JETMASE

Journal of Emerging Trends in Management Sciences and Entrepreneurship
Volume 7(1), Pages 354 - 386 June, 2025
ISSN: 2384-762X
https://www.jetmase.com

Bank Stability and Economic Growth in Selected Sub-Saharan African Countries (2001-2023)

Utochi Onyenwe[1*], Prof Ikenna Egungwu[2], Afamefuna J. Nduka, Ph.D[3] & Chukwuka F. Ndah[4]
Department of Banking and Finance, Chukwuemeka Odumegwu Ojukwu University, Igbariam, Nigeria
Correpondence: utochiiyasei@gmail.com

ABSTRACT: The study examined the effects of bank stability on economic growth in selected Sub-Saharan African (SSA) Countries from 2001 to 2023 using the panel data methodology. The regressor is bank stability measured by capital adequacy, asset quality, bank liquidity, bank z-score, private sector credits, and profit diversification while the regressand is economic growth measured by gross domestic product growth rate (GDPR). Again, the study controlled for political stability and absence of terrorism, government effectiveness, and unemployment rate. The study sourced data from 4 SSA Countries out of the 48 countries situated in SSA Countries. Meanwhile, data were sourced from both the apex banks of the 4 selected Sub SSA Countries and also from the World Bank Data Base over the studied periods. Both the Hausman Test and the Breusch Pagan test evidenced that the Fixed Effect model is the most appropriate model for the study. The study reported that Capital Adequacy and Private Sector Credits exerted positive significant effect on economic growth in SSA Countries. However, asset Quality has a negative minimal effect on economic growth in SSA Countries. Meanwhile, Bank Liquidity and Profit Diversification exerted positive minimal effect on economic growth in SSA Countries. Again, Bank Z-Score has an adverse minimal effect on GDPR in SSA Countries. Hence, the study concludes that, Capital Adequacy and Private Sector Credits are critical to economic growth in SSA Countries. As such, bank regulators in SSA Countries should ensure that bank management in each of the sampled SSA Countries should adhere to its Capital Adequacy Ratio. Lastly, banks in SSA Countries should increase the credits extended to the private sector, if they must record sustainable growth.

Keywords: Bank stability, economic growth, Sub-Saharan African (SSA) Countries

1. INTRODUCTION

The Electronic Library (2021) defines financial stability as the ability of the financial system to support and enhance economic processes, manage risks, and absorb macroeconomic and monetary shocks. The Central Bank of Korea (2021) views financial stability as a condition where the three core components of the financial system remain secure. A stable financial infrastructure ensures the smooth functioning of market discipline, along with the efficiency of the safety net, and payment and settlement systems (Central Bank of Korea, 2021). According to the World Bank (2021), a stable financial system effectively allocates resources, assesses and manages financial risks, maintains employment, among other functions.

Globally, the stability of the banking sector is widely recognized as a cornerstone for financial sector development and, by extension, sustainable economic growth. The 2008 global financial crisis triggered in the United States by the collapse of the subprime mortgage market and the spread of complex financial instruments like collateralized debt obligations (CDOs) exposed significant weaknesses in the global financial system (Antao & Karnik, 2022; Nwanolue, Ezeabasili & Obiora, 2018).

Key contributing factors included excessive bank leverage, inadequate risk assessment, weak regulatory oversight, and deep economic interconnectedness through international capital flows and derivatives markets (Asiedu & Atakli 2020).. These systemic vulnerabilities culminated in widespread financial instability, triggering recessions across advanced and emerging economies. The stability of banking systems is a cornerstone of economic development, particularly in emerging regions like Sub-Saharan Africa (SSA), where financial systems are often characterized by structural vulnerabilities and limited access to formal financial services. In SSA, where financial markets are often underdeveloped and informal sectors dominate, the stability of the banking system becomes even more crucial for fostering sustainable economic growth. Bank stability, typically characterized by the resilience of financial institutions to shocks, adequate capital buffers, and sound risk management practices, is essential for maintaining public confidence and ensuring the uninterrupted provision of credit and other financial services (Bishnu & Mohammad 2016).

Recent empirical studies underscore the multifaceted role of bank stability in influencing economic outcomes in SSA. For instance, Ugochukwu, Ezeabasili & Ostar (2020) identifies a critical threshold in the financial stability gap beyond which private investment is adversely affected, highlighting the importance of liquidity and sound financial practices in sustaining investor confidence.

Similarly, Dahmani and Makram (2024) assert that a stable banking environment is integral to fostering sustained economic growth, particularly in regions prone to volatility, by mitigating risks and uncertainties that often impede development. Moreover, the interplay between financial inclusion, bank stability, and economic growth has been a subject of recent scholarly attention. Jima and Makoni (2023) explore the causal relationships among these variables, suggesting that enhancing financial inclusion and ensuring bank stability are pivotal for promoting economic growth in SSA (Dashmir & Borce 2021). Their findings imply that policies aimed at strengthening financial institutions and expanding access to financial services can have a synergistic effect on economic development

According to Faris, Nasif, & Alshubiri (2017), factors such as non-performing loans, weak regulatory enforcement, and limited access to financial services, particularly in rural areas, can undermine the banking sector's ability to support productive investment, reduce poverty, and stimulate inclusive growth. Furthermore, the impact of bank stability on economic growth may vary across countries due to differing institutional frameworks, governance structures, and economic conditions.

This study aims to delve deeper into the relationship between bank stability and economic growth in SSA, examining how various dimensions of bank stability such as capital adequacy, asset quality, management quality, earnings, and liquidity affect economic performance. By employing advanced econometric techniques and utilizing recent data, the study seeks to provide nuanced insights that can inform policy interventions aimed at enhancing the stability of the banking sector and, consequently, fostering sustainable economic growth in Sub-Saharan Africa.

Despite the increasing attention paid to financial sector development in Sub-Saharan Africa (SSA), the region continues to grapple with macroeconomic instability, low investment rates, and fragile banking systems (Daly & Frikha, 2016; Ezenwaka & Okoro,

2020). While global literature recognizes the role of financial stability in driving economic growth, there remains a significant gap in understanding how this relationship manifests within the unique socio-economic and institutional context of SSA. Many countries in the region are still characterized by high non-performing loan ratios, weak regulatory framework, and limited financial access, all of which can compromise the effectiveness of the banking sector as a catalyst for growth (Fungáčová & Laurent, 2016). Moreover, existing empirical evidence on the relationship between bank stability and economic growth shows mixed and often inconclusive results. For example, Ozili (2018) highlights how banking stability drivers differ across crisis periods, while Ojiegbe, Oladele, and Makwe (2016) show positive but variable effects of bank liquidity on Nigeria's economic growth. Fungáčová and Laurent (2016) further noted that weak regulation and high non-performing loans can diminish the positive impact of liquidity on growth.

In contrast, studies from other regions reveal further complexities. Abbas, Ali, and Ahmad (2021) find that in selected Asian emerging economies, the interplay between capital, liquidity, and profitability only manifests when economic growth is included, indicating a conditional relationship rather than a direct effect. Neelam (2020) shows that in Nepal, private sector credit positively influences growth only in the long run, with feedback effects in the short run, suggesting bidirectional causality. Jumono et al. (2021) confirm a positive impact of bank liquidity on economic growth in Indonesia, reinforcing the growth-enhancing view of financial stability. However, Zaidi, Hina, and Rupeika-Apoga (2021) demonstrate that liquidity's effects are mediated by institutional quality and governance, especially during volatile periods, pointing to the nuanced and context-specific nature of the relationship.

These divergent findings ranging from positive effects, conditional dynamics, reverse causality, to institutionally mediated impacts highlight the inconclusive and context-dependent nature of the bank stability growth nexus. This study, therefore, aims to address this gap by providing region-specific empirical evidence for SSA, using robust panel data techniques and comprehensive stability indicators that capture both conventional and unconventional aspects of financial stability.

The main objective of this study is to investigate the effect of bank stability on economic growth SSA countries. Specifically, this study seeks to examine how Capital Adequacy, Bank Liquidity, Bank Z-Score and Private Sector Credit affects economic growth in selected SSA countries. Hypothetically, Capital Adequacy, Bank Liquidity, Bank Z-Score and Private Sector Credit has no significant effect on Economic Growth.

