FINANCIAL SECTOR DEVELOPMENT AND ECONOMIC GROWTH IN NIGERIA: A DYNAMIC MULTIPLE REGRESSION APPROACH

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Abstract
The debate on the direction of the relationship between financial development and economic growth has continued to attract scholarly attention despite having a long history. This study employs a dynamic multiple regression framework to examine the impact of financial sector development on economic growth in Nigeria using quarterly time series data spanning from 1981Q1 to 2022Q4. Financial sector development is measured in terms of domestic credit of private sector, net credit to government, and stock market capitalization, while economic degrowth is measured by real GDP. We find that none of the financial development measures exert a significant effect on economic growth. However, while both domestic credit to private sector and net credit to government have negative coefficients, stock market capitalization has a positive coefficient. Hence, consistent with the finance-neutrality hypothesis, we conclude that both financial institutions and financial markets have so far been unable to effectively channel financial resources into productive real economic activities for growth and development.

Key words: Financial sector development, economic growth, dynamic multiple regression

1 Introduction

The importance of the financial sector in economic growth and development has received considerable attention in literature. The financial sector provides financial resources for productive use, reduces asymmetric information and other frictions in the financial markets, monitors corporate investments, and manages investment risks. The financial sector also provides structures for asset diversification, monetary and liquidity management, links economic activities of different sectors, and provides incentives for a high level of specialization expertise and economies of scale (Nzotta & Okereke, 2009). There seems to be a consensus that sustained economic growth requires a well-functioning and robust financial sector. According to Creane et al. (2004), financial sector development predicts physical capital accumulation, productivity growth, and economic growth. According to Tongurai and Vithessonthi (2018), financial sector allocates financial resources to investment activities that promises high returns, thereby playing a direct positive and significant role in in economic development.

The Nigerian financial sector has undergone several major reforms which are all aimed to improve its efficiency and robustness in resource mobilization and allocation towards economic growth and prosperity. In the early 1970s, the financial sector experienced high regulation with controlling shares of most banks held by the Federal government (Odeniran & Udeaja, 2010). However, the journey to liberalize the financial system started with the introduction of Structural Adjustment Programme (SAP) in 1986. In 2004, another major reform was introduced that forced banks into merger and acquisition in a bid to increase their capital base to a new minimum at ₦25billion. This consolidation reform led to the closure of many banks and the emergence of new, large, strong and resilient banks. In 2009, the Central bank of Nigeria introduced another significant reform in response to the 2008 financial crisis that hit the global financial system. The newly introduced reform, which revealed the unethical practices by some banks' chief

executives, focused on risk management and corporate governance. In 2021, a new reform that led to the full demutualization of the Nigerian stock exchange was introduced. The exchange changed from its previous member-owned not-for-profit status to a stakeholder-owned, profit-making status, leading to the emergence of an entirely new structure. In particular, NGX group (short for Nigerian Exchange Group Plc) was created with three subsidiaries: namely, Nigerian Exchange Ltd or NGX Exchange, NGX Regulation Ltd or NGX REGCO, and NGX Real Estate Limited or NGX RELCO).

There is an age-long but still on-going debate in both the theoretical and empirical literature regarding the effect of financial development on economic growth. Although, the argument that financial sector drives real economic activities towards economic growth and development seems to be less ambiguous and generally accepted, there is however, little agreement among scholars and policymakers regarding the direction (positive or negative) of the effect of financial sector development on economic growth. While some scholars (for example, Alexiou et al. (2018) and Adeniyi et al. (2015)) find that financial sector development hampers economic growth, others (for example, Balago (2014) and Taddese and Abebaw (2023)) conclude that financial sector development has a positive effect on economic growth. It may be the case that the direction of the impact of financial sector on economic growth depends on the channel through which financial shocks transmit into the real economy. Paun et al. (2019) find that number of bank branches has a significant positive effect on economic growth, while domestic credit to private sector exerts a significant negative growth effect. It may also be the case that the direction of the effect of financial sector development on economic growth depends on the extent to which financial sector growth coincides with the rate of growth of the real sector. According to Ibrahim and Alagidede (2018), financial development would exert a positive growth effect only if both the financial sector and real sector grow at the same speed. On the contrary, however, if both financial and real sectors grow disproportionately, then financial development hampers economic growth.

This study therefore contributes to the on-going debate on finance-growth nexus by analyzing the impact of financial sector development on economic growth in Nigeria using up-to-date quarterly time series data for the period from 1985Q1 to 2022Q4. In particular, the study empirically tests three channels through which financial sector development is linked to real economic output: namely, private sector credit, government credit, and the stock market.

