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Financial Deepening in Ghana; Does Macroeconomics Matter

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ABSTRACT

Financial deepening plays a pivotal role in fostering economic growth, alleviating poverty, and mitigating social inequalities. Employing the Vector Autoregressive Model (VAR), this study examines the implications of per capita gross domestic product (GDP), interest rates, and inflation rates for financial deepening (FD) in Ghana. GDP per capita and interest rates exhibit statistically significant impacts on FD in Ghana. The statistically significant influence of GDP per capita and interest rates underscores their significance as robust favourable determinants of financial sector development in Ghana. Hence, policymakers are entreated to closely monitor the behaviour of these macroeconomic variables that positively influence financial deepening, as they play crucial roles in fostering economic growth.

Keywords— Financial Deepening, GDP per capita, Economic Growth, Interest Rate, Inflation, VAR

Introduction

Every economy is supported by macroeconomic factors, which offer direction for steady, balanced growth. Governments can evaluate their methods of governance and formulate policies by analysing these characteristics, which are a crucial point of reference (Güngör, Çiftçioğlu & Balcılar, 2014). Since banks make up the majority of Ghana's financial industry, understanding the sector's resilience is essential to developing policies that will keep it afloat. To support economic growth, rein in inflation, and lower unemployment rates, fiscal policy decisions are made to maintain and strengthen system stability (Agyapong, Adam & Asiamah, 2016).

To maintain market and economic stability, certain macroeconomic decisions must be managed by the government, as described in Keynes' (1936) *General Theory of Employment, Interest, and Money*. According to Keynes, production and unemployment are impacted by externalities, which also have an impact on aggregate demand. The financial system's smooth operation will be supported by modest fiscal policy actions taken by the government, such as interest rate changes.

However, with the Ghanaian financial sector at a crossroads, it has the power to invigorate and impair financial sector development (Feldman & Wagner, 2002). A successful fiscal reform in the financial sector, especially the bank sector, is a necessary condition for stabilizing the economy. According to Feldman and Wagner (2002), a well-developed financial system tends to enjoy stable and faster long-run

growth. For instance, there is a raging debate on the best interest rate regime for the growth of the financial sector and the economy at large. According to some leading academics (McDonald, 1983; Gupta, 1984; Caminati, 1981; Smyth, 1993), positive interest rates are macroeconomic policy tools that promote personal saving. The idea that lower interest rates facilitate higher consumption and spending during recessions is supported by additional research (Paleyo-Romero, 2020; Smith, 2021; Hughes, 2016). In order to add to the body of knowledge already available on the realities in Ghana, it is necessary to engage in the discussion that has followed.

For economic growth, Quartey (2008) emphasises deepening financial sector development is a prerequisite. The question is whether macroeconomic indicators matter. Altaee and Al-Jafari (2019) recently agreed that financial development not only boosts domestic savings but also has a long-term positive impact on the economy. Their argument is, that controlling macroeconomic variables like inflation and unemployment boosts economic growth (Juster & Wachtel, 1972). This empirical study associates a positive link between financial sector development and unanticipated inflation (Juster & Wachtel, 1972). Campbell and Lovati (1979) associate price level increases with improvement in savings due to better quality of service in the financial sector. Following these unsettled positions, this study attempts to provide results from its official inquiry using secondary data.

Theoretical Literature

According to Alexander and Baden (2000), the financial sector is the conglomeration of organisations, systems, and laws that permit transactions involving the initiation and repayment of loans, or the granting of credit. The ownership of wealth can be separated from the actual control of capital by the financial system. The financial sector grows with an economy in terms of the variety and quantity of financial products it offers, the sophistication and interconnection of financial institutions, and the extent to which financial markets are penetrated geographically (a process known as financial sector development). The main goal of improving the financial industry is to lower systemic "costs." Financial contracts, intermediaries, and markets are the product of these efforts to lower the costs associated with information collection, contract enforcement, and transaction execution. Differentiated contracts, intermediaries, and markets have been promoted by regulatory, legal, and tax frameworks in different nations and eras (Global Financial Development Report, 2014).