2. LITERATURE REVIEW

2.1.1. Bank Stability

The term banking sector stability though it has gotten wide scholarly attention is yet to have a common definition (Ozili 2019). This is because of its multifaceted nature. Firstly, banking sector's stability is simply defined as the ability of the financial system to dissipate economic imbalance arising from macro-economic and monetary policy shocks (Abbas, Ali, & Ahmad 2021; Ighomereho & Ezeabasili, 2013). The Central bank of Korea (2021) viewed financial stability as a condition in which the three major components of the financial system are safe. The emphasis here is on the stability of financial institutions, markets, and infrastructure. More explicitly, the financial institutions are said to be stable if it they are sound enough to carry out their fiduciary responsibilities adequately without external funding. Moreover, financial stability is considered a continuum, changeable over time and consistent with multiple combinations of finance's constituent elements. Furthermore, Ozili and Thankom (2018) conceptualize financial stability as a situation if there is no disruption in credit supply and payment system. The emphasis here is on the shock-absorbing capacity (resilience) of the financial system. In the same vein, Abugri, Osah, and Andoh (2016) explain that a stable financial system is one that continues to perform its fundamental roles irrespective macro-economic and monetary policy shocks. In other words, a stable financial system is one that does not vary substantially over short periods irrespective of economic vagaries.

2.1.2 Capital Adequacy

Capital adequacy (CAR) remains one of the commonest conventional measures of bank stability. This is because it determines the financial resistance of the banking industry to shocks. In other words, it takes into account the most important financial risks credit, foreign exchange, and interest rate risks, and off-balance sheet operations risk (IMF, 2020). To further buttress this, Ozili (2019) noted that, CAR accounts for the internal strength of

the bank alongside its ability to absorb external shock. Pavković, Hrgović and Cesarac (2018) added that, CAR performs protective, ownership, and regulatory function. This implies that high CAR connotes a high financial resilient banking sector while a low CAR is signpost for high risk exposure. As such, a well-capitalized bank faces lower risks of going bankrupt. This is because huge bank capital reduces costs of funding as well protects debtors of the bank from incurring unreasonable losses. However, it is not without downsides in that it induces weak demand for liability.

2.1.3 Bank Liquidity

The term bank liquidity remains one of the most important conventional measures of bank stability. The term bank liquidity is simply the ease with which assets of banks can be en-cashed in time of need or its fair value (Allen, Berger, & Sedunov, 2016). In other words, bank liquidity is the ability of the bank to meet immediate cash, cheques, other withdrawal demands and legitimate new loan demand while abiding by existing reserve requirement. Similarly, Abbas, Ali, and Ahmad (2021) defined liquidity as the ability of a bank to meet its maturing obligation without incurring unacceptable losses. However, if a bank is unable to meet its maturing obligation such bank is said to be illiquid or faced with high liquidity risk. Hence, a bank is said to be liquid when it has sufficient cash and other liquid assets, together with the ability to raise funds quickly from other sources, to enable it to meet its payment obligation and financial commitments in a timely manner. One of the major sources of bank liquidity according to Ozili (2019), is Money Market Instruments such as Treasury bills, Treasury Certificate, Money at Call, State and Local government Securities (Bonds), Bankers Acceptance, Promissory notes, Commercial Papers etc. this is because these assets are highly liquid and low risk (Adedeji & Ezeabasili, 2018)

2.1.4 Private Sector Credit (GDP):

Another indicator of financial instability is *excessive* credit growth with emphasis on the word "excessive." While credit expansion is expected in a well-developing financial sector, rapid and unsustainable growth is a strong and consistent predictor of banking crises. Furthermore, the private sector recognizes that investments in financial inclusion can also improve market prospects in the future. Accordingly, this parameter is used to appraise a country's level of financial development, defined as the ratio of private credit of deposit money banks to GDP

following the approach of González and Suárez (2016) for measuring banking stability at country level.

2.1.5 Bank Z-score:

Bank Z-score is a commonly used measure of stability at the level of the individual institutions. Many scholars after the global financial crises of 2008/2009, critically examined the issue of bank insolvency, among four (4) major proxies such as non-performing loan ratio, Z-score, CAPM risk measures, and Z-risk index to measure bank stability, but the Z-score became the most prominent proxy of them all. This is because it measures the distance-to-default and is indirectly (inversely) related to the like-hood of banks' insolvency (Koskei, 2020).

To assess a bank's solvency risk, it explicitly compares buffers (capitalization and returns) with risk (volatility of returns). The z-score is defined as $z = (k+\mu)/\sigma$, where k represents equity capital as a percentage of assets, return as a percentage of assets, and standard deviation of return on assets as a proxy for return volatility.This parameter implies that higher z-score indicates that such bank ismore stable while lower z-score indicates that such bank is unstable (insolvent).

2.1.5.1 Systemic Stability

Systemic stability refers to the resilience and soundness of the entire banking and financial system rather than individual institutions alone. It underscores the importance of preventing contagion effects, where the failure of one bank can precipitate widespread financial distress, thereby undermining overall economic growth. Maintaining systemic stability requires regulatory oversight, macroprudential policies, and robust crisis management to monitor interconnected risks among banks and other financial entities (Amadi et al., 2021; Peterson & Ozili, 2018).

In Sub-Saharan Africa, systemic stability is particularly vital due to the relative fragility of financial systems and susceptibility to external shocks (Dwumfour & Adjei, 2016; Ifeoma, 2011). Strong systemic stability enhances confidence in the banking sector, ensuring continuous credit supply and fostering sustainable economic growth (Kamal, Hussain & Khan, 2021; Ezeabasili & Amaefuna, 2024).

2.1.5.2 Risk Resilience

Risk resilience is a bank's ability to absorb and recover from shocks arising from credit defaults, liquidity shortages, market volatility,

or operational disruptions. This capacity relies on adequate capitalization, diversified income sources, and sound risk management practices that limit exposure to volatile risks (Abedifar, Molyneux & Tarazi, 2018; Abugri, Osah & Andoh, 2016). In emerging markets like SSA, where financial and political instability is more common, risk resilience is a critical factor in sustaining bank operations during downturns (Dwumfour & Adjei, 2016). Resilient banks can maintain lending activities, thereby supporting economic activities even amid adverse conditions (Abbas, Ali & Ahmad, 2021; Okoro, 2016).

2.1.5.3 Asset Quality

Asset quality measures the creditworthiness of a bank's loan portfolio, indicating the level of risk from potential loan defaults. High asset quality, marked by low non-performing loans (NPLs), ensures steady income generation and capital preservation. Conversely, poor asset quality increases the risk of bank distress and constrains credit growth (Hasan, Serhat & Zafer, 2018; Ahmad et al., 2019). Studies on SSA banks show that high levels of NPLs undermine financial stability and impede economic growth by restricting banks' lending capacity (Abhigale, 2016; Asiedu & Atakli, 2020). Therefore, maintaining good asset quality through prudent credit appraisal and monitoring is fundamental for stable banking sectors that can contribute positively to economic development (Karim, Muhamat & Jaafar, 2019).

2.1.5.4 Profitability

Profitability reflects a bank's capacity to generate sustainable earnings, which is crucial for capital accumulation, operational expansion, and shock absorption. Profitable banks tend to be more stable and capable of extending credit to support economic growth (Klein & Weill, 2020; Abbas, Ali & Ahmad, 2021). In SSA, profitability is often challenged by market inefficiencies, regulatory costs, and credit risks but remains an essential determinant of bank soundness (Dwumfour & Adjei, 2016). Furthermore, sustained profitability enhances depositor confidence and attracts investment, reinforcing financial sector stability and enabling banks to contribute effectively to economic development (Abidin et al., 2021).

2.1.5.5 Risk Management

Risk management encompasses the identification, assessment, and mitigation of risks such as credit, market, liquidity, and operational risks. Strong risk management frameworks mitigate the likelihood and impact of adverse events, thereby supporting bank stability (Ahmed, Qasim & Tahar, 2020; Ekanayake & Wanamalie, 2017). In SSA, where regulatory environments may be less

developed, enhancing risk management practices is critical for protecting banks against shocks and fostering resilient financial systems (Dwumfour & Adjei, 2016). Effective risk management also supports regulatory compliance and promotes sustainable lending, which are essential for economic growth (Kalyvas & Nguyen, 2018; Okoro & Anichebe, 2019).

2.15.6 Tier 1 and Tier 2 Capital

Tier 1 capital comprises core equity and retained earnings, representing the highest quality capital available to absorb losses without disrupting operations. Tier 2 capital includes supplementary elements like subordinated debt and loan loss reserves (Karim, Muhamat & Jaafar, 2019). Both capital tiers together form the regulatory capital base essential for bank resilience. In SSA, maintaining adequate Tier 1 and Tier 2 capital helps banks absorb unexpected losses, meet regulatory thresholds, and maintain market confidence, which collectively contribute to financial stability and economic growth (Peterson & Ozili, 2018; Dwumfour & Adjei, 2016).

