 2020).

Figure 1. Average SGR of banks in Nigeria (2008-2021)



Source: Author's conceptualisation (2023)

El Madbouly (2022) found a significant and positive relationship between SGR and asset efficiency, profitability, and leverage based on a study of Egyptian-listed companies' SGR between 2015 and 2019. And Rahim (2017) analysed the relationship between SGR and firm performance for publicly traded Malaysian companies, excluding banks. According to Rahim (2017), there is a significant correlation between the debt ratio, the equity ratio, the total asset turnover, the firm size, and the SGR. Mukherjee and Sen (2018, 2017) reported comparable results. In addition, Pratama (2019) investigates the effects of liquidity and asset quality on the SGR of listed firms between 2010 and 2017. Their findings demonstrated that liquidity and poor asset quality had a significant and negative impact on SGR, highlighting the significance of sustainability in achieving profit. Likewise, Vukovi et al. (2022) discovered that liquidity and leverage ratios have a negative impact on SGR. In contrast, a study of 135 companies in 16 Eastern European countries between 2016 and 2020 found a positive relationship between profitability and SGR.

Mamilla (2019) investigated the relationship between the SGR and the actual growth rate of five oil companies listed on the Bombay Stock Exchange, India. And found that firm size and the debt-to-equity ratio had a significant negative relationship with the SGR, indicating that firms should reduce short-term liabilities and increase long-term liabilities to improve their SGR. Chen et al. (2022) examined the factors influencing the SGR of Chinese telecom operators from 2006 to 2018. Chen et al. (2022), using the RBV theory lens in a multiple regression model to analyse longitudinal time-series panel data, found that customer value, operating expenses, and industry fixed assets are significant determinants of SGR, with customer value and fixed assets having a positive relationship with SGR and operating expenses having a negative impact. Shui-ying and Ying-yu (2008) examined the relationship between intellectual capital and the capacity for sustainable growth of 699 Chinese companies. According to these findings, physical and intellectual capital contribute positively to the sustainable growth of Chinese firms, while human capital positively affects this growth. Isnurhadi et al. (2023) investigated the SGR in the ASEAN banking industry. Indonesia, Thailand, the Philippines, Malaysia, and Singapore were identified as the nations with the greatest industry-related risks.

In addition, Isnurhadi et al. (2023) found that operational risk has a negative effect on sustainable growth but a positive effect on actual growth. In contrast, asset utilisation has a positive effect on sustainable growth. In addition, business risk has no impact on actual growth. In addition, LDR can influence sustainable growth by determining dividend and financing

policies and operational activities and reconciling managers' and shareholders' conflicting objectives. Concerning the significance of working capital to SGR, Nastiti et al. (2020) analysed the relationship between operating capital, liquidity, and profitability on SGR using panel data from manufacturing firms listed on the Indonesian Stock Exchange. According to Nastiti et al. (2020), working capital management has a substantial and negative impact on the asset utilisation of a company. Their research uncovered a significant connection between asset utilisation and sustainable growth. In addition, asset utilisation has been recognised as a link between working capital management and sustainable growth.

Olson and Pagano (2005) analysed public bank holding company mergers in the United States between 1987 and 2000. They found that the SGR of the acquiring firm significantly predicted cross-sectional differences in the merged entity's long-term operating and stock performance. In addition, Olson and Pagano (2005) asserted that a bank's dividend payout ratio, estimated minimum growth rate before the acquisition, and variations in this growth rate after the acquisition, are the most economically significant determinants of the merged bank's abnormal stock return performance. Vasiliou and Karkazis (2002) analysed the SGR of the largest bank in Greece, the National Bank of Greece, from 1993 to 1998 and discovered that it exceeded its SGR, indicating rapid growth. To address this issue, banks must consider increasing their return on assets, decreasing their dividend payout ratio, increasing their equity capital, and increasing their leverage. Jegers (2003) extends the existing literature and focuses on the SGR of non-profit organisations and found that efficiency, profitability, and capital structure—factors that constrain SGR in for-profit organisations—are also significant in the SGR of non-profit organisations. Although the SGR is useful for planning purposes, a higher SGR can pose significant difficulties for businesses. Based on Fortune 500 companies, Raisch and Von Krogh (2007) demonstrated that while the growth rate of the examined companies met stockholders' expectations and that SGR exceeded their expectations, the empirical findings of this study indicate that the higher the SGR, the greater the financial risks a company faces. Although the theoretical and empirical literature provides contradictory evidence regarding the significance of SGR across industry groups, no previous studies examined the interactions between corporate governance variables, particularly board independence and liquidity risk, on sustainable growth in the banking industry.

Consequently, three research questions can address this gap in the literature: How is board independence related to liquidity risk? Secondly, how does board independence influence SGR? Thirdly, do interactions between board independence and liquidity risk affect the SGR?

This study contributes to the existing body of knowledge because no previous research has examined the effect of BID and LDR on sustainable growth through the interactions of BID and liquidity. Consequently, the following null hypotheses are postulated:

HO1: BID has no significant impact on LDR.

HO2: BID does not have a significant influence on the SGR of banks.

HO3: The interaction between BID and LDR does not significantly affect the bank's SGR.

