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Effect of Banks' Domestic Credit to Private Sector on Balance of Payment and Gross Savings of Sub-Saharan African Countries (2002 – 2023)

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ABSTRACT: This study presents an analysis of the effect of banks' domestic credit to private sector on balance of payment and gross savings in four selected Sub-Saharan African countries (Nigeria, South Africa, Kenya, and Ghana). Financial institutions have the power to influence large saving opportunities and propensities. Any economy that wants to experience continuous economic development can do so if it has robust financial institutions, specifically a healthy banking sector. This study applied a Panel Ordinary Least Square (POLS) data analysis and cemented by the granger causality test using data from the World Bank spanning from 2002 to 2023. The study found that banks' domestic credit to private sector has no significant effect on balance of payment in the four selected Sub-Saharan African countries (Nigeria, South Africa, Ghana, and Kenya), while gross savings in the four selected Sub-Saharan African countries was significantly affected by banks' domestic credit to private sector. The study recommends that Sub-Saharan Africa governments should consider more export promotion through massive industrialization, trade policies, and incentives for businesses. Implementing prudent monetary and fiscal policies will ensure currency stability and prevents excessive external borrowing. To improve gross savings, governments in Sub- Saharan Africa should implement policies that promote financial inclusion, investment, and responsible fiscal management**.** Encouraging higher interest rates on savings accounts**,** tax incentives for savings, and pension fund reforms can motivate individuals to save more.

Keywords: Banks' domestic credit to private sector; balance of payment; gross savings; Sub-Saharan Africa.

1. INTRODUCTION

Bank credit facilitates the allocation of financial resources to productive investments, thereby supporting business expansion, innovation, and overall economic dynamism (Igbinedion, 2023). Economic development is a multifaceted process that encompasses growth in income, improvements in living standards, and the reduction of poverty. Economic development has been a central focus of policy and academic discourse for

decades, with particular emphasis on understanding the mechanisms that drive growth and improve living standards. A key driver of this process is the financial system, which channels resources to their most productive uses. Among these mechanisms, the role of financial systems, and specifically bank credit, stands out as a crucial determinant of economic progress. African as a region faces several development challenges. According to the region's most recent economic update, growth in Sub-Saharan Africa is projected to slow to 2.5% in 2023, from 3.6% in 2022 (World Bank, 2023). Rising conflict and violence across the region exerts a dampening effect on economic activity, with climate shocks poised to exacerbate this fragility. About 462 million people in the region are still living in extreme poverty in 2023 (World Bank, 2023). The region continues to grapple with high debt distress risks, with 21 countries identified as either at high risk of external debt distress or already ensnared in it as of June 2023. Several countries, including Chad, Zambia, and Ghana, have initiated debt restructuring efforts to restore sustainability and rebuild fiscal space (World Bank, 2023).

Financial institutions have the power to influence large saving opportunities and propensities. Any economy that wants to experience continuous economic development can do so if it has robust financial institutions, specifically a healthy banking sector. To help the Sub-Saharan African countries achieve its intended macroeconomic goals, their actions must be designed to be consistent with policies and programs of the government. The commercial banking system was noted by Schumpeter in 1934 as one of the major drivers of development overall. Banks typically increase the amount of money accessible from resources mobilized, which not only facilitates but also accelerates the process of economic development. However, in the past, the efficiency of banks in Sub-Saharan African in fulfilling the vital function of development and expansion, to large extent is questioned/uncertain because of the unregulated banking environment in which they operated (Nduka, Atueyi, Osakwe, & Mbanefo, 2021; Ekwunife, Nduka, & Ogini, 2022; Ajudua, 2023).

In sub-Saharan African countries, the inadequate access to bank credit and limited financial development are perpetuating the cycle of poverty and hindering economic development, as many individuals, small and medium-sized enterprises, and agricultural businesses faces significant barriers in accessing credit. This has resulted in low levels of financial inclusion, with an estimated 43% of adult in Sub-Saharan Africa lacking access to a bank account; high interest rate, averaging around 20% per annum, making credit unaffordable for many; limited credit information sharing and collateral requirements, leading to high risk premiums and credit rationing; low levels of financial intermediation, with bank credit to the private sector averaging around 30% of Gross Domestic Product (GDP), compared to over 100% in developed economies; and high levels of informal economic activity, estimated around 40% of GDP, which is not supported by formal credit channels (World Bank, 2023). There are divergent perspectives on the nature of relationship and effect of bank credit, balance of payment, and gross savings, hence no harmony on the alleged nexus between banks' domestic credit to private sector, balance of payment, and gross savings. Furthermore, in the context of the selected four Sub-Saharan African countries, scholars focused on economic growth measured by real gross domestic product and applied annual/yearly data. The result of some of these studies showed that banks domestic credit had significant effect on economic development of selected Sub-Saharan African countries

(Nigeria, South Africa, Kenya, and Ghana), while others disagreed with that.

Against this backdrop, this study seeks to address the effect of banks' domestic credit on balance of payment and gross savings of four selected Sub-Saharan African countries (Nigeria, South Africa, Kenya, and Ghana). By focusing on a diverse set of countries within the region, the research aims to understand how variations in banking practices, credit accessibility, and economic policies influence the effectiveness of banks' domestic credit to private sector as a driver of balance of payment and gross savings. The selected countries will provide a comprehensive view of different economic environments, allowing for a nuanced analysis of how bank credit impacts balance of payment and gross savings. This study is quite robust to adopt the granger causality test using a Panel Ordinary Least Square (POLS) that will capture cross-sectional estimation. Studies of banks credit, balance of payment, and gross savings, particularly the Sub-Saharan African countries were carried out in different years and in different areas of the financial sector. However, few of the studies on bank credit bears mostly current period but fail to have a long range of period to obtain robust results. This present study of the four selected countries in Sub-Saharan Africa countries (Nigeria, South Africa, Ghana and Kenya) considers a period of twenty two (22) years from 2002 to 2023.