Financial development and economic growth theory

The seminal contributions of Schumpeter (1911; Adu, Marbuah & Mensah, 2013), followed by the works of Goldsmith (1969), McKinnon (1973), and Shaw (1973), have spurred significant interest in the macroeconomic realm regarding the interplay between financial development and economic growth. Drawing from Schumpeter's (1911) pioneering framework, widely acknowledged as the foundation of the finance-led growth hypothesis, it posits that a well-functioning financial system serves as a catalyst for technical innovation, thereby fostering growth by facilitating the efficient allocation of resources from unproductive to productive sectors. This perspective aligns closely with Patrick's (1966) Supply-Leading Hypothesis, which underscores the role of a robust financial sector in driving economic expansion. Patrick (1966) argues that a robust financial sector, established ahead of demand, steers the real sector towards growth by reallocating resources from surplus to deficit spending units based on optimal investment returns. In contrast, Robinson (1952) and Patrick (1966) present alternative viewpoints, emphasizing the growth-led finance (Robinson, 1952) and demand-following (Patrick, 1966) hypotheses. These theories posit that a burgeoning real sector generates increased demand for financial services, thereby necessitating the development of the financial sector to cater to the evolving needs of the expanding economy.

Financial systems naturally impact the allocation of resources across place and time as they emerge to alleviate market friction (Merton & Bodie, 1995). For example, the introduction of banks that increase information acquisition about enterprises and managers would likely impact loan allocation. Similarly, financial arrangements that increase investors' confidence in enterprises' ability to repay them would most likely influence how people deploy their savings. Finally, the advent of liquid stock and bond markets means that consumers who are hesitant to give up control of their money for extended periods of time can swap claims to multi-year projects on an hourly basis. This might have a significant impact on how much and where people save. The purpose of this section is to describe models in which market frictions inspire the creation of various financial arrangements, as well as how the resulting financial contracts, markets, and intermediaries affect incentives and restrictions in ways that may influence economic growth.

Empirical Studies

The significance of macroeconomic variables in fostering the development of the financial sector stands as a pertinent area requiring substantial attention in Ghana. Quite recent research by Altaee and Al-Jafari (2019) corroborates these assertions, illustrating that financial advancement in Turkey not only spurs short-term growth via domestic savings but also cultivates a lasting and notable positive impact on the savings culture of Turkish citizens. Further supporting evidence comes from Ewetan, Ike, and Urhie (2015), who delineate an enduring relationship between macroeconomic indicators, the growth of the banking sector, and household savings in Nigeria. Conversely, the study by Horioka and Yin (2010; Ewetan et al., 2015) delved into financial development within the Organisation for Economic

Cooperation and Development (OECD) countries, highlighting its critical role in bolstering savings through a blend of low-interest rates, price stability, and consistent income patterns.

Interest rates and financial deepening

Enhanced savings rates and the cultivation of a stronger saving ethos serve as a remedy for fostering financial deepening. Consequently, the Central Bank employs the Policy Rate (PR) as a yardstick to indicate the cost of lending, which serves as the central impetus for the advancement of the financial sector (Kwakye, 2010). This principle is reflected within the financial system through interbank transactions on one front and the dynamics of the bank-customer relationship on the other.

The empirical findings presented by Hossin (2023) through cointegration and error correction models reveal a positive relationship between the deposit rate of interest and financial depth in Bangladesh. Another comprehensive analysis of household saving behaviour across sixteen European Union nations, leveraging balanced panel data spanning from 2008 to 2018 by Paleyo-Romero (2020) unearthed two unexpected revelations: firstly, under a low (negative) interest rate environment, there exists both a contractionary (substitution effect) and an expansionary effect on saving (income effect). While the substitution effect diminishes the motivation for private saving, the imperative to safeguard financial income precipitates a surge in private deposits. Financial sector stakeholders widely acknowledge that interest rates represent a crucial mechanism for maintaining economic equilibrium across all economies. Consequently, central banks wield prime rates as a tool to influence lending decisions within individual banks.