METHODOLOGY

This study includes all banks listed on the NGX from 2008 to 2021. The chosen timeframe is significant, encapsulating major events, such as the 2008 global financial crisis, the Nigerian banking crises in 2009 and 2021, and extensive banking reforms. This study adopts a purposeful sampling technique to select 14 banks from those listed on the NGX. However, two banks were excluded because of incomplete or missing data. This adjustment resulted in a final sample of 12 banks. The final sample yielded 168 observations for the study. Significantly, as reported by the CBN (2021), these 12 banks accounted for 98% of the total assets of the entire banking industry, providing a solid foundation for generalising its findings. This sample size is comparable to those of similar studies. For instance, Adegboye et al. (2020) analysed twelve Nigerian banks between 2009 and 2017. Altahtamouni et al. (2022) examined 11 Saudi Arabian banks listed between 2010 and 2019. Between 2008 and 2019, Al-Slehat and Altameemi (2021) analysed 13 listed banks in Jordan. From 2016 to 2020, Kessy et al. (2021) examined four banks in Tanzania. The data used in this study were available from these banks' financial statements and annual reports, including their corporate governance reports and the SGR rate was sourced from the Bloomberg database.

Measurement of the variables: Prior research has utilised BID as a proxy for corporate governance (Adegboye et al., 2020; Beekes et al., 2004; Fayad et al., 2022; Khan et al., 2022). This study follows the tradition of the existing literature. Still, it highlights the peculiarity of the bank governance structure in Nigeria, where independent non-executive directors dominate the board and are responsible for the long-term strategic goals of the bank as well as the oversight monitoring of executive management. Table 2 provides a summary of variables and measures.

Table 2. Variables and Measures

Variables	Acronym	Measures
INDEPENDENT VARIABLE		
Board Independence	BID	The proportion of independent and non-executive directors on the bank's board.
DEPENDENT VARIABLES		
Liquidity risk	LDR	The ratio of total loans to total deposits.
Sustainable growth rate	SGR	The measure of how much a bank can grow without borrowing more money. Unit: Actual . Calculated as: <i>Return on Common Equity * (1 - (Dividend Payout Ratio / 100))</i>
CONTROL VARIABLES A		
Board size	BSI	The number of directors on the board
Board meetings	BMT	The number of board meetings held during the reporting period.
Board audit committee meetings (ACM)	ACM	The number of audit committee meetings held during the reporting period.
CONTROL VARIABLES B		
Dividend payout ratio	DPR	Fraction of net income a bank pays to its shareholders in dividends, in percentage . Calculated as: <i>Total Common Dividends*100 / Income Before Extraordinary Items Less Minority and Preferred Dvd</i>
Operating margin	OPM	The ratio measures a bank's pricing strategy and operating efficiency in percentage . Calculated as: <i>Operating Income (Losses) / Total Revenue * 100</i>
capital adequacy ratio	CAR	The ratio of total risk-based capital to risk-weighted assets.
Asset quality	NPA	The ratio of non-performing assets to total assets.
Bank size	BSZ	Log of bank's total assets in millions

Source: Authors' computations (2023)

Model specification and regression estimators: This study employed an ex-post facto research design with longitudinal time-series panel data and an empirical model incorporating econometric forms and a pooled panel data regression technique, following the tradition of empirical models in related studies by Gupta and Mahakud (2020) and Pham et al. (2022).

Determinants of Liquidity Risk (LDR)

The first objective of this study is to empirically investigate the effect of BID on bank LDR using the following model:

$$\text{LDR} = f(\text{BID}, \text{BSI}, \text{BMT}, \text{ACM}) \quad (1)$$

Articulated in a more precise econometric form, this model is as follows:

$$\text{LDR}_{it} = \alpha_0 + \beta_1 \text{BID}_{it} + \beta_2 \text{BSI}_{it} + \beta_3 \text{BMT}_{it} + \beta_4 \text{ACM}_{it} + \varepsilon_{it} \quad (2)$$

Where,

LDR_{it} = denotes the LDR for bank 'i' at a time 't'. LDR is quantified using the loan-to-deposit ratio. ε_{it} Is the disturbance term for bank 'i' at a time 't', capturing unexplained variability in LDR 'i' ranges from 1 to 12, indexing the banks under consideration, and 't' ranges from 2008 to 2021, spanning the study period. α_0 is the intercept term, and the β parameters ($\beta_1, \beta_2, \beta_3, \beta_4$) are coefficients that capture the effects of the respective explanatory variables on the LDR indicator. BID_{it} , BSI_{it} , BMT_{it} , and ACM_{it} - These are the key independent variables for bank 'i' at a time 't'; these include BID, Board Size (BSI), number of Board Meetings (BMT), and number of Board Audit Committee Meetings (ACM), respectively.

Determinants of Sustainable Growth Rate (SGR)

Assuming that BID is an important determinant of SGR, the second objective is to investigate the effect of BID and other bank-specific variables on banks' SGR as specified below:

$$SGR = f(BID, DPR, OPM, CAR, BSZ) \quad (3)$$

In econometrics, it is expressed as:

$$SGR_{it} = \varphi_0 + \beta_1 BID_{it} + \beta_2 DPR_{it} + \beta_3 OPM_{it} + \beta_4 CAR_{it} + \beta_5 LNBSZ_{it} + \varepsilon_{it} \quad (4)$$

Where,

SGR_{it} = sustainable growth rate and BID is board independent. DPR is the dividend payout ratio, OPM is the operating margin, CAR is the capital adequacy ratio, LNBSZ is the log of bank size (total assets), and ε_{it} Is the error term for bank 'i' at a time 't'