2. LITERATURE REVIEW

Conceptual Framework

Banks' Domestic Credit to Private Sector

In line with World Bank (2023) and in the context of this work, banks' domestic credit to private sector refers to the financial resources provided to the private sector by financial corporation, such as through loans, purchases of non-equity securities, and trade credits and other accounts receivable, that establish a claim for repayment. For some countries, these claims include credit to public enterprises. The financial corporations include monetary authorities and deposit money banks, as well as other financial corporations where data are available (including corporations that do not accept transferable deposits but do incur such liabilities as time and savings deposits). Examples of other financial corporations are finance and leasing companies, money lenders, insurance companies, pension funds, and foreign exchange companies.

Balance of Payment

The balance of payment is a systematic record of all economic transactions between a country and the rest of the world during a specific period. It provides insights into a nation's economic strength, external financial stability, and its interactions with global markets (Obidike, Onyeka, & Nduka, 2022; Logan, Okanya, Nduka, Manasseh, Ede, Onoh, Omeje, Ozioko, & Agu, 2021). The balance of payment is essential for formulating economic policies, managing exchange rates, and assessing trade and financial stability. The balance of payment position is a vital macroeconomic concept, reflecting the economic transactions of a country with the rest of the world. It is a comprehensive indicator of a nation's trade performance, financial flows, and overall economic health.

Gross Savings

Gross savings refers to the portion of a nation's gross national income that is not consumed by households, businesses, or the government. It represents a critical indicator of a country's ability to invest in economic development and ensure financial stability. Gross savings are calculated as the difference between income and consumption expenditure, including net transfers. This metric is vital for analyzing

long-term economic growth, funding capacity for infrastructure, and resilience to external shocks. Gross savings encompass savings by households, businesses, and the government (Monogbe, Akinpelumi, Achugbu, & Nduka, 2016). Gross savings provide the capital needed for investments in infrastructure, technology, and human capital. According to the Solow Growth Model**,** higher savings lead to greater capital accumulation, fostering long-term economic growth (Solow, 1956).

Theoretical Framework

Financial Intermediation Theory

The financial intermediation theory states that banks are essential in helping to mobilize savings and effectively direct them toward profitable ventures. This procedure promotes economic growth and improves capital formation. Financial inclusion is greatly aided by bank credit. Banks assist in the integration of disadvantaged populations into the formal financial system by extending loans to them. Better living conditions and a decrease in poverty may result from this inclusion. World Bank (2014) highlighted that access to credit is a crucial component of financial inclusion and that financial inclusion is a major driver of growth. Because sectorial investments can be enhanced by the provision of credits, the amount of credit extended by the banking system to the various sectors of the economy determines the level of productive activities, which influences growth and development and is primarily reflected in the growth rate of the real gross domestic product (Nduka, Ananwude, & Osakwe, 2019; Ogunewe, Ananwude, & Nduka, 2020). According to Ogunmuyiwa, Okuneye, and Amaefule (2017), Aniefor, Nduka, Ananwude, and Ezeaku (2021), and Anusi and Nduka (2022), it is essential to provide small, medium, and big businesses in Nigeria with an adequate and consistent flow of industrial loans in order for them to contribute appropriately to the country's growth and development. Akujuobi and Nwezeaku (2015) and Nduka, Achugbu, and Ucheahara (2016) specifically emphasized the need to ascertain the degree to which bank credit has impacted human development, decreased unemployment, and alleviated poverty in the economy, even though they contended that under normal circumstances, banking sector credit is expected to be seen in both quantitative and qualitative terms. This study added interest rate and inflation rate as fundamentals that are capable of influencing the credit extended to the private sector as well as balance of payment and gross savings in the four selected Sub-Saharan African countries (Nigeria, South Africa, Kenya, and Ghana).

Empirical Studies

Alzyadat (2021) studied the impact of sectoral bank credit facilities provided by commercial banks on the non-oil economic growth in Saudi Arabia. Bank credit facilities are given for nine economic sectors: agriculture, manufacturing, mining, electricity and water, health services, construction, wholesale and retail trade, transportation and communications, services, and finance sector. The study employs annual data from 1970 to 2019. The study employs the Autoregressive Distributed Lag (ARDL) approach to identify the long-run and short-run dynamics relationships among the variables. The main results reveal that the overall impact of total bank credit has a significant and positive effect on non-oil economic growth in KSA. The results revealed that the effect of bank credit on the non-oil GDP growth in the short and long run was uneven. The study finds that all sectors have a positive and significant impact in the long run, except for the agricultural and mining sectors. Likewise, all sectors have a positive and significant impact in the short run, except for construction, finance, services, and transportation & communications.

Gertrude (2021) reviewed the relationship for four EAC countries including Uganda, Kenya, Burundi and Rwanda using individual country Gregory-Hansen-Quandt-Andrews-Muwanga (GHQAM) co-integration procedure based on OLS/ FMOLS estimations. The findings indicate that in the long-run: a cointegration relationship exists between financial development and economic growth but it has not been stable for the periods covered; and the elasticity of economic growth to financial development was zero before and after the break for Uganda and Burundi but ranged between 0.000 - 0.3208 and between 0.2178 - 0.3063 for Kenya and Rwanda, respectively, implying an inelastic relationship for all four countries. In the short-run, RGDP did not adjust to changes in FSD in Burundi while 46.36%, 46.3% and 40.67% to 67.47% of the adjustment of the former to changes in the later occurred in the short-run in Rwanda, Uganda and Kenya, respectively. These results signal the need to review and enhance the transmission mechanisms through which financial development affects economic growth and put in place a favourable environment to ensure positive and elastic effects on economic growth.