2 Literature Review

2.1 Basic Theory – Finance-Led Growth Theory

The finance-led growth theory emphasizes the important role of financial sector in economic growth process. The theory was first suggested by Schumpeter (1911) and was later promoted by McKinnon (1973) and Shaw (1973). While Schumpeter (1911) highlights the importance of the financial sector to innovation and technological progress, McKinnon (1973) and Shaw (1973) contend that financial liberalization is a key strategy for achieving and sustaining economic growth. According these authors, financial liberalization improves the efficiency of financial intermediation by reducing information asymmetry and costs of intermediation (e.g. information costs, transaction and monitoring costs), thereby improving savings and capital accumulation and enhancing national economic output. Also, a well-functioning financial sector effectively links the surplus unit and the deficit unit of the economy at a minimum cost thereby providing the financial resources need to improve savings, investment, employment, and output (Akintola et al., 2020). This implies a direct causal flow from financial sector development to economic growth. Hence, finance-led growth theory links growth shocks to financial sector development and performance.

2.2 Empirical Literature Review

In Nigeria, Balago (2014) examines the empirical association between financial sector development and economic growth using time series data for the period from 1990 to 2009. The empirical analysis of the study is based on several time series methods such as ADF non-stationarity test, Johansen cointegration test, VECM, and OLS. The study findings show that financial sector development enhances economic growth or real GDP through banking sector credits, foreign direct investment, and total market capitalization.

Adeniyi et al. (2015) reconsider the empirical nexus between financial sector development and economic growth in Nigeria using an ARDL model. Using yearly time series data for the period from 1960 to 2010, they find that financial development exerts a negative and significant effect on economic growth. They also find that financial system reforms do not significantly affect the empirical relationship between financial sector development and economic growth.

Focusing on the Central and Eastern EU countries and the Commonwealth of Independent States, Cojocaru et al. (2016) consider the significance of financial development in economic growth process over the period from 1990 to 2008. 25 countries are included in their sample, while their empirical analysis is based on system generalized method

of moment (S-GMM) framework. They find that financial sector development plays an enhancing role in the growth process of the economy. However, their empirical evidence also suggests that financial market efficiency and competitiveness are more significant in enhancing economic output than market size.

For 29 sub-Saharan African countries, Ibrahim and Alagidede (2018) use the system generalized method of moment (S-GMM) to explore the impact of financial sector on economic growth when the financial and real sectors growth disproportionately. The empirical analysis is based on panel data covering the period from 1980 to 2014. The reported empirical evidence suggests that although, financial development exerts a positive and significant effect on economic output, the concurrent growth of both financial and real sectors is the main determining factor of the extent to which financial sector supports economic growth. Also, their empirical evidence shows that higher excess finance (i.e., the difference between finance and real economy growth rates), is associated with lower economic growth.

Siva Kiran Guptha and Prabhakar (2018) employ the Toda-Yamamoto causality framework to investigate whether financial system development in BRICS countries is behind their recently achieved impressive growth rates. Financial system development in measured in terms of financial system development index, financial market development index, and financial institution development index, with each index encompassing depth, efficiency, stability dimensions. Using a panel dataset covering from 1996 to 2016, they find evidence of a significant impact from financial sector development to economic growth in most of the BRICS countries. However, for South Africa, the empirical evidence tends to validate the neutrality hypothesis, while for India, demand-following hypothesis is more pronounced than finance-led hypothesis.

Yang (2019) investigates the extent to which the growth of the financial sector is associated with economic development, comparing three income groups: namely, trapped middle-income economies, graduated middle-income economies, high-income economies. Their dataset spans from 1970 to 2016 while their empirical analysis involves 47 countries. They find that financial development leads economic growth through physical capital stock and total factor productivity. Also, while banking sector development and inflation are bi-causally related, stock market development leads to higher economic growth. However, there is evidence of reverse causality from economic growth and stock market development in high-income countries.

Paun et al. (2019) investigate extent to which financial sector development, sophistication, and performance drive economic growth in several countries using a panel regression framework. Their empirical analysis covers a ten-year period from 2006 to 2015 and involves 45 countries. Using a linear panel regression method, they find that number of bank branches has a significant positive effect on economic growth, domestic credit to private sector exerts a significant negative effect. They also find that financial system sophistication, financial system quality, and financial inclusion all exert a positive and significant effect on economic growth.