2.1.5.7 Minimum Capital Requirement

Minimum capital requirements ensure banks hold a baseline level of capital proportional to their risk exposure, protecting depositors and the financial system against insolvency risks. Regulatory frameworks, including those based on Basel accords, mandate these requirements to promote prudent banking operations (Karim, Muhamat & Jaafar, 2019; Kalyvas & Nguyen, 2018). In SSA, adherence to minimum capital requirements has been shown to reduce bank fragility and encourage sound lending practices, which are essential for economic stability and growth (Dwumfour & Adjei, 2016; Peterson & Ozili, 2018; Chukwujekwu & Ezeabasili, 2019;Ugwu, Eboatu, Okoro & Okeke, 2022).

2.1.5.8 Basel Accords

The Basel Accords are internationally recognized regulatory standards aimed at enhancing bank capital adequacy, risk management, and liquidity. Basel III, the most recent framework, strengthens capital quality, introduces liquidity coverage ratios, and addresses systemic risk (Karim, Muhamat & Jaafar, 2019). Implementation of Basel guidelines in SSA remains varied but is critical for aligning banking regulations with global best practices, thereby improving bank stability and facilitating sustainable economic growth (Kalyvas & Nguyen, 2018; Amadi et al., 2021; Ubahi, Patience & Okoro, 2025). Basel frameworks also encourage transparency and better risk governance, which support investor confidence and financial development.

2.1.5.9 Too Big to Fail

The "Too Big to Fail" (TBTF) doctrine pertains to financial institutions whose collapse would threaten systemic stability, prompting government bailouts to prevent broader economic fallout (Peterson & Ozili, 2018; Okoro & Ekwunife, 2022). While TBTF interventions can stabilize markets short-term, they can also foster moral hazard, incentivizing excessive risk-taking by large banks (Dwumfour & Adjei, 2016; Okoro & Offor, 2019). Understanding TBTF is crucial in SSA banking regulation to design resolution frameworks that minimize systemic risks without encouraging reckless behavior by large institutions (Amadi et al., 2021; Okeke, Bebedeth & Okoro, 2025).

2.1.5.10 Too Small to Save

The "Too Small to Save" (TSTS) concept highlights that smaller banks, though individually less systemic, collectively pose risks to financial stability if many fail simultaneously (Peterson & Ozili, 2018). In SSA, smaller banks often serve critical roles in financial inclusion and credit provision to SMEs. Their fragility can impact economic growth if not properly managed (Dwumfour & Adjei, 2016). Hence, regulatory frameworks must also address the vulnerabilities of smaller banks through tailored supervisory approaches to ensure a stable and inclusive banking system (Amadi et al., 2021; Ethel, 2022; Ifeoma, 2011).

2.1.6 Economic Growth

The term economic growth is widely acknowledged as the annual rise in the value of all finished goods and services produced in a country over a given period of time. It is one of the parameters with which countries all over the world are considered as either being developed, under-developed and developing. Again, it remains one of the most viable tool through which country's economic policies are judged.

Although, economic growth can either be measured by either real gross domestic product or nominal gross domestic product but most scholars like Williams (2016) and Ozili (2017) prefer using real gross domestic product since it considers both inflation and deflation rate in its computation unlike nominal gross domestic product. Considering the fact that the most common measure of economic growth is the nominal gross domestic product, the study used gross domestic product to measure economic growth.

Furthermore, it is well acknowledged that the level of economic growth (GDP growth rate)

affect the financial system stability (Nortzitah, & Muahmmad, 2016). Hence, the smooth running of an economy depend on the existence of adequate financial infrastructure in terms of the entire set of legal and regulatory systems, accounting, payments systems, credit reporting and securities markets. As such, a stable financial system is one that supports economic growth and development while financial instability deters economic growth and development.

2.2 Theoretical Framework

This study is anchored on the Eclectic Theory, originally developed by John Dunning in the late 1970s, which integrates multiple perspectives to explain how banks make strategic decisions by balancing internal strengths, external conditions, and operational choices. The theory emphasizes three core components: Ownership advantages (unique internal capabilities of the bank), Location advantages (economic, regulatory, and market conditions of the operating environment), and Internalization advantages (whether activities are performed internally or through partnerships).

In the context of this study, the Eclectic Theory provides a comprehensive framework to understand how banks in Sub-Saharan Africa leverage their capital base, liquidity management, risk controls, and market positioning to maintain financial stability and support economic growth. It posits that banks' ability to sustain stability and extend credit effectively depends on optimizing these combined advantages.

This theory directly guides the present study by offering a holistic approach to analyzing bank stability, where capital adequacy is viewed not only as a regulatory necessity but also as an ownership advantage that enhances competitive strength. Location advantages such as country-specific regulatory frameworks, macroeconomic stability, and market dynamics affect banks' operational decisions and risk exposures. Internalization advantages explain why banks might choose to manage certain risks internally through capital buffers or diversify credit portfolios strategically.

By applying the Eclectic Theory, the study highlights the importance of integrating internal bank capabilities with external environmental factors to understand how financial stability is achieved and maintained in SSA countries. This approach informs the analysis of key indicators such as capital adequacy, liquidity ratios, z-scores, and

private sector credit, and how they collectively influence economic growth. Thus, the Eclectic Theory not only underpins the conceptual framework but also shapes the empirical expectations of the study, emphasizing the multifaceted nature of banking sector stability.

2.3. Empirical Review

Kerrouche and Bendahmane (2022) examined the relationship between domestic credit provided by the financial sector and economic growth in Algeria. The study spanned from 1970-2018. The study adopted the least squares method which was used to estimate the linear regression model of multiple regression. The study laid claim that private sector credits has a positive significant impact on and the growth of gross domestic product during the period between 1990 and 2018 while there is an inverse relationship between loans directed to the economy as a whole (consisting of 80 percent of loans directed to the public sector) and GDP.

Dashmir and Borce (2021) examined the impact of the Private Sector Credits On the Economic Growth in the Republic of North Macedonia from 1996-2018. The study subjected the model to White test, for autocorrelation - Durbin-Watson statistics and Serial Correlation LM test, and for normal residual layout - Jarque-Bera test before running the main regression. The study laid claim that private sector have a positive significant effects on the Republic of North Macedonia economy.

Abbas, Ali, and Ahmad (2021) examined the interplay between economic growth and capital, liquidity and profitability of commercial banks in selected Asian emerging economies from 2011 to 2019. The study adopted the two stage lease square (2SLS) regression analysis. The outcome demonstrates that inter-relationship between banks' capital, liquidity, and profitability are only possible only when economic growth is considered. More so, market funding, loan ratio, credit risk, bank size and bank efficiency are significant indicators to influence commercial banks' liquidity, profitability and capital in Asian emerging economies.

Jumono, Iskandar, Adhikara, and Mala (2021) examined the effects of bank liquidity on economic development in Indonesia from 2008 to 2019. This research uses Vector Auto-regressive model. The variables considered include liquidity, and non-performing loan, inflation, and economic growth. The study reported that bank liquidity on the overall have positive

significant impacts on economic growth of Indonesia in the study periods.

Zaidi, Hina, and Rupeika-Apoga (2021) investigated the country-level determinants of liquidity synchronization on economic growth volatility in Bangladesh, China, India, Indonesia, Malaysia, Pakistan and the Philippines from 2010 to 2019. The study adopted the panel data methodology. The empirical findings show that poor investor protection, political instability, weak rule of law and government ineffectiveness are major drivers of bank liquidity synchronicity. Moreover, levels of bank liquidity synchronicity are higher in a period of economic growth volatility.

Abuselidze (2021) examined the impact of competition and efficiency on financial stability of the European banking industry. The independent variable is Boone indicator and Z-score. Meanwhile, bank efficiency was measured by capital adequacy and . The study adopted the Generalized Methods of Moments. The study disclosed that competition (Boone indicator and Z-score) and efficiency (capital adequacy and) have positive significant impact on financial stability of Bangladeshi banks.

Dutta, and Mallika (2021) examined the impact of competition and efficiency on financial stability of Bangladeshi banks over 2009–2017. The independent variable is Boone indicator and Z-score. Meanwhile, bank efficiency was measured by capital adequacy and . The study adopted the Generalized Methods of Moments. The study disclosed that competition (Boone indicator and Z-score) and efficiency (capital adequacy and) have positive significant impact on financial stability of Bangladeshi banks over 2009–2017.

Ijaz, Hassan, Tarazi and Fraz (2020) investigated the effect of bank competition and financial stability on economic growth of 38 European countries from 2001 to 2017. Bank competition is measured with the Boone indicator, and bank stability with Z-scores and non-performing loan ratio. The study variables were conducted at aggregate level. The study adopted the generalized method of moment (GMM). Results show that bank stability significantly contributes to economic growth in Europe. Meanwhile, economic growth fell during both the global and the local banking crisis suggesting the need for a resilient banking system. Moreover, lower banking competition spurred economic growth and also increased the EU's financial stability.