Morina and Ozen (2020) estimated the impact of credit policies of commercial banks on financing and development of the real sector of Kosovo's economy. In this context, some statistical and econometric models and techniques have been applied in order to test the impact of commercial banks through the lending process in the development of the real sector of Kosovo's economy for the period 2005-2018, using time series on a monthly basis. The empirical results of this study prove that commercial banks through the lending process have had a positive substantive impact on the development of the real sector in the economy of Kosovo.

Alam, Rabbani, Tausif and Abey (2020) assessed the long-term association between banks' performance and the economic growth of a developing economy: India. The study used a panel of data of 20 public sector banks for the period 2009 to 2019. It applied the Pedroni and Kao test of co-integration, panel vector error correction model (VECM) dynamic, panel fully-modified ordinary least squires OLS (FMOLS), and dynamic OLS (DOLS) to estimate the relationship of interest margin return on assets, bank investment, and lending capacity of the bank with gross domestic product (GDP) of the country. The identification and incorporation of these bank-related variables are the innovations of this study. The results indicate that the bank-related variables are co-integrated with economic growth. Further analysis indicates a significant relationship between interest margin and return on assets with economic growth. In addition, lending capacity and investment activities are not significantly associated with economic growth.

Pham and Nguyen (2020) evaluated the Granger causality between domestic credit and gross domestic product (GDP) as well as investigating this long-term relationship in Vietnam from 2004:Q1 to 2017:Q4 with the use of the autoregressive distributed lag (ARDL) model as the analysis method. Empirical results show that there was a two-way Granger causality relationship between credit and GDP. In addition, credit expansion had a negative impact on economic growth in Vietnam in the long term.

Dinh (2020) researched, compare and forecast domestic credit growth in Vietnam's and China's economy. Thus, the paper is applied by a method of an autoregressive integrated moving average (ARIMA) model. This model is fitted to time series data both to better understand the data and to forecast future points in the series. Hereby, the methodology

is selected by Vietnam's best-fit model ARIMA (2,3,1) and China's best-fit model ARIMA (2,3,5). Analytical data are collected from 1996 to 2017, the sample fitted the model and is statistically significant. The result show the forecast result for next years. The Vietnamese and Chinese economy are the open economies and have domestic credit greatly contributed to economic growth. These results are the basis for policymakers to have a general view and define the impact of domestic credit growth on GDP between the two countries.

Ita, Owui, Dunsin and Ita (2020) examined the effect of commercial banks lending on the growth of the agricultural sector in Nigeria. The objectives were to examine the impact of total loans and advances on the agricultural sector output, to examine the impact of lending rate on the agricultural sector output, and to establish the relationship between commercial bank liquidity and the agricultural sector output. Data were sourced from secondary, using Central Bank Statistical Bulletin, Multiple regression statistical technique was employed in examining the effect of commercial bank lending on the growth of the Agricultural sector in Nigeria. Based on the analysis, the findings revealed that there was a significant relationship between loans and advances, interest rate, liquidity, bank asset on agricultural output.

Akinola, Efuntade and Efuntade (2020) determined the effect of banks financing on industrial sector growth in Nigeria. The objectives of the study were to examine the effects of domestic money supply, banks credit and maximum bank lending rate on industrial sector performance in Nigeria. The study is established on Bank-based monetary framework on the grounds that the hypothesis focuses on the positive functions of banks in industrial growth and development. Descriptive and Ex-post facto research designs were adopted to investigate the contribution of various bank financing variables to industrial sector growth measured by manufacturing sector output in Nigeria over a period of 15 years (2004-2018). Method of analysis was the linear regression model using fully modified ordinary least square model to estimate the individual effects of banks financing variables measured by banks credits, domestic money supply, and maximum bank lending rate on industrial sector growth measured by manufacturing sector output. The study revealed that industrial sector growth is strongly impacted upon by banks credits, domestic money supply, and maximum bank lending rate.

Adesola and Ewa (2020) investigated the impact of deposit money banks services on the growth of the Nigerian economy. The study was specifically meant to examine the impact of aggregate banks credits, aggregate banks deposits and effect of interest rates spread on the growth of the Nigerian economy. To achieve these objectives, Time series data were collected from the CBN statistical Bulletin using the desk survey method from 1984 to 2017. The data were analysed using various econometrics techniques such as the descriptive statistics test, the augmented Dickey-Fuller (ADF) unit root test, correlation matrix, and Autoregressive Distributive Lag (ARDL) Model. Findings from the analysis showed that, there is an insignificant short and long run effects of aggregate banks credits on the growth of the Nigerian economy. It also revealed insignificant short and long-run effects of aggregate banks deposits on the growth of the Nigerian economy and furthermore, insignificant short and long-run effects of interest rates spread on the growth of the Nigerian economy.

Oyebowale (2020) explored the impact of growth in loan-to-deposit ratio, growth in inflation, growth in broad money, and growth in bank capital on growth in bank lending using

annual data from 1961 to 2016. This study adopts the autoregressive distributed lag (ARDL) bounds testing approach and Granger causality tests to investigate the relationship and direction of causality among the variables, respectively. The Granger causality tests show that growth in broad money Granger-causes growth in bank lending, while there is no causality from other explanatory variables to bank lending in Nigeria. Also, this study showed that growth in bank lending Granger-causes growth in loan-to-deposit ratio and growth in inflation in Nigeria.