Determinants of Liquidity Risk (LDR) and board independence (BID) Interactions on sustainable growth rate

The third objective is to explore the intermediating role of LDR and BID on banks' SGR, which is specified as follows:

$$SGR = f(BID \times LDR, OPM, DPR, CAR, NPA), \quad (5)$$

When translated into econometric notation, it is stated as follows;

$$SGR_{it} = \varphi_0 + \beta_1 BID * LDR_{it} + \beta_2 OPM_{it} + \beta_3 DPR_{it} + \beta_4 CAR_{it} + \beta_5 NPA_{it} + \varepsilon_{it} \quad (6)$$

Where;

SGR_{it} Is the SGR, for bank 'i' at a time 't', φ_0 is the intercept of the model, and $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ the coefficients to be estimated indicate the effect of the corresponding independent variable or interaction term on the SGR. $\beta_1 BID * LDR_{it}$ Is the interaction term that captures the combined effect of BID and LDR for bank 'i' at a time 't', and $OPM_{it}, DPR_{it}, CAR_{it},$ and NPA_{it} = Represent, for bank 'i' at a time 't', the Operating Margin (OPM), Dividend Payout Ratio (DPR), Capital Adequacy Ratio (CAR), and asset quality (NPA), respectively. ε_{it} = is the error term for bank 'i' at a time 't', capturing unaccounted-for variability in the SGR.

Estimation Method

This study began with descriptive statistics that illustrated the characteristics of the dataset in terms of the mean, maximum, minimum, and standard deviation, which indicates the degree of dispersion or spread of the dataset around its mean, skewness; which reveals the distribution, and Kurtosis; which indicates the presence or absence of outliers. Moreover, the author employed the traditional panel technique of pooled ordinary least squares, fixed effect, and random effect models. Consideration of the Breusch and Pagan LM test, the F-testparm test, and the Hausman test is required when determining the estimator to use for result interpretation and hypothesis testing. When Breusch and Pagan's test is significant at the 5% level, it indicates that the random effect estimator produces more accurate estimates than pool OLS. Similarly, if F-testparm is significant at 5%, the fixed effect is a more effective estimator than pool OLS. In cases where fixed effect and random effect estimates are preferred over pooled OLS, the Hausman test is used to determine the most efficient estimator. When the probability chi-square value is statistically significant at a level of 5%, the fixed effect estimator will be selected. Complex error structures can be observed in panel data, which results in inefficient estimation coefficients and biases the standard errors. Consequently, an estimator capable of handling both error types is required in the presence of serial correlation and cross-sectional dependence due to non-spherical errors. According to Reed and Ye (2011), the feasible generalised least squares (FGLS) estimator can simultaneously handle serial correlation and cross-sectional dependence.

RESULTS AND DISCUSSIONS

The summary statistics presented in Table 3 reveal the characteristics of the data series utilised in this study. The mean was calculated by dividing the total value by the total number of observations. In contrast, the median is the middle number obtained when the data series are arranged in ascending or descending order for an actual observation or the average of the two middle numbers in the case of an odd number of observations. ACM, BID, BMT, BSI, BSZ,

CAR, DPR, LDR, NPA, OPM and SGR have mean values of 4.4226, 8.5774, 6.4583, 13.6191, 2562975, 20.3103, 28.1346, 66.8605, 3.2390, 15.5956 and 8.4909 respectively, while the median values are 4, 8, 6, 14, 1644416, 19.95, 22.2177, 65.9258, 2.1094, 22.8455 and 8.4472 for ACM, BID, BMT, BSI, BSZ, CAR, DPR, LDR, NPA, OPM and SGR, respectively.

The standard deviation measures the extent of dispersion of the data series from the mean, and the values are 1.2357, 1.8780, 2.3416, 2.8512, 2460294, 8.5192, 33.7046, 16.2944, 3.1079, 63.3801 and 6.0303 for ACM, BID, BMT, BSI, BSZ, CAR, DPR, LDR, NPA, OPM and SGR respectively. The ACM has the smallest value, indicating that the data series cluster around the mean. The skewness and Kurtosis are measures of the location or position of a data series in a probability distribution.

Skewness measures the extent of asymmetry or symmetry of the data series, whether it has a long right tail or a long left tail or is positively or negatively skewed. CAR and OPM are negatively skewed, whereas ACM, BID, BMT, BSI, BSZ, DPR, LDR, NPA, and SGR are positively skewed. However, Kurtosis measures whether the data series is heavily or lightly peaked. They showed greater concentrations of the values above and below the mean. The BSI and LDR are platykurtic because their values are lower than 3 for a normal distribution, whereas the others are leptokurtic because their values are greater than 3. Based on the probability values of the Jacque-Bera statistic, only BSI and LDR exhibited a normal distribution. At the same time, ACM, BID, BMT, BSZ, CAR, DPR, NPA, OPM and SGR do not indicate a normal distribution.