Neelam (2020) examined the impact of commercial bank credit to the private sector

on the economic growth in Nepal from supply side perspectives. The study applied the Johansen co-integration approach and Error Correction Model using the time series data for the period of 1975-2014. The empirical results show that bank credit to the private sector has positive effects on the economic growth in Nepal only in the long run. Nevertheless, in the short run, it has been observed a feedback effect from economic growth to private sector credit.

Uttam-Chandra (2020) examined The Causal Relationship between private sector credit growth and economic growth in Bangladesh over the period of 1976-2017. The study adopted the Autoregressive Distributed Lag (ARDL) Approach. The study affirmed that private sector credit (PC) and industrial production index (IPI) have positive significant effect on annual growth rate of GDP in both long-run and short-run.

Olorunmade, Samuel and Adewole (2019) examined the determinants of private sector credit and its implication on Economic Growth in Nigeria from 2000-2017. Simple regression technique was used to achieve stated objective. The study affirmed that private sector credit have positive significant effects on economic growth in Nigeria in the studied periods.

Soedarmono, Machrouh, and Tarazi (2019) examined the effects of bank competition, stability on economic growth taking into consideration market power in Asia. The study patterned after the panel data methodology. The study reported that results that higher economic growth encourages banks in less competitive markets characterized by low capital base and low . Meanwhile, banking industry's ownership (monopolistic structure) has a beneficial impacts on the economy as a whole since it encourages banking industry's stability.

Karim, Muhamat and Jaafar (2019) examined bank stability comprehensive measures with focus on selected Organization of Islamic Cooperation (OIC) countries with dual banking systems. The study spanned from 1999 to 2015. Meanwhile, the study obtained data from the Bank scope database. The study patterned after the factor analysis method as stipulated by the Organization of Economic Co-operation and Development (OECD).

The study affirmed that bank stability comprehensive measure (bank capital base, asset base, and management efficiency) improves the earnings capacity of the banking industry. More so, the more stable the banking industry becomes, the higher the growth of the economy.

Afiantara, Mahawan, and Budiarto (2019) examined the predicting model of banking stability in Indonesia. Bank stability indicators considered covers money markets proxies (treasury bills), capital markets proxies (market capitalization), macro-economic indicators (inflation rate), and bank-specific proxies (capital adequacy, and management efficiency). The study sourced data from CEIC and SEKI (Indonesian Economic and Financial Statistics) from 2004 and 2011. The study patterned after the Principal Component Analysis through the aid of the Random Forest Regression. The study affirmed that money markets proxies (treasury bills), capital markets proxies (market capitalization), macro-economic indicators (inflation rate), and bank-specific proxies (capital adequacy, , and management efficiency) are efficient measures of bank stability in Indonesia. Further, bank-specific proxies (capital adequacy, , and management efficiency) specifically are instrumental to the growth of the Indonesian economy.

Swamy (2019) investigated the inter-relatedness and the dynamics of banking stability measures in improving emerging economies. Variables considered include: bank-specific/bank soundness index variables such as liquidity, , capital adequacy and profitability, and vulnerability index. The study employed the robust panel vector auto regressive (VAR) methodology drawn from 56 leading banks for a period of 12 years. The study reported that bank liquidity is reciprocally related with , capital adequacy, and bank profitability. Again, bank liquidity is ineffective in forecasting banking stability. Further, bank liquidity, , capital adequacy, and bank profitability improves economic growth.

Faris Nasif Alshubiri, (2017) investigated the impact of financial stability indexes on financial growth in the Oman banking industry. The independent variable is financial stability indexes measured by financial growth index variables (bank credit to GDP (%), bank deposits to GDP (%), using the Herfindahl-Hirschmann index), financial sensitivity index (inflation rate, GDP growth and fiscal balance as percentage of GDP), financial safety index variable (financial safety index measured by debt to GDP ratio (%), z-score). Meanwhile, the dependent variable is financial growth measured by broad money (M2) growth. The study covered six (4) commercial banks listed in Muscat Security Market (MSM) from 2008-2014. This study used OLS regression analysis. The study disclosed that financial growth index variables, financial sensitivity index variables and financial safety index variables except z-

score variable on broad money growth financial stability indexes on broad money growth.

Fernández, González, and Suárez (2016) analyzed the influence of banking stability on the volatility of industrial value added from 110 countries. The study adopted GMM estimates. The study reported that banking stability measured by Z-score helps reduce economic volatility more in countries with less bank market competition.

Fungáčová and Laurent (2016) examined the effects of bank liquidity on economic development in Russia from 2004–2012. The study modeled after the Berger and Bouwman (2009). The study adopted the GMM estimations. The variables considered include liquidity, and non-performing loan, inflation, and economic growth. The study reported that bank liquidity on the overall have positive significant impacts on economic growth of Indonesia in the study period despite the financial crisis.

Ojiegbe, Oladele and Makwe (2016) examined the effect of bank liquidity on the economic growth of Nigeria. The study sourced data from the Central Bank of Nigeria (CBN) statistical bulletin from 1980 to 2013. The study was tested using the OLS estimation technique. The study reported that bank liquidity have positive significant effects on economic growth.

Gaps in Literature

The empirical literature investigating the relationship between bank stability and economic growth reveals considerable inconsistencies and important gaps, particularly regarding the context of Sub-Saharan Africa (SSA). Many studies employ variables such as bank liquidity, capital adequacy, profitability, credit risk, non-performing loans, and private sector credit to assess financial stability and its impact on growth (Abbas et al., 2021; Jumono et al., 2021; Neelam, 2020; Zaidi et al., 2021). However, the choice and combination of these variables vary widely across studies, leading to divergent results about the nature and strength of the relationship.

Additionally, most prior research focuses on developed or emerging Asian economies over varying periods—some relatively short, such as Abbas et al. (2011–2019) and Zaidi et al. (2010–2019), while others, like Neelam (1975–2014), cover longer horizons but in non-SSA contexts. These differences in study periods, coupled with diverse econometric methods (e.g., 2SLS, VAR, Johansen cointegration, GMM), make direct comparisons difficult and contribute to inconclusive or context-dependent findings.

Notably, SSA remains underrepresented in this body of research, despite its distinct macroeconomic challenges, including fragile banking systems, high non-performing loans, and weak regulatory environments. Furthermore, many existing SSA studies use shorter or outdated time frames, limiting the ability to capture recent financial developments or structural shifts.

Thus, there is a critical need for research that integrates a comprehensive set of bank stability indicators—including both traditional measures (capital adequacy, liquidity, non-performing loans) and broader financial system variables—over sufficiently long and recent periods to better reflect SSA's evolving financial landscape. Employing robust panel data econometric techniques adapted to the region's specificities will help clarify the true nature of the relationship between bank stability and economic growth in SSA.

This study addresses these gaps by using an extended and up-to-date panel dataset covering multiple Sub-Saharan African countries over a relevant recent period, incorporating a broad set of financial stability variables, and applying rigorous econometric methods to generate context-specific and policy-relevant insights.

METHODOLOGY

This study adopts an ex-post facto research design, as it investigates the relationship between bank stability and economic growth using historical data from 2001 to 2023. The variables under consideration such as capital adequacy, bank liquidity, bank z-score, private sector credit, and GDP growth already exist and cannot be manipulated by the researcher. This design is appropriate for analyzing cause-and-effect relationships where the independent variables have occurred naturally over time, allowing the study to evaluate their impact on economic growth across selected Sub-Saharan African countries.

The population of the study covered all the 48 countries from the four regions that make up Sub-Saharan Africa. Specifically, four (4) countries, one from each region were selected (Angola, Ethiopia, Botswana and Nigeria). The study adopted the secondary source of data collection. Accordingly, data for the study were sourced from the Central banks of the countries under investigation and also from the World Bank data base, 2023. Data was analyzed using the panel data methodology. Meanwhile, the Hausman test was used to choose between the FEM and the

Random Effect Model. The null hypothesis of the Hausman test is that the REM is most appropriate for the study. However, the alternative hypothesis holds that the FEM is most preferred instead. However, if its p-value is less than 5%, the null hypothesis is rejected while the alternative hypothesis which states that there are period fixed effects will be accepted. Accordingly, these tests were done through the instrumentality of Econometric Views version 9.0.