Azu and Amahi (2023) studied the influence of interest rate dynamics on financial deepening. The results underscore a positive significant relationship between interest rates and financial deepening, along with indicating that there is a long-term link between them. Furthermore, the study unveils a positive and significant impact of interest rate changes on Nigeria's financial development. These findings underscore the imperativeness for policymakers to implement strategies aimed at fostering economic growth, enhancing the liquidity reserve ratio, bolstering the domestic savings-to-GDP ratio, and instituting reforms to bolster the efficiency and advancement of the financial sector

According to Smith (2021), negative interest rates offer notable benefits to the economy by invigorating consumption and facilitating increased borrowing and lending activities by banks. Smith (2021) further contends that negative interest rates play a pivotal role in combating deflationary pressures and averting economic recessions. Moreover, Smith underscores that the imposition of low interest rates heightens the cost associated with hoarding capital, thereby fostering a propensity for expenditure. Hughes (2016) echoes a similar theoretical stance, positing that negative interest rates serve as a catalyst for economic vitality. The central bank accomplishes this by increasing lending to commercial banks at lower interest rates during recessions.

GDP and financial deepening

The study endeavours to establish a correlation between GDP per capita, representing economic growth, and the development of the financial sector in Ghana. Here, economic growth is defined by the growth rate of GDP per capita. Economists have contended that a more advanced financial sector plays a pivotal role in fostering economic growth (Zhuang et al., 2009). In the case of Sackey and Nkrumah (2012), a quarterly time series dataset spanning a decade (2000 – 2009) in Ghana was used. The study revealed a statistically significant positive correlation between Financial Sector Development and GDP per capita proxied as Economic Growth. This finding aligns with the outcomes observed in much of the reviewed literature. The recommendation stemming from this study emphasizes the importance for the government to foster competition within the financial sector and promote the development of microfinance institutions. Such initiatives are anticipated to enhance and broaden outreach, as well as improve access to credit at reduced costs. Ultimately, this strategy is expected to catalyse private sector development and investments, which serve as the primary drivers of growth and development. Ehigiamusoe, Guptan, and Narayanan (2021) conducted an investigation into the non-linear influence of real GDP per capita on financial development across a panel comprising 125 countries. Their findings indicate a positive impact of GDP on financial development across the entirety of the panel.

Inflation and Financial Deepening

Inflation inevitably leads to capital losses on all existing financial asset holdings. It is demonstrated that unless there is a substantial increase in monetary savings to counterbalance these inflation-induced capital losses, inflation will significantly diminish the extent of financial deepening achievable by a country. In a study by Santosh and Lakshmi (2018) both domestic and private savings which are panacea for financial development, were found to be negatively affected by inflation. Batayneh, Al Salamat, and Momani (2021) examined the short- and long-term effects of inflation on the development of the financial sector within the Jordanian economy spanning from 1993 to 2018. The empirical results affirmed a statistically significant negative impact of inflation on financial sector development, both in the short and long run.

Methods and Model Specification

Time series data spanning 1978 to 2019 were used. The variables incorporated in the analysis comprised financial deepening, deposit interest rates, inflation rates, and gross domestic product (per capita). The selection of these variables was informed by existing literature and the availability of data, guiding the choice of the investigation period. Data for the study were systematically gathered from sources

including the World Bank Development Indicators (WDI, 2022), Ghana Statistical Service, and reports from the Bank of Ghana.

Model Specification

This study makes use of an empirical strategy for data analysis for the purpose of achieving the objectives set. In analyzing and explaining financial sector development, it is important, to set up a model where financial sector development is made to depend on selected macroeconomic indicators as shown in the equation below:

$$FD_t = \alpha_0 + \sum_{i=1}^p B_i FD_{t-i} + \sum_{l=1}^q \eta_l EG_{t-l} + \sum_{m=1}^q \vartheta_m IR_{t-m} + \sum_{n=1}^q \phi_n INF_{t-n} + \omega_{it}$$

Where:

FD = Financial Deepening

IR = Deposit Interest Rate

EG = Economic Growth (Gross Domestic Product Per capita)