Table 3: Descriptive statistics

	ACM	BID	BMT	BSI	BSZ	CAR	DPR	LDR	NPA	OPM	SGR
Mean	4.4226	8.5774	6.4583	13.6191	2562975.	20.3103	28.1346	66.8605	3.2390	15.5956	8.4909
Median	4.0000	8.0000	6.0000	14.0000	1644416.	19.9500	22.2177	65.9258	2.1094	22.8455	8.4472
Maximum	11.0000	14.0000	16.0000	20.0000	11731965	55.0000	267.0570	114.2259	25.9000	62.5282	28.9477
Minimum	1.0000	3.0000	1.0000	7.0000	129608.9	- 16.0000	0.0000	34.6283	0.0000	-643.6792	-6.0595
Std. Dev.	1.2357	1.8780	2.3416	2.8512	2460294.	8.5192	33.7046	16.2944	3.1079	63.3801	6.0303
Skewness	0.9709	0.3740	1.1234	0.1236	1.6677	- 0.0702	3.0818	0.2834	3.2411	-8.1176	0.4770
Kurtosis	7.9547	3.6880	4.7977	2.8011	5.4033	8.2028	19.9122	2.6625	19.8311	78.2992	3.3623
Jarque-Bera	198.2384	7.2299	57.9599	0.7044	118.3062	189.6248	2268.102	3.0464	2277.137	41534.82	7.2897
Probability	0.0000	0.0269	0.0000	0.7032	0.0000	0.0000	0.0000	0.2180	0.0000	0.0000	0.0261
Observations	168	168	168	168	168	168	168	168	168	168	168

Source: Authors' computations (2023)

Estimation Results and Analysis

Table 4 shows the results for the first hypothesis that BID has no significant effect on LDR. The estimated coefficients of OLS, FEM, and REM with FGLS indicate that board size (BSI) and board meetings (BMT) are negative. In contrast, BID and audit committee meetings (ACM) have positive signs under the OLS estimator. Both BMT and ACM were statistically significant at the 5% level.

Table 4. Impact of Board Independence on Liquidity Risk (Dependent Variable: LDR)

Variables	OLS	FEM	REM	FGLS
BID	0.8885 (0.8423)	-1.6332 (1.0963)	-0.7830 (0.9972)	-0.6839 (0.7918)
BSI	-0.6021 (0.5725)	1.8264*** (0.6983)	1.0932* (0.6444)	0.1336 (0.5686)
BMT	-1.2570** (0.5925)	-1.0727* (0.6082)	-1.1515* (0.5911)	-0.3690 (0.4318)
ACM	2.5842** (1.1259)	0.9220 (1.0138)	1.1683 (1.0168)	0.7626 (0.7786)
Constant	64.1293*** (7.7492)	58.8450*** (8.5785)	60.9576*** (8.5101)	67.1887*** (7.1345)
Observations	168	144	168	168
Number of c_id	12	12	12	12
R-squared	0.0479	0.001		
Adj. R-squared				
F-statistics	F(4, 163) = 2.05 Pro > F = 0.09	F(4, 152) = 2.60 Pro > F = 0.04	Waldchi2(4) = 7.14 Pro > Chi2 = 0.13	Waldchi2(4) = 2.19 Pro > Chi2 = 0.70
Multicollinearity Test VIF Mean	1.46	-	-	-
Pesaran CSD Test	-	F(4, 152) = 11.49 Pro > F = (0.00)	-	-
FE Testparm	-	F(4, 152) = 2.60 Pro > F = 0.04	-	-
Breusch-Pagan LM Test	-	-	Chibar ² (01) = 74.04 Pro > chibar ² = 0.00	-
Hausman Test	-	-	Chi ² (4) = 2.59 Pro > Chi ² = 0.63	-
Modified Wald Test for Heteroskedasticity	-	Chi ² (4) = 92.41 Pro > Chi ² = 0.00	-	-
Woodridge Test for Autocorrelation	-	F(1, 11) = 31.09 Pro > F = 0.00	-	AR (1) = 0.66

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Source: Authors' computations (2023)

The interpretation equation, as indicated in Table 4, is as follows:

$$LDR_{it} = \varphi + \beta_1 BID_{it} + \beta_2 BSI_{it} + \beta_3 BMT_{it} + \beta_4 ACM_{it} + \varepsilon_{it}$$

$$LDR_{it} = 67.1889 - 0.6839BID_{it} + 0.1336BSI_{it} - 0.3690BMT_{it} + 0.7626ACM_{it}$$

The estimated coefficients indicate a negative relationship between BID, board meetings, and loan-to-deposit ratio. This implies that an increase in BID and meetings leads to a decrease in the loan-to-deposit ratio. In terms of magnitude, the loan-to-deposit ratio decreased by 0.6839 and 0.3690 units because of a one-unit increase in BID and board meetings, respectively [BID = -0.6839, t-test = -0.86, pro = .39 > 0.05, and BMT = 0.3690, t-test = -0.85, pro = 0.39 > 0.05]. Conversely, there is evidence of a positive relationship between board size, audit committee meetings, and the loan-to-deposit ratio. This means that the loan-

to-deposit ratio would increase because of an increase in board size and audit committee meetings. Concerning the magnitude, a one-unit increase in board size and audit committee meetings would lead to 0.1336 and 0.7626 units, respectively, in the loan-to-deposit ratio [BSI = 0.1336, t-test = 0.23, pro = 0.81 > 0.05, and ACM = 0.7626, t-test = 0.98, pro = 0.33 > 0.05]. None of the variables were statistically significant. Therefore, BID, board size, board meetings, and audit committee meetings are not significant factors influencing LDR. Therefore, to test hypothesis one, that BID has no significant effect on LDR, the Wald test chi-square of 2.19 and probability of 0.70 refers. The null hypothesis could not be rejected because the probability value of 0.70 is greater than 0.05. Therefore, the results indicate that BID does not significantly affect LDR.