Ibrahim and Ifeyinwa (2020) determined the effect of bank lending on the growth of selected small and medium scale businesses in Nigeria. There are two basic research designs in social sciences, qualitative and quantitative orientation. However, the literature suggests a growing interest in a mixed approach (triangulation) following on from the argument that one is used to strengthen the other. Often, combining qualitative and quantitative methods, also known as the triangulation of methods, can capture a more holistic, complete, and contextual view of a phenomenon. The research is based on both qualitative and quantitative research designs. Three research questions were addressed. Data were collected from a purposive sample of 200 respondents drawn from a population of 400 respondents. A research developed questionnaire was used for the data collection. Data were analyzed using simple percentages and tables. The result of the study revealed that Lending to SMEs encourages self-employment thereby reducing the rate of unemployment and crime in Nigeria. It also boosts industrialization as well as improving the economic situation in the Country.

Araoye, Aruwaji and Obafemi (2020) assessed the effect of bank lending management on economic growth in Nigeria for the period 1985-2018. The data for the study were obtained from the Central Bank of Nigeria Bulletins, World Development Indicator and National Bureau of Statistics. The variables for the study include Gross Domestic Product, Deposit Interest Rate, Lending Interest Rate, Bank Asset Quality and Deposit Multiplier. Data for the study was analyzed using Descriptive Statistics, Ordinary Least Square method (OLS) and Multiple Regression Analysis. The result of short and long run regression revealed a negative impact of bank lending management on economic growth. The F-statistic (6.67) was also used to test explanatory power of the model with the corresponding probability value of (0.0007) which is statistically significant at 5%, suggesting that the explanatory variables have joint and significant effect on the economic growth of Nigeria.

Ikubor (2020) looked into the impact of financial sector development on economic growth in Nigeria using time series data from 1981 to 2017. The study used Principal component analysis techniques, ARDL, the result shows that financial sector development has a direct relationship with economic growth in Nigeria, which supports supply follow hypothesis. The stability test showed that the three models were significant and stable. The granger causality results revealed that economic growth granger cause financial development which support the demand pull hypothesis of financial development. Furthermore, the granger causality also revealed that bank sector as a financial sector granger cause the stock market performance in Nigeria.

Abina and Obi (2020) investigated the nexus between sectorial output growth and commercial bank credit in Nigeria. Sectorial output growth was broken down into three different proxies which include production sector, Commercial sector and Service sector contribution to gross domestic product while

bank credit to production sector, general commerce and service sector served as the independent variables which are used to proxy commercial bank credit. The study made use of secondary data obtained from Central Bank of Nigeria Statistical bulletin for the period 1981 to 2019. It employed Descriptive Statistics, Phillips-Perron (PP) Unit Root Test, Simple Regression Analysis and Granger Causality Test. The Granger Causality result showed that bi-directional causality is identified in the three models while there were positive and significant relationship between bank credit to production sector, general commerce, service sector and production sector contribution to gross domestic product, general commerce sector contribution to gross domestic product and service sector contribution to gross domestic product respectively.

Akinwale and Obagunwa (2019) evaluated the effect of bank credit on economic growth in Nigeria by using secondary data from Central Bank of Nigeria (CBN) Statistical Bulletin covering the period of 1981 to 2017. The study employed Augmented Dickey – Fuller (ADF), Johansen C-integration, Error Correction Model, and Pairwise Granger Causality Techniques. The result ADF indicated that credit to manufacturing sector (CMS), agricultural sector (ACS), general commerce (CGC), and real gross domestic product (RGDP) were stationary at first difference order of integration. On the other hand, the Johansen Co-integration test revealed that there is a long-run relationship among the variables. The result of the Error Correction Model revealed that CMS and ACS simulate RGPS while CGC negatively influenced economic growth in Nigeria. Also, CMS and ACS granger did not cause RGDP, but CGS granger caused RGDP.

Ogwang, Emenike and Joseph (2019) explored the effect of bank credit on economic activity using a developing economy data. The study period ranged from January 2007 to December 2017. Estimates from descriptive statistics show that the economic activity and bank credit series are negatively skewed and peaked, with non-normal distribution. The results generated for the Augmented Dickey unit root test showed that at the level form, all the variables are non-stationary but after first differencing the variables became stationary and integrated of order one. The results obtained from the multiple regression model show that bank credit has a positive and significant effect on economic activity.

Okorie and Chikwendu (2019) tested the extent to which private sector credit impacts on private sector investment in Nigeria. The ARDL model was engaged in data analysis. From the analysis, the following results were established, that private sector credit has positive and significant impact on private sector investment in the short run, but in the long run, private sector credit has positive and insignificant impact on private sector investment in Nigeria. Empirically, 1 percent increase in private sector credit in the short run leads to 0.77 percent increase in private sector investment. The study recommends that, monetary authorities pursue policies aimed at increasing availability of private sector credit. Such policies include reducing real interest rate by 1 percent so as to increase private sector investment by 0.01% in the short run.

Ubesie, Echekoba, Chris-Ejiogu and Ananwude (2019) appraised the effect of sectoral allocation of deposit money banks' credit on the growth of the Nigerian real economy from 2008Q1 to 2017Q4. The study was inspired by the unsettled disparity in empirical literature on the effect of sectoral allocation of deposit money banks credit on the growth of the real economy. Specifically, we ascertained the effect of deposit money banks' sectoral credit on agricultural, industrial, building & construction and wholesale & retail

tradecontribution to real gross domestic product. The study was pursued within the finance-led growth framework given the increased support for this theory in existing literature using an ex-post facto research design. The models we developed were estimated using the Ordinary Least Square (OLS) regression technique. The result of the analysis revealed that deposit money banks' credit to agriculture, industries, building & construction and wholesale & retail trade have no significant effect on agricultural, industrial, building & construction and wholesale & retail trade contribution to real gross domestic product.