$B_1 \eta_l \vartheta_m \phi_n$, = Coefficient of each variable in the model

$\sum_{t=1}^q$ =Maximum Lag Length in each equation (q), whilst t= lag time for each variable

α = Constant

ω = Stochastic Error Term known as Impulse/Innovations/Shocks in the System

Estimation Technique

In the analysis of time series data, conducting preliminary tests on the variables holds significant importance to ensure the consistency of estimated parameters derived from the specified model. Initially, the study scrutinizes the stationarity properties of all variables under examination to safeguard against spurious results. Subsequently, the study investigates the existence of any long-term relationship among the variables utilizing the Autoregressive Distributed Lag (ARDL) Bounds testing approach. The ARDL estimation technique is then employed to estimate both short-term and long-term parameters.

Stationarity Test

Time series data commonly exhibit trends of either rising or falling, often necessitating an examination of the stationarity properties of the variables. Testing the order of integration of these variables proves invaluable in model specification, mitigating the risk of spurious relationships in the analysis. To address this, the study will employ the Augmented Dickey-Fuller and Philip Perron tests for the stationarity assessment

Augmented Dickey-Fuller (ADF) Test

The Augmented Dickey-Fuller (ADF) test represents a refined and enhanced iteration of the Dickey-Fuller test. While the Dickey-Fuller test operates under the assumption that error terms should be uncorrelated and follow a white noise pattern, the ADF test was developed to address scenarios where error terms may exhibit correlation. This adaptation stems from the recognition that many macroeconomic variables tend to be correlated and frequently exhibit trending behaviour (Asteriou & Hall, 2011). By introducing additional lagged terms of the dependent variable into the equation, the ADF test effectively mitigates issues related to autocorrelation.

Cointegration

The cointegration test serves to ascertain whether integrated variables exhibit cointegration, indicating a long-term relationship between the dependent and independent variables. Introduced by Johansen (1988), the Johansen maximum likelihood procedure within a vector autoregressive framework stands as a crucial tool for estimating models involving time series data. In this study, the Johansen cointegration approach is preferred as it facilitates the estimation of a dynamic error correction specification, offering insights into both short and long-run dynamics. Moreover, this approach is considered the most reliable and suitable for small sample properties. Johansen (1990) developed two likelihood ratio tests: the Trace Test and the Maximum Eigenvalue Test, both of which examine the presence of cointegrating vectors between financial development and macroeconomic variables.

Vector Error Correction Model

Granger (1987) demonstrated that if two variables exhibit cointegration, they can be represented using an error correction model (VECM). The VECM framework provides insights into both the long-run and short-run dynamics of the relationship between variables, incorporating a term known as the error correction term (ECT) into the estimated equation. This ECT captures the speed at which the variables adjust back to their long-run equilibrium following a short-run shock. By utilizing the estimated equation to derive the ECT (denoted as ECT_{t-1}), researchers can effectively model and analyse the interplay between short-term fluctuations and long-term equilibrium in the data.

Results and Discussion

Descriptive Statistics

The variability of the variables from their means is assessed through the standard deviation column in Table 1. Elevated standard errors indicate the presence of outliers, which may significantly impact the dataset. Furthermore, the spread of the data can be evaluated by examining the difference between the minimum and maximum values of the variables. A wider gap in a variable's range corresponds to a greater standard deviation for that variable. Table 1 provides a summary of descriptive statistics for the

variables used in the model, offering insights into statistics such as mean, median, standard deviation, minimum, and maximum values.

Table 1: Descriptive Statistics

Variable	Mean	Min	Max	Std Dev	Observe.
LNFD	1.966	0.432	2.765	0.753	42
LNEG	6.941	6.542	7.541	0.287	42
LNIR	2.742	2.184	3.577	0.381	42
LNINFL	3.061	1.964	4.811	0.716	42

Source: Authors' computation from WDI data

The analysis employs several key variables, each denoted by a corresponding abbreviation: LNFD represents the Natural Logarithm of Financial Deepening, LNEG stands for the Natural Logarithm of Economic Growth (EG) or Gross Domestic Product (GDP), LNIR signifies the Natural Logarithm of Deposit Interest Rate, and LNINFL denotes the Natural Logarithm of Annual Inflation. These abbreviations will be used throughout the discussion to refer to their respective variables.