Guru and Yadav (2019) employ the system GMM framework to investigate the empirical association between financial development and economic growth for five BRICS countries: namely, Brazil, China, India, Russia, and South Africa, over the period from 1993 to 2014. Financial development is considered from the perspective of banking sector performance and stock market development. They find that both banking sector performance and stock market development complement each other in driving economic growth in the positive direction.

Opoku et al. (2019) study the causal nexus between financial development and economic growth in 47 African countries over the period from 1980 to 2016. Their causality analysis of finance-growth relationship is anchored on a frequency-domain spectral Granger causality method. Financial development is measured using an index comprising both financial market and financial institutions dimensions, with each dimension having three measures: namely, depth, access, and efficiency. They conclude that financial development does not matter for economic growth, measured by per capita growth in gross domestic product.

Imoagwu and Ezeanyeji (2019) seek to establish empirically the extent of the relationship between financial development and economic growth in Nigeria focusing on the period from 1986 to 2017. They examine financial development from the perspective of financial deepening using broad money supply ratio to GDP, stock market capitalization, credit to private sector ratio to GDP, and interest rate as proxies. For empirical analysis, the use time series data at yearly frequency as well as employ ADF and PP unit root tests, cointegration test, and Toda-Yamamoto causality test. Consistent with the finance-led growth theory, they find that a one-way causality flows from finance to growth. Also, their empirical findings show that financial development substantially increases economic growth in the short run, while its long-run impact on growth is negative and significant. Both interest rate and stock market capitalization are found to exert a negative long-run impact on economic growth while their short-run growth impact

is positive and significant. However, credit to private sector ratio to GDP exerts a positive and significant effect on economic growth in the long run, while its short-run impact is insignificant.

Tariq et al. (2020) investigate the nonlinear associations between financial sector development and economic growth in Pakistan for the period from 1980 to 2017 using the threshold regression and quantile regression methods. They provide evidence that the empirical interaction between financial sector development and economic growth has U-shape non-linear effect. More specifically, the evidence reported indicate that financial development affects economic growth negative when the threshold value of financial development falls below 0.15, while it affects economic growth positively when the level of financial development exceeds the threshold value of 0.15. The reported findings are based on a model that incorporate physical capital, labour force, government expenditure, inflation, and trade openness as control variables.

Paudel and Acharya (2020) employ the ARDL method to study the cointegrating relationship between financial sector development and economic growth in Nepal using time series data for the period from 1965 to 2018. Their measurement model for financial development includes broad money supply, domestic credit to private sector, total banking sector credit, capital formation, and foreign direct investment. They find that all indicators of financial sector development, except foreign direct investment, are significant and positive channels through which financial sector development enhances economic growth.

Nguyen and Pham (2021) use a panel dataset to estimate the significance of financial development in economic growth process from 1990 to 2020, focusing on transitional economies. Economic growth, which is the dependent variable, is measured in terms of real income per capita based on purchasing power parity or PPP, while financial sector development is measured in terms broad money to GDP ratio, credit to private sector ratio to GDP, and stock market capitalization to GDP ratio. Using the system GMM framework, they provide consistent evidence that the three measures of financial development all exert a positive and highly significant impact on economic growth. However, the square if these variables is negatively signed in the growth model, thereby confirming that the relationship between financial development and growth has an inverted U-shape non-linear effect.

In Nigeria, Afolabi (2022) analyzes the impact on economic growth of financial liberalization as a proxy for financial development using the ADF non-stationarity test, Johansen integration, Granger causality, and dynamic OLS method. Also, the study incorporates the role of trade openness in the growth process and focusses on the period from 1981 to 2018 using yearly time series data. They find that financial development, interest rate and exchange rate are all significant explanatory factors for economic growth in Nigeria.

Taddese and Abebaw (2023) examine the dependence of economic growth on financial sector development in sub-Saharan African countries using the panel regression approach. More specifically, they employ the system GMM method to analyze three dimensions of the financial sector: namely, depth (credit to private sector ratio to GDP), access (number of commercial bank branches per 100,000 adults), and efficiency (return on assets), in relation to real GDP per capita using a panel dataset comprising 25 countries and covering the period from 2010 to 2017. Consistent with the finance-led growth theory, they provide evidence that all the three dimensions of financial sector development exert a positive and significant effect on economic growth.