Sayedi and Ringim (2019) examined the effect of lending by Deposits Money Banks' (DMBs) on economic growth of Nigeria from 1981 to 2016. The population of study is 64 DMBs that includes 45 defunct and 19 existing DMBs operating in the Nigeria banking industry as at December, 2016. The entire population constitute the sample frame for the study and tool for analysis is regression.The study found that estimated coefficient Beta values of the DMBs' lending and DMBs' lending rate fall withinlower and upper boundary of confident interval at 95%. This means bank lending affects the economic growth of Nigeria. The regression results indicated that DMBs' lending has positive and significant effect on economic growth. But DMBs' lending rate haspositive and insignificant effect on economic growth. The results of this study have both theoretical and practical implications to economy of Nigeria.

Andreas and Sheefeni (2019) ascertained causality between Private Sector Credit Extension (PSCE) and Economic growth using quarterly data for the period 2000:Q1-2017:Q4, in Namibia. The variables employed were Gross Domestic Product (GDP), Private Sector Credit Extended, Broad Money Supply (M2) and lending rates. The study tested for stationarity in order to determine the order of integration. Furthermore, a co-integration test was conducted on different sets of variables to establish the long run relationship. Granger causality test was also conducted to establish the direction of the relationships between the variables. The results for the stationarity test showed a combination of different orders of integration. The co-integration test revealed a stable long-run relationship among the variables. The Granger causality test results revealed one-directional causality running from PSCE to GDP.

Awad and Karaki (2019) analysed the impact of bank lending on economic growth in Palestine. The study employs the Augmented Dickey-Fuller to test for stationarity in the time series, The Johansen co-integration, Vector Autoregressive Model and Vector Error Correction Model are employed to identify the long-run and short-run dynamics among the variables, and Granger causality test in order to determine the direction of causality. The study finds that a long run relationship exists among the variables and insignificant short run relationship. Also, the study findings show that there is unidirectional causality and runs from GDP to bank lending. The insignificant contribution of bank lending to GDP is attributed to the fact that banks are not highly interested in lending to the production sector of the economy due to the high level of risk. However, the primary empirical evidence reveals that bank lending doesn't cause economic growth, but economic growth causes bank lending.

Begum and Aziz (2019) reviewed the impact of domestic credit to private sector by bank on real GDP in Bangladesh by using time series data for the period of 1983-2017. ADF test were used for testing stationarity of taken variables in the model and all the variables were stationary at first difference, as a result the Johansen's co-integration techniques was

used and the result revealed that there was no co-integrated equation in the model. Therefore, the vector autocorrelation (VAR) was used for the estimation. The result showed that there is a negative and statistically significant (at 10% level) relation between real GDP and domestic credit to private sector (PRC) but insignificant relationship between public credit (PUC) and real GDP.

Kamil (2018) determined the impact of bank credit to the private sector on the economic growth in Ethiopia. The sources of data for this research are mainly from secondary sources, but for the purpose of supporting the finding of the research, primary data were used to some extent. The study has applied Johansen co-integration approach, Vector Error Correction Model and Pairwise Granger Causality test using the quarterly time series data for the period of 1989/902016/17. Real gross domestic product (GDP) is the dependent variable and proxy for economic growth while bank credit to the private sector (BCPV) is proxy for financial indicator. The stationarity of the variables is tested using the Augmented Dickey-Fuller (ADF) unit root test. All the variables were integrated of order on). A major finding is that there is a significant positive relationship between bank credit to the private sector and economic growth. The pairwise granger causality test result indicates a unidirectional causal relationship running from gross domestic product to bank credit to the private sector. The result supports the growth-led finance hypothesis that financial development follows economic growth which is demand following.

Muchingami, Monametsi and Paradza (2017) tested the impact of bank lending on manufacturing sector performance in Zimbabwe. E-views 7 was used to analyse times series data from 2009-2015, computing an ordinary least squares (OLS) regression model. The Augmented Dickey Fuller (ADF) unit root test confirmed the stationarity of all variables at first difference and the diagnostic test were performed. The study established a positive relationship between commercial bank loans and volume of manufacturing index.

Abusharbeh (2017) looked into the impact of some banking sector indicators (credit facilities, depositors fund, the number of branches, and interest rate,) on gross domestic product using quarterly data from the period of 2000 to 2015. The empirical model was carried out using ordinary least square regression to prove that output is significantly influenced by boosting banking sector toward growth. The result reveals that banking credits are positively related to economic growth. This indicates that banking industry development tends to improve productive capacity of Palestinian economy as case of supply leading. However, interest rate, customer's deposits and number of branches have not significant impact on economic growth.

Bongini, Iwanicz-Drozdowska, Smaga and Witkowski (2017) investigated the role of financial development in the economic growth of Central, Eastern and South-Eastern European (CESEE) countries in the post-communist era (1995–2014), which coincides with the opening up of financial markets to foreign investors and the global financial crisis. They investigated whether economic growth in CESEE countries has benefited from the presence of foreign-owned banks. To this end, they introduced some refined measures of financial development and control for banks' financial strength. They results challenged the idea that bank credit fosters economic growth and that foreign-owned banks are indisputably a positive addition to local markets able to foster economic growth.

Alkhazaleh (2017) looked into the association between profitability, deposit and credit

facilities as proxy for performance of commercial banks while gross domestic product proxies economic growth. The population of the study is characterized by the Jordanian banking industry; the study enclosed a period of six years from 2010 to 2015 constructed on the annual report of thirteen chosen banks. Using Ordinary Least Square, the regression outcomes found a significant positive association between measures of bank performance and economic growth. Findings demonstrate that measures of bank performance in particular profitability deposits credits have positive relationship with economic growth as measured by GDP. The empirical results suggest that the policy creators should make arrangements to augment and prompt the banking sector in Jordan on account of its key significance in making and advancing development of the economy.