The findings reveal that during the selected period, Financial Deepening (FD) averaged approximately 1.97 per cent, exhibiting a notable standard deviation of 0.75, suggesting considerable dispersion from the mean. This variability may be attributed to fluctuations in macro variables throughout the study period, indicative of macroeconomic instability.

Furthermore, the average Gross Domestic Product (GDP) rate proxied as Economic Growth stands at 6.94, with a deviation of 0.29 from the mean, resulting in minimum and maximum values of 6.54 and 7.54, respectively.

In contrast, T-bill rates, commonly used as a proxy for interest rates, demonstrate an average of 2.74 over the years, accompanied by a standard deviation of 0.38. The minimum and maximum returns for T-bill rates are recorded at 2.18 and 3.58, respectively.

Moreover, the average inflation rate, reflecting the general price trend over time, is approximately 3.1. However, it deviates from its mean by 0.72, with minimum and maximum values observed at 1.96 and 4.81, respectively.

Correlation Matrix

In most cases, the correlation coefficient serves as a metric for assessing the strength and direction of the relationship between paired independent variables or between paired dependent and independent variables. A negative coefficient signifies an inverse correlation, whereas a positive coefficient indicates a direct relationship. The magnitude of the correlation is elucidated by the absolute value of the

coefficient. As noted by Schindler and Cooper (2009), a correlation value of 0.8 or higher between paired independent variables suggests multicollinearity, which needs attention.

However, according to the findings presented in Table 2, there are no indications of collinearity issues among the paired explanatory variables. Furthermore, the correlation values are relatively low, affirming the absence of multicollinearity concerns, as observed in prior research by Bryman and Cramer (1997) and Adusei (2015).

Table 2: Correlation matrix

	LNFD	LNEG	LNIR	LNINFL
LNFD	1	0.1789	-0.1809	0.1015
LNEG	0.1789	1	-0.5997	-0.1468
LNIR	0.1809	-0.5997	1	0.0198
LNINFL	0.1015	-0.1468	0.0198	1

According to the findings presented in Table 2, Financial Deepening (FD) exhibits a significant positive relationship with EG, which serves as a proxy for GDP, as well as with the deposit interest rate (IR). This suggests that an increase in the deposit interest rate may favourably impact the efforts of most banks to deepen financial services. Conversely, FD demonstrates an inverse relationship with inflation rate (INFL).

Furthermore, the results indicate that GDP (EG) has a negative relationship with both the deposit interest rate (IR) and inflation (INFL). Notably, a positive relationship is established between inflation and the deposit interest rate.

The correlation analysis reveals that the independent variables are not highly correlated, indicating the absence of multicollinearity issues among them. According to Pallant (2011), a correlation exceeding 0.8 or 80% between independent variables suggests the presence of multicollinearity. However, the Pearson's correlation coefficients in Table 2 clearly demonstrate that multicollinearity is not a concern, as the correlation coefficients are all below 0.8

Augmented Dickey-Fuller Stationarity Test

The study assumed non-stationary macroeconomic data and conducted a pretest to ensure the presence of a stationary cointegration relationship among variables. Prior to conducting Ordinary Least Squares (OLS) estimations, the study examined the time series properties of the variables using unit root tests and assessed the presence of a stochastic trend in the adapted regression model. This methodological approach is guided by research insights such as those presented by Fosu, Bondzie, and Okyere (2014),

who employed the Augmented Dickey-Fuller (ADF) test and unit-root testing. Consistent with these methodologies, the ADF test was conducted, as illustrated in Tables 3 and 4. For consistency, all variables are converted to their log forms.