Table 5 presents the regression results for testing the second hypothesis that BID does not significantly influence banks' SGR. Under the OLS estimator, BID and the dividend payout ratio (DPR) exhibit negative signs, while the operating margin (OPM), CAR, and bank size (LNBSZ) show positive signs. Only the capital adequacy ratio is statistically insignificant; BID is significant at the 5% level; and operating margin, dividend payout ratio, and bank size are statistically significant at the 1% level. Moreover, under the FEM estimator, BID and dividend payout ratio (DPR) exhibit negative signs. By contrast, operation margin (OPM), CAR, and LNBSZ exhibit positive signs. Furthermore, although BID, dividend payout ratio (DPR), operating margin (OPM), and LNBSZ are statistically significant at the 1% level, the capital adequacy ratio is not. In addition, the estimated coefficients under REM are similar to those obtained under FEM in terms of signs and statistical significance but different in magnitude. In the case of FGLS, the signs are the same as those obtained using the other estimators. However, BID and the capital adequacy ratio are statistically insignificant, while operating margins, dividend payouts, and bank size are significant at the 1% level.

Table 5. Impact of Board Independence on Sustainable Growth Rate (Dependent Variable: SGR)

Variables	OLS	FEM	REM	FGLS
BID	-0.5385** (0.2266)	-0.7350*** (0.2789)	-0.6804*** (0.2523)	-0.3537 (0.2372)
OPM	0.0304*** (0.0071)	0.0220*** (0.0069)	0.0246*** (0.0068)	0.0196*** (0.0064)
DPR	-0.0496*** (0.0131)	-0.0563*** (0.0132)	-0.0557*** (0.0127)	-0.0490*** (0.0114)
CAR	0.0272 (0.0506)	0.0286 (0.0516)	0.0247 (0.0495)	0.0467 (0.0435)
LNBSZ	1.7342*** (0.4617)	2.8395*** (0.6710)	2.3818*** (0.5497)	2.6029*** (0.4932)
Constant	-11.3688* (6.6037)	-25.2277** (10.3680)	-19.1162** (8.2754)	-26.0152*** (7.2279)

Observations	168	144	168	168
Number of c_id	12	12	12	12
R-squared	0.2529	0.211		
Adj. R-squared				
F-statistics	F(5, 162) = 10.97 Pro > F = 0.00	F(5, 151) = 14.32 Pro > F = 0.00	Waldchi ² (5) = 67.82 Pro > Chi ² = 0.00	Waldchi ² (5) = 67.16 Pro > Chi ² = 0.00
Multicollinearity Test VIF Mean	1.15	-	-	-
Pesaran CSD Test	-	F(5, 151) = 4.73 Pro > F = 0.00	-	-
FE Testparm	-	F(5, 151) = 14.32 Pro > F = 0.00	-	-
Breusch-Pagan LM Test	-	-	Chibar ² (01) = 31.52 Pro > chibar ² = 0.00	-
Hausman Test	-	-	Chi ² (4) = 2.59 Pro > Chi ² = 0.63	-
Modified Wald Test for Heteroskedasticity	-	Chi ² (4) = 125.91 Pro > Chi ² = 0.00	-	-
Woodridge Test for Autocorrelation	-	F(1, 11) = 1.16 Pro > F = 0.31	-	AR (1) = 0.31

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Source: Authors' computations (2023)

The equation for interpretation, as indicated in Table 4.3, is as follows.

$$SGR_{it} = \varphi + \beta_1 BID_{it} + \beta_2 OPM_{it} + \beta_3 DPR_{it} + \beta_4 CAR_{it} + \beta_5 LNBSZ_{it} + \varepsilon_{it}$$

$$SGR_{it} = -26.0152 - 0.3537BID_{it} + 0.0196OPM_{it} - 0.0490DPR_{it} + 0.0467CAR + 2.6029LNBSZ_{it}$$

The estimated coefficients reveal a negative relationship between BID, dividend payout ratio, and sustainable growth. Thus, increased BID and dividend payout ratios would decrease sustainable growth. Concerning the magnitude, a unit increase in BID and dividend payout ratio, respectively, would cause a decrease of 0.3537 and 0.049 units in sustainable growth [BID = 0.3537, t-test = -1.49, pro = 0.14 > 0.05, and DPR = 0.049, t-test = -4.30 pro = 0.00 < 0.05]. The dividend payout ratio is statistically significant at the 1% level, whereas BID is not statistically significant. However, there is evidence that operating margin, capital adequacy ratio, and bank size have a positive relationship with sustainable growth. In terms of magnitude, a one-unit increase in the operating margin and capital adequacy ratio and a one percentage increase in bank size would lead to 0.0196, 0.0467, and 0.0260 units of sustainable growth, respectively [OPM = 0.0196, t-test = 3.05, pro = 0.00 < 0.05, CAR = 0.0467, t-test = 1.07, pro = 0.28 > 0.05, and LNBSZ = 2.6029, t-test = 5.28, pro = 0.00 < 0.05]. Both operating margin and bank size are statistically significant at the 1% level, but the capital adequacy ratio is insignificant. Therefore, the dividend payout ratio, operating margin, and bank size are

significant factors that influence sustainable growth. To test the null hypothesis for objective two of this study, we employed the Wald chi-square test of 67.16 with a probability of $0.00 < 0.05$, which is statistically significant at the 1% level. Thus, the null hypothesis is rejected in favour of the alternative that BID significantly influences sustainable growth.