3.1 Model Specification

This study modeled after the works of Ozili (2018). Their model is stated below:

$$ZSC = \beta_0 + \beta_1 CAQ + \beta_2 + \beta_3 BAL + \beta_4 MAE + \beta_5 SEM + \mu it \quad (1)$$

GDP = Gross Domestic Product
CAQ = Capital adequacy
BAL = Bank liquidity
ZSC = Bank z-score
MAE = Management Efficiency
SEM = Sensitivity to Market Risk
β_0 = Constant Value
$\beta_{1-} \beta_5$ = Parameter Estimates
μ_t = Parameter Estimates

However, the model for this study is stated below:

$$GDPR = \beta_0 + \beta_1 CAQ + \beta_2 BAL + \beta_3 BZS + \beta_4 PSC + \mu it \quad (1)$$

GDPR = Gross Domestic Product Growth Rate
CAQ = Capital adequacy
BAL = Bank liquidity
BZS = Bank z-score
PSC = Private sector credits
β_0 = Constant Value
$\beta_{1-} \beta_4$ = Parameter Estimates
μ_t = Parameter Estimates

Operational Definition of Terms and Aprioiri Expectation

The operational definition of terms and aprioiri expectation of the variables under investigation are explained in table 3.3.

Table 3.3: Operationalization of Targeted Variables

Code	Target Variable	Measurement	Type of Variable	Aprioiri Expectation
GDPR	Gross Domestic Product Growth Rate	Annual GDP for each sampled countries	Regressand	+
CAP	Capital Adequacy	Regulatory Capital to Risk-Weighted Assets ratio for each sampled countries	Regressor	+
BAL	Bank Liquidity	Each country's bank liquid reserve to bank asset ratio	Regressor	+

		for each sampled countries		
Z-score	Bank –Z score	Z-score for each sampled countries.	Regressed	-
PSC	Private Sector credit to GDP	Contribution of the private sector's credit to GDP for each sampled countries	Regressor	+

Source: Researcher's Compilation (2025)

4.1 RESULTS AND DISCUSSIONS

Descriptive Statistics

The descriptive statistics result provides evidence on the mean distribution, maximum, minimum, standard deviation, median and the count of the data collected which span from 2001 to 2023

Table 4.1: Summary of Descriptive Statistics

	GDPR	CAQ	BAL	BZS	PSC
Mean	2.21E+11	10.97816	21.79053	8.147996	7.665803
Median	9.54E+10	10.23220	21.17010	7.123950	6.217400
Maximum	1.12E+12	20.35630	55.71810	33.20000	24.01080
Minimum	4.48E+09	1.636100	1.638400	2.544000	0.449200
Std. Dev.	2.92E+11	3.834465	12.80228	4.671848	5.384820
Observations	92	92	92	92	92

Source: Researcher's Compilation from E-Views 9 (2025).

From Table 4.1 above, Gross Domestic Product (GDPR) has maximum and minimum values of ₦1.12 trillion and ₦4.48 billion respectively, reflecting a wide disparity in economic output across the sampled countries. Capital adequacy (CAQ) ranges from a minimum of 1.6361 to a maximum of 20.3563. Bank liquidity (BAL) recorded a maximum value of 55.7181 and a minimum of 1.6384. Similarly, bank z-score (BZS) has a minimum of 2.5440 and a maximum of 33.2000, while private sector credit (PSC) ranges between 0.4492 and 24.0108.

In terms of the degree of volatility, bank liquidity (BAL) is the most volatile variable, as it recorded the highest standard deviation of 12.8023. On the other hand, capital adequacy (CAQ) and bank z-score (BZS) also show considerable variability with standard deviations of 3.8345 and 4.6718 respectively. Meanwhile, private sector credit (PSC) has moderate variation with a standard deviation of 5.3848. Gross Domestic Product (GDPR),

with a standard deviation of ₦292 billion, appears less volatile relative to the financial sector indicators, despite its large absolute value, likely due to its broader macroeconomic nature and scale.

Correlation Analysis

The correlation analysis measures the degree of association among the variables and the direction of their relationships. The relationship test is presented in the correlation matrix table below;

Table 4.2: Summary of Correlation Analysis

	GDPR	CAQ	BAL	BZS	PSC
GDPR	1.000000				
CAQ	0.600300	1.000000			
BAL	-0.071412	0.016066	1.000000		
BZS	0.228520	-0.103252	-0.095760	1.000000	
PSC	0.582392	0.171362	-0.252867	0.188917	1.000000

Source: E-Views Output (2025)

Table 4.2 accounts for the degree of correlation among the study variables: capital adequacy (CAQ), bank liquidity (BAL), bank z-score (BZS), and private sector credits. The result shows that there exists a direct and moderate association between capital adequacy (CAQ) and economic growth measured by GDPR (CAQ/GDPR=0.600300). Again, an infinitesimal and negative association exists between bank liquidity (BAL) and economic growth measured by GDPR (BAL/GDPR = -0.071412). More so, bank z-score (BZS), has positive but a very weak association with economic growth measured by GDPR at 0.228520. Closer look at the table disclosed that private sector credits (PSC) has positive and moderate association with economic growth measured by GDPR on a correlation coefficient of 0.58392

Multicollinearity Test

This is the test conducted to see if the explanatory variables contained in our models are highly linearly related. The study used Variance Inflation Factor (VIF) and Tolerance Value to test for the multicollinearity and the result is presented in the table below.

Table 4.3: Multicollinearity Test

Variable	Centered VIF	Tolerance Value=1/VIF
CAQ	4.5085	0.2218

BAL	1.5386	0.6499
BZS	2.0344	0.4915
PSC	2.1261	0.4703
Average	2.5519	0.4583

Source: Author's computation (2025)

From the table 4.3 above, it is shown that the mean VIF is 2.5519 and tolerance value of 0.4583. It is however, the rule of VIF and tolerance value to place a benchmark mean of 10 and 5 for acceptance level. Hence it is assumed that any result that produces mean VIF above 10 and tolerance value of above 5 has a case of high correlation of the independent variables. Since our result is 1.47 and tolerance value of 0.3828, which are far lesser than acceptable level of 10 and 5, the study concludes that there is no presence of multicollinearity in the series.

Regression Results

Both the Lagrange Multiplier Tests for Random Effects and the Hausman Test were used to determine which of the model that it most feasible for the study. Each of the estimation techniques are presented and discussed below:

Lagrange Multiplier Tests for Random Effects

The Lagrange Multiplier Tests for Random Effects (Breusch-Pagan test) was used to choose between pooled OLS and fixed effect. The decision rule of the Lagrange Multiplier Tests for Random Effects (Breusch-Pagan test) is that; accept the null hypothesis which states that the Pooled OLS is most appropriate if its p-value is greater than 5%. However, if its p-value is lesser than 5%, the alternative hypothesis which states that the fixed effect model is most appropriate for the study is accepted instead. Consequently, the Lagrange Multiplier Tests for Random Effects (Breusch-Pagan test) is therefore presented below:

Table 4.4: Lagrange Multiplier Tests for Random Effects

Null hypotheses: No effects
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided
(all others) alternatives

	Test Hypothesis		
	Cross-section	Time	Both

Breusch-Pagan	54.85227 (0.0000)	0.053703 (0.8167)	54.90598 (0.0000)
Honda	7.406232 (0.0000)	-0.231739 --	5.073133 (0.0000)
King-Wu	7.406232 (0.0000)	-0.231739 --	5.562951 (0.0000)
Standardized Honda	10.86376 (0.0000)	-0.088405 --	1.567788 (0.0585)
Standardized King-Wu	10.86376 (0.0000)	-0.088405 --	2.317057 (0.0103)
Gourierioux, et al.*	--	--	54.85227 (< 0.01)

*Mixed chi-square asymptotic critical values:

1%	7.289
5%	4.321
10%	2.952

Source: E-Views Output 9.0. (2025)

From table 4.4 above, all the five (5) tests (Breusch-Pagan test, Honda test, King-Wu tests, Standardized Honda tests, and Standardized King-Wu tests) reported that Fixed effect model is the most appropriate model for the study. This is because while the former has a p-value lower than 5%, the later has a p-value greater than 5%. However, the model was subjected further to determine between the fixed effect models and the Pooled OLS model.