Table 3: Augmented Dickey-Fuller Stationarity Test (Constant)

LEVELS		FIRST DIFFERENCE				
Variable	ADF t-stats	Critical Value	ADF t-stats	Critical Value	Order of Intg.	Conclusion
LNFD	-1.592	-2.935	-8.047533	-3.606***	1	I (1)
LNIR	-1.113	-2.935	-7.345794	-3.606***	1	I (1)
LNEG	-1.796	-2.935	-6.403373	-3.607***	1	I (1)
LNINFL	-4.733	-2.601	-3.904208	-3.633***	1	I (1)

Notes: *** under first difference at 1% significant level.

The results from Tables 3 and 4 (constant, constant & trend respectively) indicate non-stationarity at the levels of all variables (I(0)), except for LNINFL. To ensure consistency in the analysis, all variables were transformed to their first differences. Consequently, at the first difference or integration of order one (I(1)), all variables became stationary, satisfying a necessary condition for the estimation of cointegration and error correction models.

Table 4: Augmented Dickey-Fuller Stationarity Test (Constant and Trend)

LEVELS		FIRST DIFFERENCE				
Variable	ADF t-stats	Critical Value	ADF t-stats	Critical Value	Order of Intg.	Conclusion
LNFS	-1.592	-2.935	-8.154	-4.205***	1	I (1)
LNIR	-1.113	-2.935	-7.315	-4.205***	1	I (1)
LNEG	-1.796	-2.935	-6.389	-4.205***	1	I (1)
LNINFL	-4.733	-2.601	-4.456	-4.243***	1	I (1)

Notes: *** critical values at first difference denote a 1% significant level. **Critical values at

The first difference denotes a 5% significant level incorporating the trend in the test, Table 4 gives details of the results.

Determination of the optimal lag length

Another crucial step before estimating the Johansen Cointegration Test is determining the optimal lag length. The results from running the test are presented in Table 5.

Table 5: Determination of the optimal lag length

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-548.1499	NA	23298912	28.31538	28.48600	28.37660
1	-449.3555	172.2569*	335602.3*	24.06951*	24.92262*	24.37560*
2	-441.2189	12.51797	516646.7	24.47276	26.00836	25.02372
3	-436.2013	6.690064	975181.3	25.03596	27.25405	25.83179

Source: Researcher’s elaborations using WDI data

The findings indicate that Lag 1 under AIC is the most suitable option for model analysis, as it demonstrates the lowest value among the asterisked alternatives. This suggests that in the event of shocks or disturbances in the system related to the regressors, it would take approximately one year for the response variable to react and adjust to the induced shocks by these explanatory variables (EG, IR & INFL). However, it's crucial to acknowledge that this study exclusively concentrates on short-run analysis due to the absence of evidence for any long-run relationships among the variables. Therefore, the VAR Model is employed for this purpose. Information regarding the inability of the Trace Test to establish long-run characteristics is outlined in Table 6.

Johansen Cointegration Test

Based on the results, Lag 1 under AIC is deemed appropriate for the model analysis as it exhibits the lowest value among the asterisked options. This implies that if there are shocks or disturbances in the system concerning the regressors, the response variable will take a year to react and adjust to the shocks induced by these explanatory variables (EG, IR & INFL). However, it's important to note that this research focuses solely on short-run analysis due to the lack of evidence for any long-run relationships among the variables. Hence, the VAR Model is utilized. Details regarding the failure of the Trace Test to establish long-run characteristics are provided in Table 6.

Table 6: Johansen unrestricted cointegration test (Trace & Max-Eigen Value)

Trace Test	Max-Eigen Value Test
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No. of CEs Hypothesized	Eigen Value	Trace Stats	5% Critical Value	Prob**	Max-Eigen Stats	5% Critical Value	Prob**
None	0.428	41.988	47.856	0.159	22.322	27.584	0.204
At most 1	0.277	19.666	29.797	0.446	12.957	21.132	0.456
At most 2	0.154	6.709	15.495	0.612	6.678	14.265	0.528
At most 3	0.000	0.030	3.841	0.862	0.030	3.841	0.862

Source: Researchers' Elaboration Based on Local Macroeconomic Data/WDI

As proposed by Engel and Granger (1969; cited in Dark, 2015), if the variables of interest exhibit cointegration at the first difference, it is essential to employ appropriate statistical techniques such as the Vector Autoregression (VAR) Model for short-term analysis and the Vector Error Correction Model (VECM) for long-term analysis. However, following the estimation of the Johansen Cointegration Test, the system failed to establish a cointegration equation among the variables. As a result, this study was restricted to estimating only the VAR Model, as outlined by Adeleye (2018).