Table 6 contributes to the literature by examining how BID interactions with LDR affect banks' SGR. This question satisfies the third hypothesis of this study in the null form, which states that the interaction of BID and LDR has no significant impact on the SGR.

Table 6. Impact of Board Independence Interaction with Liquidity Risk on Sustainable Growth Rate (Dependent Variable: SGR)

Variables	OLS	FEM	REM	FGLS
BID*LDR	-0.0075*** (0.0022)	-0.0130*** (0.0024)	-0.0099*** (0.0023)	-0.0076*** (0.0024)
OPM	0.0395*** (0.0068)	0.0260*** (0.0066)	0.0336*** (0.0066)	0.0391*** (0.0077)
DPR	-0.0488*** (0.0130)	-0.0713*** (0.0124)	-0.0595*** (0.0126)	-0.0519*** (0.0116)
CAR	0.0376 (0.0513)	-0.0185 (0.0490)	0.0173 (0.0496)	-0.0109 (0.0475)
NPA	-0.3381** (0.1341)	-0.4566*** (0.1299)	-0.3815*** (0.1310)	-0.4394*** (0.1293)
Constant	13.8961*** (1.6463)	19.3927*** (1.7979)	16.2305*** (1.7591)	15.0735*** (1.8530)
Observations	168	144	168	168
Number of c_id	12	12	12	12
R-squared	0.2577	0.252		
Adj. R-squared				
F-statistics	F(5, 162) = 11.25 Pro > F = 0.00	F(5, 151)=17.56 Pro > F = 0.00	Waldchi ² (5) =68.30 Pro > Chi ² = 0.00	Waldchi ² (5)=60.86 Pro > Chi ² = 0.00
Multicollinearity Test VIF Mean	1.11	-	-	-
Pesaran CSD Test	-	F(5, 151) = 5.18 Pro > F = 0.00	-	-
FE Testparm	-	F(5, 151)=17.56 Pro > F = 0.00	-	-
Breusch-Pagan LM Test	-	-	Chibar ² (01)=31.06 Pro> chibar ² = 0.00	-
Hausman Test	-	-	Chi ² (4) = 2.59 Pro > Chi ² = 0.63	-
Modified Wald Test for Heteroskedasticity	-	Chi ² (4) = 46.49 Pro > Chi ² = 0.00	-	-
Woodridge Test for Autocorrelation	-	F(5, 11) = 0.11 Pro > F = 0.75	-	AR (0.34)

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Source: Authors' computations (2023)

The regression equation is specified as follows:

$$SGR_{it} = \varphi + \beta_1 BID * LDR_{it} + \beta_2 OPM_{it} + \beta_3 DPR_{it} + \beta_4 CAR_{it} + \beta_5 NPA_{it} + \varepsilon_{it}$$

$$SGR_{it} = 15.0735 - 0.0076 BID * LDR_{it} + 0.0391 OPM_{it} - 0.0519 DPR_{it} - 0.0109 CAR - 0.3381 NPA_{it}$$

Also, table 6 shows that the parameter estimates of BID's interaction with LDR, dividend payout ratio, capital adequacy ratio, and non-performing assets have a negative relationship with sustainable growth. This result means sustainable growth decreases because of the increased BID interaction with the loan-to-deposit ratio, dividend payout ratio, and non-performing assets. Regarding magnitude, a one-unit increase in BID's interaction with loan-to-deposit, dividend payout, and capital adequacy ratios would reduce sustainable growth by 0.0076, 0.0519, and 0.3381 units, respectively. [BID*LDR = -0.0076, t-test = -3.20, pro = 0.00 < 0.05; DPR = -0.0519, t-test = -4.48, pro = 0.00 < 0.05; CAR = -0.0109, t-test = -0.23, pro = 0.82 > 0.05, NPA = -0.4394, t-test = -3.40, pro = 0.00 < 0.05].

The interaction between BID and the loan-to-deposit ratio, dividend payout ratio, and non-performing assets is statistically significant at the 1% level. Thus, BID interactions with the loan-to-deposit ratio, dividend payout ratio, and non-performance assets are significant factors affecting changes in sustainable growth. Conversely, there is evidence that operating margins have a positive relationship with sustainable growth, implying that an increase in the former leads to an increase in the latter. In magnitude, a one-unit increase in the operating margin would lead to a 0.0391 unit increase in sustainable growth [OPM = 0.0391, t-test = 5.08, pro = 0.00 < 0.05]. The results were statistically significant at the 1% level. Therefore, the operating margin is also a significant factor influencing changes in sustainable growth. The Wald test chi-square of 60.86, and probability of 0.00 < 0.05, was employed to test the null hypothesis that the interaction of BID and LDR has no significant impact on the SGR. Since the probability of 0.00 < 0.05 is statistically significant, the hypothesis is rejected in favour of the alternative that the interaction of BID and LDR significantly impacts SGR.