4.3.2. Correlated Random Effects - Hausman Test

Having discovered that the model supports the fixed effect model, the model was then subjected further to check if the fixed effect model is not most appropriate for the study or the random effect model. The null hypothesis here is that, the random effect model is preferred while the alternative hypothesis is that only the fixed effect model is consistent. As such, if the null hypothesis is rejected then the random effects model cannot be used. Accordingly, an abridged form of the Hausman test result (see appendix 2 for full result) is presented below:

Table 4.5: Correlated Random Effects - Hausman Test
Equation: Untitled
Test period random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Period random	17.172081	9	0.0461

** WARNING: estimated period random effects variance is zero.

Period random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
CAQ	0.009435	0.010526	0.000000	0.0016
BAL	0.007460	0.010067	0.000004	0.2139
BZS	-0.015275	-0.012362	-0.000021	0.5244
PSC	0.096356	0.105889	0.000036	0.1121

Source: E-Views Output 9.0. (2025)

The Hausman test 4.5 above, provide evidence in favour of the fixed effect model. This is because the Hausman test reported a low Chi-square value of 17.172081 and a high probability value of 0.0461which was insufficient to reject the null hypothesis which supports the Fixed Effect model. Hence, the study used the Fixed Effect model to test the research hypotheses. This is premised on the fact that, unlike the random effects model, the fixed effect model assumed that individual-specific variations across entities are correlated and fixed in nature. Again, the fixed effects model allows unobserved effects correlate with explanatory variables. The robust fixed effect model is therefore presented below:

Table 4.6: Fixed Effect Model
Dependent Variable: GDPR
Method: Panel Least Squares
Date: 06/07/25 Time: 21:24
Sample: 2001 2023
Periods included: 23
Cross-sections included: 4
Total panel (balanced) observations: 92

Period SUR (PCSE) standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	23.92169	0.887887	26.94226	0.0000
CAQ	0.009435	0.003944	2.392028	0.0173
BAL	0.007460	0.014015	0.532288	0.5949
BZS	0.015275	0.015822	0.965414	0.3350
PSC	0.096356	0.026773	3.599038	0.0004

Effects Specification

Period fixed (dummy variables)

R-squared	0.622778	Mean dependent var	23.54162
Adjusted R-squared	0.559922	S.D. dependent var	2.533922
S.E. of regression	2.179877	Akaike info criterion	4.479785
Sum squared resid	1587.123	Schwarz criterion	4.820999
Log likelihood	-787.8007	Hannan-Quinn criter.	4.615374
F-statistic	5.135204	Durbin-Watson stat	2.172115
Prob(F-statistic)	0.000000		

Source: E-Views Output 9.0. (2025)

The R^2 value in table 4.6 above stood at 0.622778 suggesting that 62.28% proportion of variation in the economic growth proxy is explained by the bank stability indicators. The adjusted R^2 for the model is 0.558603 which means that when the model account for the degree in the loss of freedom (n-k), 55.99% variances in economic growth proxy are explained by the regressor. This confirms that bank stability indicators models have high explanatory power. Also, the model has f-test significance of 0.0000 which means that the model is fit and significant at 95% confidence level. This further signals that the model is highly statistically significant.

Lastly, Durbin-Watson (D-W) test was carried out to test the serial correlation of the explanatory variables. Serial correlation or autocorrelation examine the independence of the error terms of the independence variables. The Durbin Watson statistics estimated at 2.172115 shows that there is no auto-correlation among the independent variables. Auto-correlation exists only if the D-W falls below 1.5 and above 2.5.

4.2 Test of Hypotheses

Arising from the regression result presented earlier, the Fixed effect model was used to

test the six null hypotheses postulated earlier in SECTION one:

$H0_1$: Capital Adequacy has no significant effect on Economic Growth in SSA Countries.

The Fixed Effect Model (FEM) estimate clearly revealed that Capital Adequacy denoted by CAQ has a positive beta coefficient value of 0.075218, positive t-ratio of 6.983915, and P-value of 0.0000 that is lesser than 5%. This provides an evidence for rejecting the null hypothesis one. Hence, the study restates that capital adequacy has a positive significant effect on Economic Growth in SSA Countries

$H0_2$: Bank Liquidity has no significant effect on Economic Growth in SSA Countries.

The Fixed Effect Model (FEM) estimate clearly revealed that Bank Liquidity denoted by BAL has a positive beta coefficient value of 0.007460, positive t-ratio of 0.532288, and P-value of 0.5949 that is greater than 5%. This signals that there is no enough evidence of rejecting the null hypothesis three. Hence, the null hypothesis three is sustained.

$H0_3$: Bank Z-Score has no significant effect on Economic Growth in SSA Countries.

The Fixed Effect Model (FEM) estimate clearly revealed that Bank Z-Score denoted by BZS has a negative beta coefficient value of -0.015275, negative t-ratio of -0.965414, and P-value of 0.3350 that is greater than 5%. This suggests that Bank Z-Score has a negative yet statistically insignificant effect on the on Economic Growth in SSA Countries. This signals that there is no enough evidence of rejecting the null hypothesis four. Hence, the null hypothesis four is sustained.

$H0_4$: Private Sector Credits has no significant effect on Real Economic Growth in SSA Countries.

The Fixed Effect Model (FEM) estimate clearly revealed that Private Sector Credits denoted by PSC has a positive beta coefficient value of 0.096356, positive t-ratio of 3.599038, and P-value of 0.0004 that is lesser than 5%. This provides an evidence for rejecting the null hypothesis five. Hence, the study restates that Private Sector Credits has a positive significant effect on Economic Growth in SSA Countries

4.3 Discussion of Regression Result

In line with the specific objectives of this study alongside the regression result presented in table 4.7 above, each of the regression results are discussed below:

4.3.1 Capital Adequacy and Economic (GDPR) in SSA Countries.

The fixed effect model shows that Capital Adequacy (CAQ) has coefficient of 0.009435 and P-statistics of 0.0173. The positive coefficient value means that Capital Adequacy (CAQ) has positive effect on economic growth (GDPR) in SSA Countries. Specifically, a unit increase or (decrease) in the Capital Adequacy (CAQ) will cause 0.009435-unit increase or (decrease) to the economic growth (GDPR) in SSA Countries. By extension, the more stable the banking industry becomes, the higher the growth of the economy. It is important to state here that our result is in concordance with prior empirical result of Abbas, Ali, and Ahmad (2021); Abuselidze (2021); which shows that Capital Adequacy (CAQ) is instrumental to the economic growth (Economic Growth).

4.3.2 Bank Liquidity and Economic (GDPR) in SSA Countries.

The fixed effect model shows that Bank Liquidity (BAL) has coefficient of 0.007460 and P-statistics of 0.5949. The positive coefficient value means that Bank Liquidity (BAL) has a positive effect on economic growth (GDPR) in SSA Countries. Specifically, a unit increase or (decrease) in the Bank Liquidity (BAL) will cause 0.007460 -unit increase or (decrease) as the case may be, to the mean of economic growth (GDPR) in SSA Countries. This result is in concordance with prior empirical studies of Swamy (2019).

4.3.3. Bank Z-score and Economic (GDPR) in SSA Countries.

The fixed effect model shows that Bank Z-score (BZS) has a negative beta coefficient value of -0.015275 and a P-value of 0.3350. The negative coefficient value means that Bank Z-score (BZS) has a negative effect on economic growth (GDPR) in SSA Countries. Specifically, a unit increase the Bank Z-score (BZS) will cause negative -unit decrease as the case may be, to the mean of economic growth (GDPR) in SSA Countries. Consequently, the corresponding probability statistics of 0.3350 indicates that Bank Z-score (BZS) has minimal adverse effect on the economic growth (Gross Domestic Product Growth Rate) in SSA Countries. This result is in concordance with prior empirical studies of Fernández, González, and Suárez (2016).

4.3.4. Private Sector Credits and Economic (GDPR) in SSA Countries

The fixed effect model shows that Private Sector Credits (PSC) has a positive beta coefficient value of 0.096356 and a P-value of 0.0004. The positive coefficient value means that Private Sector Credits (PSC) has a positive effect on economic growth (GDPR)

in SSA Countries. Specifically, a unit increase the Private Sector Credits (PSC) will cause 0.096356 unit rise to the economic growth (GDPR) in SSA Countries. Consequently, the corresponding probability statistics of 0.3350 indicates that Bank Private Sector Credits (PSC) has a higher direct effect on the economic growth (GDPR) in SSA Countries. Put differently, a higher Private Sector Credits (PSC) will increase the growth of SSA Countries by significant value of 0.096356. This result is in concordance with prior empirical studies of Ganiyu, Eboreime, Adamu and Belonwu (2017).