3. METHODOLOGY

This research adopted an ex-post facto longitudinal/panel research design in the choice of its time-frame; hence it examined features of selected countries in Sub-Saharan African at more than one fiscal period. Panel data is a preferred method of longitudinal data analysis because it allows for a number of regression analyses in both spatial (units) and temporal (time) dimensions. The population of the study is drawn from four countries randomly selected from the pool of forty eight (48) countries in Sub Saharan Africa as follows: Nigeria, South Africa, Kenya, and Ghana. The data that were used in the study were secondary which were sourced from the World Bank from 2002 to 2023. All the data were on annual basis as contained in the source mentioned. The dependent variables are Balance of Payment (BOP) and Gross Savings (GSV), while the independent variables are Banks' Domestic Credit to Private Sector (DCPS), Lending Rate (LENR), and Inflation Rate (INFR). To determine the effect of banks' domestic credit to private sector on balance of payment and gross savings of selected Sub-Saharan African countries, the study applied a Panel Ordinary Least Square (POLS) data analysis and cemented by the Granger Causality test.

A linear and multivariate modified regression model of Udoye, Adigwe, and Okaro (2024) was adapted and modified. The original model is stated as:

$$ED = DCPS, LENR, INFR \quad 3.1$$

Where:
ED = Economic development measured by real gross domestic product, standard of living, and human development index.
DCPS = Domestic Credit to Private Sector by Banks
LENR = Lending Rate
INFR = Inflation Rate

The following equation is so created when equation 3.1 is translated econometrically as:

$$LogBOP_t = \beta_0 + \beta_1 LogBDCPS_t + \beta_2 LogLENR_t + \beta_3 LogINFR_t + \varepsilon_t \quad 3.2$$
$$LogGSV_t = \beta_0 + \beta_1 LogBDCPS_t + \beta_2 LogLENR_t + \beta_3 LogINFR_t + \varepsilon_t \quad 3.3$$

Where:
BOP = Balance of Payment Position

GSV = Gross Savings
$BDCPS$= Banks' Domestic Credit to Private Sector
$LENR$ = Lending Rate
$INFR$ = Inflation Rate
e = Stochastic or disturbance term.
t = Time dimension of the variables
β_0 = Constant or intercept
β_{1-3} = Coefficients to be estimated or the coefficients of slope parameters

4. ANALYSIS OF DATA AND DISCUSSION OF FINDINGS

Descriptive Statistics of the Data

The variables' descriptive statistics are shown in Table 4.1. It shows the total number of observations, mean, median, maximum, minimum, standard deviation and sum of mean deviation. The mean values of the variables: BOP, GSV, DCPD, LENR, and INFR are -7.55E+08, 9.575270, 52.83046, 14.01190, and 9.031986 respectively, while the median of the study variable are -2.04E+0, 8.422193, 27.84906, 13.83906, and 7.838523. The maximum values of the series are 3.65E+10 for BOP, 30.89743 for GSV, 142.4220 for DCPS, 24.77083 for LENR, and 26.23982 for INFR, whereas the minimum values are -2.14E+10, -3.279265, 8.084343, 7.041667 and -0.69203 respectively for BOP, GSV, DCPD, LENR, and INFR. The standard deviations of the variables are 1.08E+10, 7.385696, 47.49859, 3.511593 and 5.124136 for BOP, GSV, DCPD, LENR, and INFR respectively. The measure of asymmetry of the distribution of the series around its mean that is, skewness of BOP, GSV, DCPD, LENR, and INFR are positive. The Kurtosis that measures the peakedness of the distribution of the variables are positive. The p-values of the Jarque-Bera for all the variables are significant at 5% level meaning that all the variables are normally distributed and free from any outlier that may affect the regression output.

Table 4.1: Descriptive Properties of Data

	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	P-value	Obs
BOP	-7.55E+08	-2.04E+0	3.65E+10	-2.14E+10	1.08E+10	1.351996	5.810076	55.12935	0.00000	88
GSV	9.575270	8.422193	30.89743	-3.279265	7.385696	0.227332	2.364577	15.05807	0.00543	88
DCPS	52.83046	27.84906	142.4220	8.084343	47.49859	0.717780	1.729308	10.10759	0.00639	88
LENR	14.01190	13.83906	24.77083	7.041667	3.511593	0.248470	2.989404	7.679417	0.00198	88
INFR	9.031986	7.838523	26.23982	-0.69203	5.124136	1.089281	4.487583	19.13736	0.00007	88

Source: Output data from E-views 12.0

Panel Unit Root Test

The panel unit root test in Tables 4.2 and 4.3 emphasize that all the variable are stationary at first difference. The outcome of the panel unit root test using LLC demonstrates that every variable is stationary at first difference and free of the stationarity defect associated with the majority of time series data, allowing for the testing of the long-term co-integration relationship between the variables

.

Table 4.2: LLC Test Result at First Difference: Individual Intercept

Variables	LLC Test Statistic	Pooled Coefficient	Pooled t-Stat.	Remark
BOP	-5.91229 (0.00)*	-1.29437	-8.406	Stationary
GSV	-2.85600 (0.00)*	-1.20872	-6.606	Stationary
DCPD	-3.68117 (0.00)*	-0.96875	-6.946	Stationary
LENR	-3.98451 (0.00)*	-1.12603	-6.981	Stationary
INFR	-5.18728 (0.00)*	-1.35086	-8.897	Stationary

Source: Output Data using E-view 12.0.