DISCUSSION

Consistent with the RBV, the observed insignificance between BID and LDR highlights the distinct roles and capabilities of outside directors (non-executive directors) and insiders (executive directors) as strategic resources available to banks. The RBV posits that internal resources and capabilities are essential for firms to attain an efficient LDR management competitive advantage (Lockett et al., 2009). These results suggest that the board's independence per se may not influence LDR but rather the skills and knowledge of executive

directors. From the perspective of stakeholder theory, executive directors are vital bank stakeholders. This result is consistent with the findings of Bhagat and Black (1999), who highlight the importance of executive directors as shareholders' agents in managing the day-to-day operations of a company. While the RBV supports the hypothesis that BID brings unique financial expertise to the firm and may include experience in business strategy, human resource management, law, marketing, and stakeholder relations, BID may not necessarily equate to LDR management expertise. This result is consistent with the findings of Minton et al. (2011), who state that although the financial expertise of independent directors is a significant factor during the global financial crisis when risk exposures are controlled for, its presence is not statistically significant to performance. According to Minton et al. (2011), these results are consistent with the notion that companies with more independent financial experts on their boards take on more risk and perform poorly during a financial crisis.

Similarly, Delis and Papanikolaou (2009) conclude that the relationship between BID and LDR is negligible, implying that insider directors may play a crucial role in navigating LDR. Independent board members are typically more focused on long-term strategies and risk management. Although LDR can have long-term consequences, it is typically viewed as a short-term issue managed by the bank's CEO, executive director responsible for risk management, and treasurer. BID, on the other hand, focuses on long-term goals (Coles et al., 2008). Based on the estimation results for the second hypothesis, this study confirms that the dividend payout ratio, operating margin, and bank size are statistically significant factors influencing sustainable growth. These findings confirm those of Radasanu (2015), who discovered that dividend policy, financial policy, and profitability influence SGR. Notably, the statistical significance of the relationship between pricing strategy and operating efficiency of bank proxies as measured by operating margin and SGR is at the 1% level. This implies that highly efficient and strategic banks have a higher SGR in terms of operating margins. These findings are consistent with those of Delis and Papanikolaou (2009) and Kalluru and Bhat (2009) and confirm the impact of profitability on SGR. This study reveals a positive relationship between the CAR and SGR, which correlates with the operating margin of banks. This suggests that banks with more capital are more efficient and less prone to excessive risk. Supporting studies by Grigorian and Manole (2002), Tecles and Tabak (2010), and Naceur et al. (2009) found a positive relationship between a bank's CAR and its efficiency.

Additionally, this study affirmed a statistically significant relationship between bank size and the SGR. Rahim (2017) reports a similarly positive and significant relationship

between a company's size and SGR. This finding is significant considering that the sample banks in this study include at least six banks that can be classified as domestically systematically important or 'too big to fail' banks, given their massive asset size and the consequence of a contagion effect should any bank fail. The literature on bank size and the SGR has always presented inconsistent results, as El Madbouly (2022), Vuković et al. (2020), Mamilla (2019), and Mumu et al. (2019) reported a negative and significant relationship between company size and SGR. These studies attribute this negative relationship to diseconomies of scale, suggesting that the more a company grows, the more risks it takes, which creates diseconomies of scale. Although Vuković et al. (2020) assert that this negative relationship is temporary and reverses when a company reaches the optimal size, company size has a positive relationship with SGR. Based on the results of this study, large banks can generate enormous resources, including human resources, through a large board size of knowledgeable board members. Resources such as materials, technology, services, and products significantly and positively affect banks' operating margins. Therefore, this positive relationship between bank size, operating margin, and SGR aligns with that of Athanasoglou et al. (2008), who also report a positive relationship between bank size and operating efficiency.

The parameter estimates derived from the analysis of Hypothesis Three indicate a negative relationship between BID with LDR and sustainable growth. In addition, an increase in operating margins correlates positively and significantly with sustainable growth, indicating that banks can improve their growth prospects by increasing their operating margins. Contradicting the findings of Mamilla (2019), who discovered a statistically significant negative correlation between asset efficiency and SGR, this result demonstrates a positive correlation between asset efficiency and SGR. In addition, the interactions between BID and LDR (loan-to-deposit ratio), dividend payout ratio, and asset quality (non-performing assets) are statistically significant at the 1% level, indicating that these variables influence the SGR of banks. These findings are consistent with Das and Ghosh (2006) and Lotto (2018), who state that a significant relationship between capital regulation and operating margins contributes to banks' SGR through increased efficiency. Although the presence of independent directors on the board does not affect the SGR of banks, the role of outside directors in monitoring and oversight functions improves the LDR management of banks.

Intriguingly, CBN regulatory and prudential policies account for all four factors that significantly impact banks' SGR. The CBN requires banks to have boards with a majority of independent directors and no more than 20 individuals. Existing prudential guidelines mandate

that Nigerian banks maintain asset quality (non-performing assets/total loan (NPL) ratio of no more than 5% and an LDR of at least 65%). In its revised regulatory capital guidelines published in 2021, the CBN instructed banks with national and international authorisation to maintain respective CAR levels of 11.00% and 16.50%. In addition, the regulatory policy prohibits banks from paying dividends if their CAR falls below the minimum requirement. In addition, banks with NPLs exceeding 10.00% are not permitted to pay dividends, and banks with CARs at least 300 basis points above the minimum permissible level and NPLs above 5.00% but less than 10.00% would have a dividend payout cap of 75.00%. Therefore, adhering to all regulatory and prudential guidelines and corporate governance mechanisms for the bank's long-term growth is in the best interests of shareholders and other stakeholders.