5. CONCLUSION

This study examined the impact of bank stability on economic growth in four selected Sub-Saharan African (SSA) countries. Bank stability was represented by four indicators: capital adequacy (CAQ), bank liquidity (BAL), bank Z-score (BZS), and private sector credit (PSC). Economic growth was measured using the Gross Domestic Product Growth Rate (GDPR). The study employed panel data methodology, utilizing data obtained from the central banks of the selected countries and the World Bank database for the period under review. It was found that Capital adequacy, bank liquidity, and private sector credits has a positive significant effect on Economic Growth, while bank Z-Score has a negative insignificant effect on Economic Growth. Based on the findings, the study concludes that capital adequacy and private sector credit are key drivers of economic growth in SSA countries. In line with the findings made in this study, the following policy recommendations were made:

1. Bank regulators should ensure that management of banks in each of the sampled SSA Countries should adhere to its Capital Adequacy Ratio as specified in the Basel Accords.
2. Banks should, as a matter of urgency, implement policies aimed at increasing their liquidity ratios. These may include maintaining higher minimum liquidity requirements, diversifying funding sources, strengthening liquidity risk management frameworks, holding high-quality liquid assets, adopting Basel III liquidity standards, enhancing interbank market development, and improving transparency and disclosure. Strengthening liquidity in this way will enhance the resilience of the

banking sector and support higher economic growth across the region.

3. Banks must take concrete steps to guard against market risk, which can significantly increase the likelihood of financial crises. Specifically, banks should implement robust market risk management frameworks, including regular stress testing and scenario analysis. Additionally, banks should invest in training staff and upgrading risk monitoring systems to detect and respond to market volatility in real time.
4. Banks in Sub-Saharan African (SSA) countries should adopt optimal portfolio management strategies to achieve Pareto optimality, where no asset can be reallocated to make one outcome better without making another worse. Specifically, banks should diversify their asset portfolios across sectors, regions, and risk classes to minimize risk and maximize returns. By optimizing their portfolios, banks can enhance financial stability, improve resource allocation, and contribute more effectively to sustainable economic growth.

REFERENCES

Abbas, F. Ali, S. & Ahmad, M. (2021). Does economic growth affect the relationship between banks' capital, liquidity and profitability: empirical evidence from emerging economies *Journal of Economic and Administrative Science*s, 8 (7), 1–10.

Abedifar, P., Molyneux, P, & Tarazi, A. (2018). Non-interest income and bank lending. Journal of Banking & Finance, 87, 411-426. https://doi.org/10.1016/j.jbankfin.2017.11.003

Abhigale M.M. (2016). Relationship between Non Performing Loans and Economic Growth: A Case Study of Commercial Banks in Kenya. [Research Project (University of Nairobi)] Kenya.

Abidin, Z., Prabantarikso, R., Wardhani, R., & Endri, E. (2021). Analysis of Bank Efficiency Between Conventional Banks and Regional Development Banks in Indonesia, Journal of Asian Finance, Economics and Business, 8(1), 741-750.

Abugri, B. A., Osah, T. T., & Andoh, S. K. (2016). Ownership Structure, Non-Interest Income and Bank Risk in Ghana. *Banking and Finance Review*, 8(2), 81-105.

Abuselidze, G. (2021). The impact of banking competition on economic growth and financial stability: an empirical investigation. *European Journal of Sustainable Development*, 10(1), 203-220

Adedeji, A.O. & Ezeabasili, I.E . (2018). Restructuring and Clamour For 'True'Federalism in Nigeria: A Comparative Analysis. *Advances in Social Sciences Research Journal, 5(2)160-168*

Afiantara, A. Mahawan, B. & Budiarto, E. (2019). Predicting of Banking Stability Using

Machine Learning Technique of Random Forests: Proceedings of Annual Conference on Management and Information Technology (ACMIT) 2019\

Ahmad M.I., Guohui W., Hasan M., Ali R., Rafiq M.Y. & Rehman R. (2019). Non-Performing Loans and Economic Growth. *Scholars Journal of Economics, Business and Management* 3(10), 584-586

Ahmed, I.H. Qasim, Z. &Tahar, T. (2020). Impact of non-interest income and revenue concentration on bank risk in South Asia. *Banks and Bank Systems*, 15(4), 15-25.

Ahmed, M. M. (2017). , non-interest income, and bank profitability: Evidence from Indian banks. Economic Modelling, 63,1-14.

Allen N. Berger, J. & Sedunov, J. (2016) Bank liquidity creation and real economic output. *American Economic Review* 90 (1), 30-45.

Al-Slehat, Z.A.F. Altameem, A.F. (2021). The relationship between non-interest revenue and sustainable growth rate: a case study of commercial banks in Jordan. *Journal of Asian Finance, Economics and Business*, 8(5), 99-107

Amadi, A. Adetiloye, K.A. Babajide, A.A. & Idimmachi, A. (2021). Banking system stability: A prerequisite for financing the Sustainable Development Goals in Nigeria. *Banks and Bank Systems*, 16(2), 103-118.

Ananzeh I.E.N. (2016). Relationship between Bank Credit and Economic Growth: Evidence from Jordan. *International Journal of Financial Research, 7(2)* 53-65

Andreas J. & Sheefen P.S. (2019). The Causal Relationship between Private Sector Credit Extended and Economic Growth in Namibia. *Journal of Economics and Behavioral Studies 11*(2), 23-29

Antao, S., & Karnik, A. (2022). Bank performance and non-interest income: evidence from countries in the Asian Region. *Available at* https://doi.org/10.1007/s10690-021-09357-1, Applied Economics, Taylor & Francis Journals, vol. 51(39), pages 4313-4324, August.

Asiedu M. & Atakli A.B. (2020). Effects of Non-Performing Loans on Economic Growth Evidence from four African countries: (Ghana, Nigeria, South Africa and Kenya). *Scholars Journal of Economics, Business and Management* 7(8): 240-243

Aunanna Z. & Sanzida S. (2020). An Investigation of the Effects of Non-Performing Loans on Economic Growth: Evidence from Developing Asian Countries. *Journal of Asian Economics and Management. 3(*2), 89-103

Bank of Korea (2022). Definition and importance of financial stability". Retrieved on 16th April, 2022 from https://www.bok.or.kr/eng/main/contents.do?menuNo=400037.

Bendahmane M. & Kerrouche N. (2021). Relationship between Domestic credit provided by financial sector and economic growth in Algeria since 1970-2018. *Economic and Management Research Journal* 15(2), 119-136

Bishnu P.B. & Mohammad M. (2016). Bank Credit and Economic Growth Nexus: Bangladesh Perspective. *BBTA Journal: Thoughts on Banking and Finance* 5(2), 24-39

Chukwujekwu O.N. & Ezeabasili,I.E.(2019). Party Politics and Internal Democracy in Nigeria: People's Democratic Party (PDP) in Anambra State, 2006-2016.*World Journal of Innovation Research* (WIJR), 6(6):48-55

Daly, S. & Frikha, M. (2016). Banks and economic growth in developing countries: What about Islamic banks? *Cogent Economics & Finance, Taylor & Francis Journals*, 4(1), 1168728-116.

Dashmir S. & Borce T. (2021). The Impact of the Private Sector Credits on the Economic Growth in the Republic Of North Macedonia. *Knowledge – International Journal* 45(1), 205-211

De-Ramon, S. Francis, W. & Straughan, M., (2018). Bank competition and stability in the United Kingdom. Bank of England working papers 748, Bank of England.

Dwumfour, R. & Adjei, (2016). Explaining banking stability in Sub-Saharan Africa. *Research in International Business and Finance, Elsevier*, 41(3), 260-279.

Ekanayake, E.M.N.N., & Wanamalie H.A. (2017). Income Diversification and bank risk-return trade-off: evidence from an emerging economy. *Journal of Asian Finance, Economics and Business Review*, 7(7), 644–655.

Ethel, I.E. (2022). Political Thuggery and Insecurity in Nigeria, 2015-2021. *International Journal of Social Science and Human Research*, 5(7): 3185-3188

Ezeabasili, I.E. & Amaefuna, J.U. (2024) Analyzing the Impact of Social Media on Public Perception of the Israeli-Hamas Conflict .*Journal of Emerging Technologies and Innovative Research* (JETIR) vol 11(9): 31-37 2359-5102 **UGC approved journal No.63975** www.Jetir.org

Ezenwaka, M. N & Okoro, E. C. (2020).The Effect of Performance Management On Organizational Effectiveness In Chukwuemeka Odumegwu Ojukwu University. *International Journal of Business & Law Research* 8(4):82-98

Faris, A. Nasif, J. Alshubiri , 2017. The Impact of Financial Stability Indexes on Broad Money Growth: Empirical Study in Commercial Banks Listed in Muscat Security Market. *International Business Management*, 11 407-414.