Table 4.3: LLC Test Result at First Difference: Individual Intercept and Trend

Variables	LLC Test Statistic	Pooled Coefficient	Pooled t-Stat.	Remark
BOP	-5.77142 (0.00)*	-1.41581	-9.125	Stationary
GSV	-1.82483 (0.00)*	-1.23338	-6.764	Stationary
DCPD	-2.74661 (0.00)*	-1.13465	-7.693	Stationary
LENR	-3.07939 (0.00)*	-1.13723	-7.064	Stationary
INFR	-4.93326 (0.00)*	-1.38952	-9.351	Stationary

Source: Output Data using E-view 12.0.

Panel OLS Analysis

Balance of Payment and Banks' Domestic Credit to Private Sector

The Hausman test in Table 4.4 suggests the random effect estimation is preferred to fixed effect due to the insignificant p-value (0.690300) of the Chi-square. The result reveals that banks' domestic credit to private sector and lending rate in the four selected Sub-Saharan African countries have positive but insignificant relationship with balance of payment, while inflation rate has positive significant relationship balance of payment. The coefficient of the constant -7.75E+09 indicates that if banks' domestic credit to private sector, lending rate, and inflation rate in the four selected Sub-Saharan African countries are held constant, balance of payment would be down by a factor of -7.75E+09 however, this is not statically significant at a 5% level of significance. A unit increase in banks' domestic credit to private sector, lending rate, and inflation rate would result in a corresponding increase in balance of payment by factors of 4704978, 2.07E+08, and 4.92E+08 respectively. The adjusted R-square value of -0.017123 shows that the explanatory variables jointly accounted for -65.95% variations in balance of payment within the period studied. The F-statistic which determines the overall significance joint effect of the independent variables shows that banks' domestic credit to private sector, lending rate, and inflation rate in the four selected Sub-Saharan African countries significantly explained the variations in balance of payment as the p-value (0.000000) is significant at a 5% significance level. The Durbin Watson statistic (1.556246) which is the traditional test of autocorrelation in a model is within the acceptable range in that the variables in the model are not serially correlated.

Table 4.4: Panel OLS of Balance of Payment and Banks' Domestic Credit to Private Sector

Variables	Pooled OLS		Fixed Effect		Random Effect (* Preferred)	
	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
C	-7.75E+09	0.3167	-1.33E+09	0.8846	-7.75E+09	0.3402
DCPS	4704978.	0.8904	-1.32E+08	0.2866	4704978.	0.8956
LENR	2.07E+08	0.6381	3.31E+08	0.4822	2.07E+08	0.6542
INFR	4.92E+08	0.0396	4.00E+08	0.1244	4.92E+08	0.0496
R-squared	0.681896		0.691714		0.681896	
Adjusted R-squared	0.659573		0.658083		0.659573	
S.E. of regression	7.41E+09		7.42E+09		7.41E+09	
Sum squared resid	3.13E+21		3.03E+21		3.13E+21	
Log likelihood	-1494.373		-1493.401			
F-statistic	30.54672		20.56762		30.54672	
Prob(F-statistic)	0.000000		0.000000		0.000000	
Durbin-Watson stat	1.556246		1.493758		1.556246	
Hausman Specification Test						

	Chi-Sq. Statistic	2.247486
	P-value	0.690300

Source: Computer output data using E-views 12.0
Note: Periods included: 22, Cross-sections included: 4, Total Number of Observations: 88

Gross Savings and Banks' Domestic Credit to Private Sector

From the Hausman test in Table 4.5, the random effect is favoured as the p-value of the Chi-square is insignificant at 5% level. The result discloses that banks' domestic credit to private sector and lending rate in the four selected Sub-Saharan African countries have negative significant relationship with gross savings, while inflation rate has positive insignificant relationship with gross savings. According to the constant coefficient of 16.12460, keeping banks' domestic credit to private sector, lending rate, and inflation rate constant, gross saving would rise by 1612%. Increasing banks' domestic credit to private sector and lending rate in the four selected Sub-Saharan African countries by a unit respectively lead to 8.15% and 57.84% depreciation in gross savings. On the other hand, a percent increase in inflation rate leads to 7.70% appreciation in gross savings. The F-statistic value of 22.14143with a p-value of 0.000000 shows that banks' domestic credit to private sector, lending rate, and inflation rate jointly and significantly explained the changes in gross savings. Going by the adjusted R-squared of 0.601610, it is crystal clear that the explanatory variables reasonably accounted for joint contribution of 60.16% changes in gross savings. It is also observed from the Durbin Watson statistic that the variables in the model are free from autocorrelation problem and inferences deduced is reliable in statistical terms as revealed in Table 4.5 of a Durbin Watson value of 2.13.

Table 4.5: Panel OLS of Gross Savings and Banks' Domestic Credit to Private Sector

Variables	Pooled OLS		Fixed Effect		Random Effect (* Preferred)	
	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
C	15.52444	0.0063	13.05682	0.0727	16.12460	0.0046
DCPS	-0.078377	0.0023	-0.044136	0.6553	-0.081558	0.0014
LENR	-0.574011	0.0477	-0.530090	0.0817	-0.578480	0.0432
INFR	0.100004	0.5264	0.125275	0.4433	0.077040	0.6173
R-squared	0.623483		0.628956		0.630066	
Adjusted R-squared	0.594521		0.584431		0.601610	
S.E. of regression	4.393013		4.447332		4.238267	
Sum squared resid	1003.525		988.9379		934.0713	
Log likelihood	-162.6238		-162.2065			
F-statistic	21.52703		14.12584		22.14143	
Prob(F-statistic)	0.000000		0.000000		0.000000	
Durbin-Watson stat	2.153756		2.123170		2.136007	
Hausman Specification Test						
	Chi-Sq. Statistic		6.045116			
	P-value		0.195800			