3 Methodology

3.1 Data

We use quarterly time series data covering the period from 1985Q1 and 2022Q4 are used. Hence, the study sample consists of 152 observations which we consider adequate for a dependable empirical outcome. Judgmental sampling method is used for sample selection. This study uses quantitative data obtained from secondary sources, more specifically, from the CBN statistical bulletin. Hence, the desk method is employed for data collection.

Empirical Framework

The model for the effect of financial sector development on economic growth is given as follows:

$$LRGDP_t = \beta_0 + \beta_1 LDCP_t + \beta_2 LNCG_t + \beta_2 LMCAP_t + \varepsilon_t \quad (3)$$

Where L means logarithm; β_0 is the regression intercepts; β_1 captures the effect domestic credit to private sector on real GDP; β_2 captures the effect net credit to government on real GDP; β_3 captures the effect market capitalization on real GDP and ε_t represents the error term.

4 Data Analysis

Data analysis is divided into descriptive analysis and empirical analysis.

4.1 Descriptive Statistics

Table 1 provides the basic descriptive statistics for study variables.

Table 1: Basic Descriptive Statistics

Statistic	RGDP	DCP	NCG	MCAP
Mean	5782.1	8198.5	1658.2	5289.0
Std. Dev.	7976.9	10990.7	4398.0	6686.9
Skewness	0.7	1.2	2.7	1.3
Kurtosis	1.6	3.5	11.0	4.4
Jarque-Bera	25.6	40.5	590.7	58.4
Probability	0.0000	0.0000	0.0000	0.0000

As Table 1 reveals, RGDP averaged ₦5782.1billion over the period under investigation (1985Q1 – 2022Q4), while DCP, NCG, and MCAP respectively averaged ₦8198.5billion, ₦1658.2billion, and ₦5289.0billion over the sample period. According to the skewness and kurtosis coefficients, all the study variables have a positively skewed and leptokurtic distribution. The Jarque-Bera statistic has a zero p-value in all cases, thereby confirming that none of variables has a normal distribution.