Fernández, A.I. & González, F. & Nuria, F. (2016). Banking stability, competition, and economic volatility. Journal of Financial Stability, Elsevier, 22(3), 101-120

Fungáčová, F.J. & Laurent, Z.W. (2016) Does bank liquidity creation contribute to economic growth? Evidence from Russia: Bank of Finland, Institute for Economies in Transition (BOFIT), Helsinki BOFIT Discussion Papers No. 7/2015

Ganiyu B. A. A., Matthew I. E., Yusuf A. and Maximillian C. B. (2017). The Impact of Private Sector Credit on Economic Growth in Nigeria. *CBN Journal of Applied Statistics 8*(2), 1-22

Hasan D., Serhat Y. & Zafer A. (2018). Relationship Between NonPerforming Loans, Industry, and Economic Growth of the African Economies and Policy Recommendations for Global Growth. *Journal of Economics, Business and Management* 5(1), 203-229

Ifeoma, E.E. (2011). The Nature of Conflict in Africa and its Impact on Africa International Relations: The Case of

Darfur. *World Affairs: The Journal of International Issues.* 15(3), 88-112.

Ifeoma, E.E. (2011). Nigeria Foreign Policy and the Politics of Debt Relief. *Canadian Social Science.*7(2), 153-165.

Ighomereho, O.S. & Ezeabasili, I.E. (2013). The Role of Marketing in Public Policy Decision-Making: The Case of Fuel Subsidy Removal in Nigeria. *IOSR Journal of Humanities and Social Science (IOSR-JHSS). Vol. 6 (5):* 7-15

Ijaz, S. Hassan, S. Tarazi, A. & Fraz, A. (2020). Linking bank competition, financial stability, and economic growth. *Journal of Business Economics and Management*, 21(1), 200–221

Jumono, S. Iskandar, D.F. Adhikara, M.F.A. &Mala, C.F.A. (2021). Bank liquidity and economic development in underdeveloped regions: an empirical study in Indonesia. *Journal of Asian Finance, Economics and Business,* 8 (7), 0031–0042

Kalyvas, B. & Nguyen, A. (2018). Does institutional quality condition the effect of bank regulations and supervision on bank stability? Evidence from emerging and developing economies. *International Review of Financial Analysis,* 52(5)289-302.

Kamal, A., Hussain, T., & Khan, M. M. S. (2021). Impact of financial inclusion and financial stability: Empirical and theoretical review. *Liberal Arts and Social Sciences International Journal*, 5(1), 510-524

Karim, N.A., Muhamat, A.A. & Jaafar, M.N. (2019). Bank Stability Index for selected countries with dual banking systems. *Journal of Reviews on Global Economics* 8, 963-980

Kartal M.T., Kirikkaleli D. & Ayhan F. (2021). Nexus between non-performing loans and economic growth in emerging countries: Evidence from Turkey with wavelet coherence approach. *International Journal of Finance & Economics* 1(11)

Kibebe,G. J.(2016). Determinants of Commercial Banks Deposit Mobilization; evidence from private commercial banks in Ethiopia. Master's dissertation, Addis Ababa University, Ethiopia.

Klein, P. & Weill, L. (2020). Bank profitability and economic growth. Available at https://www.researchgate.net/publication/314721863_Bank_Profitability_and_Economic_Growth.

Kočišová, K. & Stavárek, D. (2018). Banking stability index: new EU countries after ten years of membership. Working Papers 0024, Silesian University, School of Business Administration.

Kozarić, K. & Dželihodžić, Z.E. (2020). Effects of macroeconomic environment on non-performing loans and financial stability: case of Bosnia and Herzegovina. *Journal of Central Banking Theory and Practice, Central bank of Montenegro*, 9(2), 5-17.

Morakinyo A.E. & Sibanda M. (2016). Non-Performing Loans and Economic Growth in Nigeria: A Dynamic Analysis. *SPOUDAI Journal of Economics and Business*, 66(4), 61-81

Nahidul I. M., Julfikar, A. & Atif, W. (2019) Determinants of deposit mobilization of private commercial banks: evidence from Bangladesh. *International Journal of Business and Management Invention*, 8(10) , 26-33 .

Neelam T. (2020). Bank credit and economic growth in Nepal: An empirical analysis. NRB economic review

Nwanolue, B.O.G., Ezeabasili, I.E. & Obiora, C.A. (2018). Performance Management And Employee Productivity in Chukwuemeka Odumegwu Ojukwu University. *International Journal of Humanities and Social Science*, 3 (11):23-43

Ojiegbe, J.N. Oladele, A.O. & Makwe, E.U. (2016). Bank liquidity and economic growth of Nigeria. *Research Journal of Finance and Accounting*, 7(14), 2-15.

Okeke, E.C., Bebedeth, O.L. & Okoro, E.C. (2025). Effect of Green Accounting on the Value of Food and Beverages Firms in Nigeria. *International Journal of Innovative Social Sciences & Humanities Research* 12(4):163-177

Okoro, E.C & Ekwunife (2022). Effect of cash flow on corporate sustainability in Nigeria, *International Journal of Finance and economics Research*, 10(10: 17-31

Okoro, E.C. & Offor, T.N. (2019). Determinants of accounting earnings surprises in an emerging economy, *International Journal of Innovative Finance and Economics Research*, 7(4): 29-44

Okoro, E. C. & Anichebe, A .S. (2019). Determinants of Accounting Earnings Surprises in South Africa.*International Journal of Innovative Finance and Economics Research*, 7(4): 74-93

Olorunmade G., & Samuel O.J. (2019). Determinants of private sector credit and its implication on economic growth in Nigeria. *Journal of American Economic and Social Review 5*(1), 116-174

Olowofeso E.O., Adeleke A.O. &. Udoji A. O. (2016). Impact of Private Sector Credit on Economic Growth in Nigeria. *CBN Journal of Applied Statistics. 6* (*2*), 83-101

Osunnaiye A.V. & Nargiza A. (2022). The Impact of Non-performing Loans on Nigerian Economic Growth. *London Journal of Social Sciences* 2(3), 53-69

Pavković A., Hrgović R., & Cesarac A. (2018). Impact of non-performing loans on banks' loan portfolio and economic growth in the republic of Croatia and Bosnia and Hercegovina. *Journal of European Economic and Social Review 3*(2), 110-121

Peterson K. & Ozili, (2018). Banking stability determinants in Africa. *International Journal of Managerial Finance, Emerald Group Publishing*, 14(4), 462-483.

SenGupta S. (2020). An Empirical Analysis on the Impact of Non-Performing loans on investment and economic growth and the role of political governance. *Indian Journal of Economics and Development*, 8(1), 21-30.

Seyte, Z., Kenenisa, L., &Ganfure, T.(2018). Determinants of deposit mobilization in Ethiopian commercial banks. *Africa Journal of Business and Economics*, 1(1), 67-76.

Shengquan, W. & Chen, L. & Xiong, X, (2019). Asset bubbles, banking stability and economic growth," Economic Modelling, Elsevier, 78(3), 108-117.

Shijaku, G. (2016). Banking stability and its determinants: A sensitivity analysis on methodological changes. *The Economic Review*, 3(1), 18-30.

Sifrain, R. (2021). Determinants of banking stability: evidence from Haiti's banking system. *Journal of Financial Risk Management*, 10, 80-99.

Soedarmono, W., Machrouh, F., & Tarazi, A. (2019). Bank market power, economic growth and financial stability: Evidence from Asian banks. *Journal of Asian Economics*, 22(6), 460–470.

Swamy, V. (2019). Testing the interrelatedness of banking stability measures. *Journal of Financial Economic Policy, Emerald Group Publishing*, 6(1), 25-45.

Ubahi, E.C., Patience, E. & Okoro, E.C. (2025). Tax Incentives and Foreign Direct Investment (FDI) in Nigeria, International Journal of Innovative Finance andEconomics Research, 13(2): 245-256,

Ugochukwu, O.M., Ezeabasili, I.E. & Ostar ;(2020) Revisiting Identity-Based Politics And Boko Haram Insurgency In Nigeria under Goodluck Jonathan, 2010-2015. *American Journal of Humanities and Social Science Research* (AJHSSR), Vol 4 (9): pp-297-306

Ugwu, I.V., Eboatu, I., Okoro, E.C. & Okeke, P.C. (2022). Efficiency of Credit Regulation on Profitability of Banks in Nigeria.*Asian Journal of Social Science and Management Technology*, 4(5), 48-62

Uttam-Chandra P. (2020). The Causal Relationship between Private Sector Credit Growth and Economic Growth in Bangladesh: Use of Toda-Yamamoto Granger Causality test in VAR Model. *MPRA Paper* No. 104476, Online at https://mpra.ub.uni-muenchen.de/104476/

Zaidi, S.H., & Rupeika-Apoga. R. (2021). Liquidity synchronization, its determinants and outcomes under economic growth volatility: evidence from emerging Asian Economies. *Risks* 9 (43), 1-20