Source: Computer output data using E-views 12.0
Note: Periods included: 22, Cross-sections included: 4, Total Number of Observations: 88

Granger Causality Effect Result

As shown in Table 4.6, there is no unidirectional or bidirectional causal

relationship between banks' domestic credit to private sector, lending rate, inflation rate, and balance of payment. Causality does not run from banks' domestic credit to private sector, lending rate, and inflation rate to balance of payment or from balance of payment to banks' domestic credit to private sector, lending rate, and inflation rate at a significance level of 5%. This is an indication that banks' domestic credit to private sector in the selected Sub-Saharan African countries has no significant effect on balance of payment. Similarly, lending rate and inflation rate have no significant effect on balance of payment in the selected Sub-Saharan African countries. The revelation in Table 4.7 is that there is a unidirectional causal relationship between banks' domestic credit to private sector and gross saving. Causality flows from banks' domestic credit to private sector to gross saving at a 5% significance level. The implication is that banks' domestic credit to private sector has significant effect on gross saving in the four selected Sub-Saharan African countries. On the other hand, causality does not flow from lending rate and inflation rate to gross savings at a 5% significance level. This indicates that lending rate and inflation rate have no significant effect on gross savings.

Table 4.6: Balance of Payment and Banks' Domestic Credit to Private Sector

Null Hypothesis:	Obs	F-Statistic	Prob.	Remarks
DCPS does not Granger Cause BOP	84	1.93568	0.1680	No Causality
BOP does not Granger Cause DCPS		0.04683	0.8292	No Causality
LENR does not Granger Cause BOP	63	3.92197	0.0523	No Causality
BOP does not Granger Cause LENR		2.99534	0.0887	No Causality
INFR does not Granger Cause BOP	84	3.19913	0.0775	No Causality
BOP does not Granger Cause INFR		0.25723	0.6134	No Causality

Source: Computer output data using E-views 12.0

Table 4.7: Gross Savings and Banks' Domestic Credit to Private Sector

Null Hypothesis:	Obs	F-Statistic	Prob.	Remarks
DCPS does not Granger Cause GSV	84	9.96536	0.0023	Causality
GSV does not Granger Cause DCPS		0.07855	0.7800	No Causality
LENR does not Granger Cause GSV	63	2.08475	0.1546	No Causality
GSV does not Granger Cause LENR		2.06926	0.1561	No Causality
INFR does not Granger Cause GSV	84	1.14786	0.2874	No Causality
GSV does not Granger Cause INFR		3.14773	0.0801	No Causality

Source: Computer output data using E-views 12.0

Discussion of Findings

There is no significant effect of banks' domestic credit to private sector on balance of payment even though there is presence of positive insignificant relationship between banks' domestic credit to private sector and balance of payment. This result contradicts Alzyadat (2021) who revealed that the overall impact of total bank credit has a significant and positive effect on non-oil economic growth in KSA. The results revealed that the effect of bank credit on the non-oil GDP growth in the short and long run was uneven. This also does not fit well for the study because when banks provide adequate credit to businesses, particularly in export-oriented sectors**,** firms can expand production, enhance competitiveness, and increase foreign exchange earnings through higher exports. This improves the current account balance**,** strengthening the overall balance of payment

position. Additionally, access to credit for local industries reduces dependence on imports by promoting domestic production, thereby lowering foreign currency outflows. Import substitution industries, supported by bank financing, can produce goods that would otherwise be imported, helping to correct trade deficits. Bank credit also supports foreign direct investment by funding infrastructure and technological advancements, making the country more attractive to investors. This is in line with Igbinedion (2022), Awad and Karaki (2019), and Dinh (2020) increased foreign direct investment inflows improve the capital account balance, further strengthening the foreign direct investment. The significant effect of banks' domestic credit to private sector on gross savings supports the works of Araoye, Aruwaji, and Obafemi (2020), Ibrahim and Ifeyinwa (2020), and Abina and Obi (2020). This signifies the crucial role of banks in enhancing national savings by fostering economic growth, increasing household income, and promoting financial inclusion. When banks extend credit to businesses, they invest in productive activities, leading to job creation, higher wages, and increased disposable income. As individuals earn more, they have greater capacity to save, boosting national savings. Additionally, bank credit helps households and businesses accumulate assets by financing long-term investments, such as real estate and entrepreneurship. These investments generate returns, encouraging further savings. Moreover, bank credit supports the development of financial markets and instruments such as fixed deposits, bonds, and retirement savings plans. With better access to credit, individuals and businesses are more likely to participate in financial markets, contributing to higher national savings rates.

5. CONCLUSION AND RECOMMENDATIONS

Financial institutions have the power to influence large saving opportunities and propensities. Any economy that wants to experience continuous economic development can do so if it has robust financial institutions, specifically a healthy banking sector. This study examined the effect of banks' domestic credit to private sector on balance of payment and gross savings in four selected Sub-Saharan African countries (Nigeria, South Africa, Ghana, and Kenya). The study applied a Panel Ordinary Least Square (POLS) data analysis and cemented by the Granger Causality test. The study concludes that banks' domestic credit to private sector has no significant effect on balance of payment in the four selected Sub-Saharan African countries (Nigeria, South Africa, Ghana, and Kenya), while gross savings in the four selected Sub-Saharan African countries was significantly affected by banks' domestic credit to private sector. Sub-Saharan Africa governments should consider more export promotion through massive industrialization, trade policies, and incentives for businesses. Implementing prudent monetary and fiscal policies will ensure currency stability and prevents excessive external borrowing.

To improve gross savings, governments in Sub- Saharan Africa should implement policies that promote financial inclusion, investment, and responsible fiscal management. Encouraging higher interest rates on savings accounts, tax incentives for savings, and pension fund reforms can motivate individuals to save more.

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