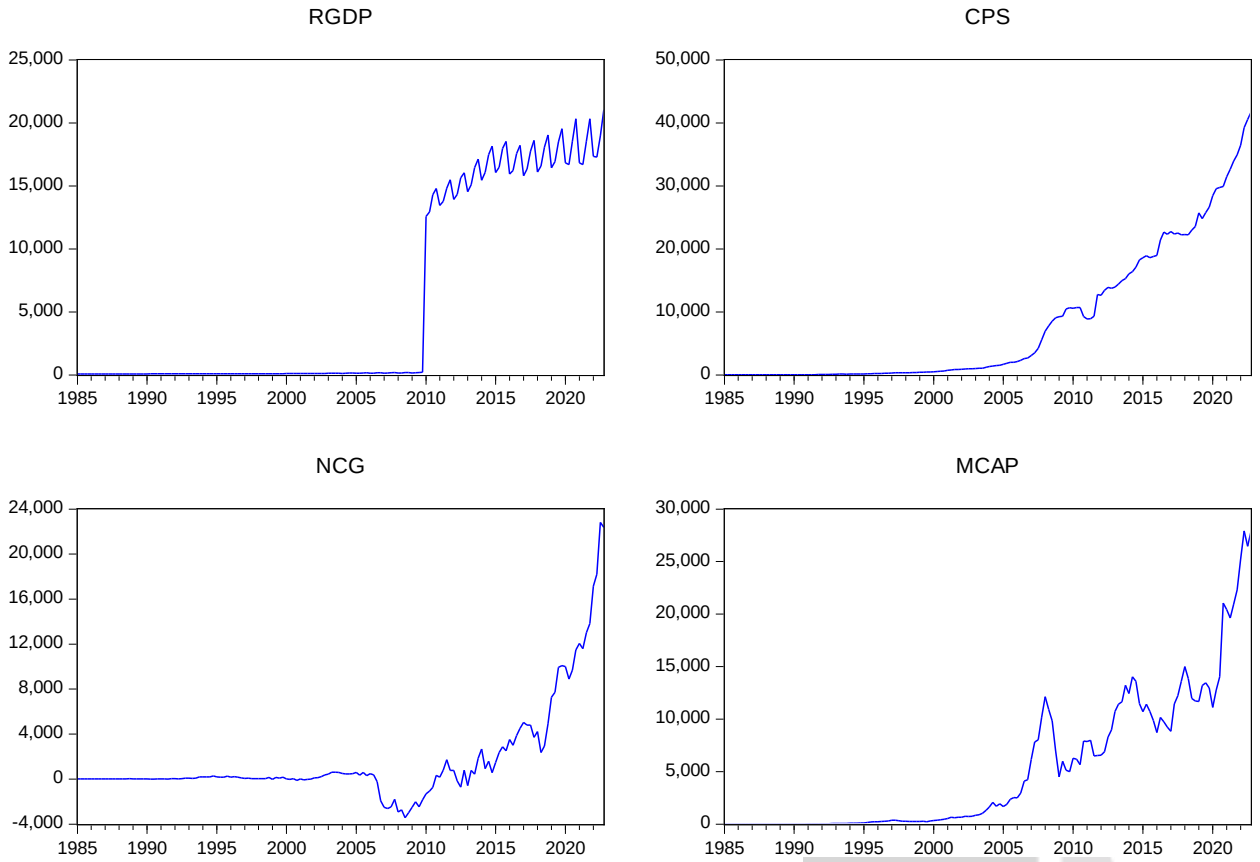

Figure 1: Time series plot for RGDP, DCP, NCG, and MCAP

As shown by Figure 1, the variables all trended upward overtime fluctuations.

4.2 Empirical Analysis

Table 2 shows the regression results for the impact of impact of financial sector development on economic growth in Nigeria.

Regression Results (Dependent Variable = RGDP)

Variable	Coefficient	P-value
LRGDP(-1)	0.9971	0.0000
LDCP	-0.0034	0.8203
LNCG	-0.0027	0.6109
LMCAP	0.0059	0.6079
Intercept	0.0054	0.1452
R-squared	0.9983	
Adjusted R-squared	0.9982	
F-statistic	43371.4	
Prob(F-statistic)	0.0000	
Durbin-Watson stat	2.1446	

From Table 2, we can see that the coefficient on the lagged dependent variable (LRGDP(-1) =0.9971, p-value = 0.0001) is positive, close to one, and highly significant, showing that real GDP exhibits strong persistence and hence can be predicted based on its previous performance. For the main coefficients of interest, we can observe that both LDCP (= -0.0034, p-value = 0.8203) and LNCG (0.0027, p-value = 0.6109) are negative but not statistically significant, indicating that both domestic credit to private sector and net credit to government have significant effect on real GDP This implies that financial institution development does not significantly explain economic growth in Nigeria. Also, the coefficient on LMCAP (=0.0059, p-value = 0.6079) lacks statistical significance, despite having a positive sign. This shows that increase in market capitalization tends to be followed by increase in real GDP, while its effect on economic growth is inconsequential. Hence, our empirical results show that financial sector does not significantly drive economic growth in Nigeria.

4.3 Discussion of Results

Theoretically, financial development drives economic growth. A well functional financial system effectively links the surplus unit and the deficit unit of the economy at a minimum cost thereby providing the financial resources needed to improve savings, investment, employment, and output (Akintola et al., 2020).

Contrary to finance theory, our findings reveal that financial development is not significant in driving economic growth in Nigeria. The three financial development proxies (credit to private sector, net credit to government, and stock market capitalization), all are not statistically significant in financial sector development model. However, in terms of the signs of the individual coefficients, the results are mixed. Both domestic credit and net credit to government enter the specified model with a negative sign, while the sign attached to stock market capitalization is positive. This shows the tendency for financial institutions to impede economic growth as well as the potential of capital market to drive economic growth. One explanation is weak and vulnerable financial system, which limits the ability of the financial sector to mobilize funds required to drive economic growth and development. This finding tends to be consistent Tongurai and Vithessonthi (2018) and Opoku et al. (2019) but contradicts other authors including Paudel and Acharya (2020), Nguyen and Pham (2021) and Taddese and Abebaw (2023).

5 Summary and Conclusion

The study examines the finance the finance-growth relationship in the contest of Nigeria using quarterly data from 1981 to 2022. We proxy economic growth by real GDP, while financial sector development is examined in terms of financial institutions development (credit to private sector and stock market development (stock market capitalization). The findings are as follows:

1. Domestic credit to private sector has a negative but inconsequential effect on real GDP.
2. Net credit to government has a negative but inconsequential effect on real GDP.
3. Stock market capitalization has a positive but inconsequential effect on real GDP.

Based on our empirical findings, we conclude that financial sector development does not drive economic growth in Nigeria. In other words, we confirm the finance-neutrality hypothesis and argue that both financial institutions and financial markets have so far been unable to effectively channel financial resources into productive real economic activities for the growth and development of the national economy.