This study investigates the factors affecting banks' sustainable growth and offers a novel perspective on corporate governance and risk management. It employs agency, RBV, and stakeholder theories to clarify the intricate relationship between the BID, executive directors, risk, and sustainable growth. The agency theory emphasises the significance of internal resources and capabilities in achieving competitive advantages. In contrast, the stakeholder theory emphasises the importance of adhering to regulatory and prudential standards for sustained bank growth. The results are economically significant because banks occupy a prominent position in the macroeconomic environment. The dividend payout ratio, correlated with banks listed on stock exchanges, operating margins, and bank size, is essential for long-term growth. Compliance with regulatory and prudential guidelines stabilises and protects the banking sector from excessive risks, ensuring long-term economic growth and contributions to the economy and well-being of the people. This study can influence investment decisions and increase market confidence in the banking sector by demonstrating that banks with superior corporate governance, risk management, and regulatory guidelines perform better, decreasing the likelihood of bank failure and financial crises.

CONCLUSION

The incessant financial crisis created by banks needs researchers to pay more attention to the sustainable growth rate of banks. Therefore, this study offers empirical insights into the relationships and interactions between corporate governance, liquidity risk, and banks' SGR. The dividend payout ratio, bank size, operating margins, and asset quality are major determinants of the SGR of banks. The operating margin, dividend payout ratio, asset quality, and bank size are highly significant (at the 1% significance level) factors influencing banks'

SGR. Moreover, banks with higher operating margins tend to be more efficient and employ more robust risk management procedures, and banks diversifying their revenue streams achieve a higher SGR over the long term. These findings have significant implications for banks seeking to enhance their financial performance and attain long-term growth in increasingly competitive markets. The findings also support the CBN's regulatory imperative to set the minimum LDR as a prudential requirement for banks in Nigeria. The LDR regulations appear to recognise that BID does not impact the LDR of banks, as executive directors also bring unique resources that are required for the daily management of liquidity risk of the banks in line with the resource base view theory and the need for banks to continue to play an indispensable role in credit creation. Therefore, the LDR rule is an element of the regulator's macroprudential policy, implying that bank management is more obligated to manage LDR.

Moreover, although the literature on bank size and SGR is context-specific and intricate, this study finds a positive relationship between bank size and SGR. Larger banks are favoured when economies of scale are juxtaposed with a positive correlation between operating margins and bank size. Enhanced operating margins have a positive effect on SGR. In general, the SGR of banks is affected by internal corporate governance mechanisms and liquidity risk. Even though banks need an optimal or minimum SGR to achieve their long-term goal of remaining a going concern for the intermediation between the deficit and surplus units of the economy, excessive growth can also cause issues. Therefore, it is the responsibility of shareholders and other stakeholders to continually monitor the progress of their bank, manage risk more effectively, and allocate resources efficiently, thereby enhancing operating margins and sustaining steady growth.

However, there is a limitation of this study that future research should focus on. Based on the descriptive statistics, the average SGR of banks in Nigeria over 14 years was 8.49%. This figure is higher than that reported by Altahtamouni et al. (2022) (0.08%) based on a sample of banks in Saudi Arabia and Al-Slehat and Altameemi (2021) (0.09%) based on a sample of commercial banks in Jordan. In addition, Kessy et al. (2021) conducted a study on banks in Tanzania and reported 11.56 %. Therefore, future studies could determine the optimal SGR for the banking industry by considering various external and internal factors that may influence the SGR in a given context. In addition, several studies have indicated an inverse correlation between a company's size and its ability to achieve sustainable growth. Subsequent investigations may delve deeper into this correlation, scrutinising the plausible drawbacks of scale inefficiencies and their impact on the viability of banks' long-term growth prospects.

Given the dynamic nature of regulations and guidelines, it would be advantageous for future research to evaluate the impact of these changes on banks' sustainable growth. Such an analysis would provide policymakers with valuable insights, especially in developing countries, where state fragility and inconsistency hinder economic expansion.

This study provides valuable insights into the role of Business Information Disclosure (BID) in managing LDR and its effects on the bank's ability to grow sustainably. It also emphasises the significance of internal resources and capabilities in granting organisations competitive advantages. The research findings expand the scope of agency theory, stakeholder theory, and the RBV theory's application and interpretation within the banking industry. The study highlights the significance of insider directors' roles and strategic resources, highlighting the relevance of bringing distinctive resources to the company. Policymakers must encourage adherence to regulatory and prudential guidelines and balance BID and insider directors' crucial functions in managing LDR. Nigerian banks' average dividend payout ratio is 28.13 per cent, reflecting the sector's intense competition and the banks' high profitability, sales growth, market-to-book value, debt-to-equity ratio, cash flows, and effective tax rate. The CBN's dividend payout cap has been implemented to support the banking industry's sustainable growth. However, the decision by the monetary policy committee (MPC) in September 2022 to increase the bank's total customer deposits to 32.5% has already affected the dividend payout ratio and liquidity. This may explain Nigerian banks' low domestic credit to the private sector as a percentage of GDP, compared to South Africa's average of 61.53 per cent, Egypt's average of 28.10 per cent, and Ghana's average of 12.98 per cent for the same period. The study has implications for practitioners and professionals in the banking industry, emphasising the significance of effective corporate governance, especially LDR management, and enhancing risk management practices. Focusing on these areas may aid banks in navigating LDRs and achieving sustainable growth.

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