References

Adeniyi, O., Oyinlola, A., Omisakin, O., & Egwaikhide, F. O. (2015). Financial development and economic growth in Nigeria: Evidence from threshold modelling. *Economic Analysis and Policy*, *47*, 11-21.

Afolabi, J. (2022). Financial development, trade openness, and economic growth in Nigeria. *Iranian Economic Review*, *26*(1), 237-254.

Akintola, A. A., Oji-Okoro, I., & Itodo, I. A. (2020). Financial sector development and economic growth in Nigeria: An empirical re-examination. *Economic and Financial Review*, *58*(3), 59-84.

Alexiou, C., Vogiazas, S., & Nellis, J. G. (2018). Reassessing the relationship between the financial sector and economic growth: Dynamic panel evidence. *International Journal of Finance & Economics*, *23*(2), 155-173.

Balago, G. S. (2014). Financial sector development and economic growth in Nigeria: An empirical investigation. *International Journal of finance and Accounting*, *3*(4), 253-265.

Cojocaru, L., Falaris, E. M., Hoffman, S. D., & Miller, J. B. (2016). Financial system development and economic growth in transition economies: New empirical evidence from the CEE and CIS countries. *Emerging Markets Finance and Trade*, *52*(1), 223-236.

Creane, S., Mobarak, A. M., Goyal, R., & Sab, R. (2004). *Financial sector development in the Middle East and North Africa*. (IMF Working Paper No. WP/04/201) https://ssrn.com/abstract=879026

Guru, B. K., & Yadav, I. S. (2019). Financial development and economic growth: panel evidence from BRICS. *Journal of Economics, Finance and Administrative Science*, *24*(47), 113-126.

Ibrahim, M., & Alagidede, P. (2018). Effect of financial development on economic growth in sub-Saharan Africa. *Journal of Policy Modeling*, *40*(6), 1104-1125.

Imoagwu, C. P., & Ezeanyeji, C. I. (2019). Financial development and economic growth nexus in Nigeria. *International Journal of Business and Management Invention*, *8*(3), 50-63.

Mckinnon, R. I. (1973). *Money, capital and banking*. Brooklyn Institution.

Nguyen, P. T., & Pham, T. T. T. (2021). The impact of financial development on economic growth: Empirical evidence from transitional economies. *The Journal of Asian Finance, Economics and Business*, *8*(11), 191-201.

Nzotta, S. M., & Okereke, E. J. (2009). Financial deepening and economic development of Nigeria: An empirical investigation. *African Journal of Accounting, Economics, Finance and Banking Research*, *5*(5), 52 – 66.

Odeniran, S. O., & Udeaja, E. A. (2010). Financial sector development and economic growth: Empirical evidence from Nigeria. *Economic and Financial Review*, *48*(3), 91-124.

Opoku, E. E. O., Ibrahim, M., & Sare, Y. A. (2019). The causal relationship between financial development and economic growth in Africa. *International Review of Applied Economics*, *33*(6), 789-812.

Paudel, R. C., & Acharya, C. P. (2020). Financial development and economic growth: Evidence from Nepal. *NRB Economic Review*, *32*(1), 15-36.

Paun, C. V., Musetescu, R. C., Topan, V. M., & Danuletiu, D. C. (2019). The impact of financial sector development and sophistication on sustainable economic growth. *Sustainability*, *11*(6), 1713. https://doi.org/10.3390/su11061713

Schumpeter, J. A. (1911). *Theory of economic development*. Harvard University Press.

Shaw, E. S. (1973). *Financial deepening m economic development*. Oxford University Press.

Siva Kiran Guptha, K., & Prabhakar Rao, R. (2018). The causal relationship between financial development and economic growth: an experience with BRICS economies. *Journal of Social and Economic Development*, *20*(2), 308-326.

Taddese Bekele, D., & Abebaw Degu, A. (2023). The effect of financial sector development on economic growth of selected sub-Saharan Africa countries. *International Journal of Finance & Economics*, *28*(3), 2834-2842.

Tariq, R., Khan, M. A., & Rahman, A. (2020). How does financial development impact economic growth in Pakistan?: New evidence from threshold model. *The Journal of Asian Finance, Economics and Business (JAFEB)*, *7*(8), 161-173.

Tongurai, J., & Vithessonthi, C. (2018). The impact of the banking sector on economic structure and growth. *International Review of Financial Analysis*, *56*, 193-207.

Yang, F. (2019). The impact of financial development on economic growth in middle-income countries. *Journal of International Financial Markets, Institutions and Money*, *59*, 74-89.