Table 7: Simple vector auto-regression (VAR) analysis

Variable	Coeff	Stand. Err	t-statistic	Prob
FD (-1)	0.703691	0.17997	3.91015	0.0002
EG (-1)	1.485859	0.17334	8.57208	0.0000
IR (-1)	0.584512	0.69265	0.84387	0.0079
INFL (-1)	-0.005652	0.01386	-0.40774	0.6842
Constant	-0.014301	1.85886	-0.00769	0.9939
	FD	EG	IR	INFO
R-square				
0.925407		0.993821	0.800813	0.475678
Adj. R-sq	0.906158	0.992226	0.749411	0.340369
F-statistic	48.07392	623.2563	3.515490	15.57913

Log-likelihood	-70.30744	-188.4167	-172.1248	-103.6597
Akaike AIC	3.965372	9.870837	9.056241	5.632984
Schwarz SC	4.345370	10.25083	9.436239	6.012982
Durbin				
Watson	2.13350	1.70897	2.285036	2.083998

Source: Researchers' Elaboration Based on Local Macroeconomic Data/WDI

It is crucial to acknowledge that the VAR Model is estimated using Ordinary Least Squares (OLS). In this model, Financial Deepening (FD) acts as the dependent variable, while GDP proxied by economic growth (EG), Deposit Interest Rate (IR), and Annual Inflation Rate (INFL), serve as the regressor variables.

Analysis of past data reveals a significant increase in FD by approximately 70 per cent compared to previous performance (refer to Table 7). Among the regressor variables, EG exhibits a significant positive effect on FD. This suggests that EG in Ghana strongly influences financial sector development, aligning with the hypothesis put forth by Schumpeter (1911), which posited a linear relationship between financial development and economic growth (EG). This finding is consistent with the research conducted by King and Levine (1993), who famously tested this relationship two decades ago and found "a positive, significant, and partial correlation between the average annual rate of real per capita GDP growth and the average level of financial sector development" (refer to Table 7). Additionally, Goldsmith's (1969) paper was among the earliest studies to empirically demonstrate the existence of a positive relationship between financial development and GDP per capita proxied by EG. Narayanan et al (2021) corroborate their findings on the positive impact of GDP on financial development.

This study robustly establishes a significant positive correlation between interest rates and financial deepening. The findings presented here align with the conclusions drawn by Hossin (2023), whose analyses using cointegration and error correction models demonstrated a positive association between deposit interest rates and financial depth in Bangladesh. Consequently, the empirical evidence suggests that an increase in deposit interest rates leads to a deterioration in financial deepening, all other factors held constant. Furthermore, findings from Azu and Amahi (2023) further support these results, emphasizing the positive long-term relationship between interest rates and financial deepening.

Although inflation exerts a negative influence on financial deepening (FD) in this study, it remains a topic worthy of discussion. The interaction between inflation and financial development is a significant concern for FD in developing economies such as Ghana. The study of Santosh and Lakshmi (2018) explored the impact of inflation on financial deepening, it was revealed that both domestic and private savings, considered crucial for financial development, were negatively affected by inflation. This suggests that inflationary pressures may hinder the accumulation of domestic and private savings,

thereby impeding financial sector growth. Similarly, Batayneh et al.'s (2021) empirical findings supported a statistically significant negative impact of inflation on financial sector development, both in the short and long run. This highlights the detrimental effects of inflation on the functioning and growth of the financial sector in Jordan, underscoring the importance of addressing inflationary pressures to foster financial sector development.

Conclusion

This study enriches the existing literature by offering contemporary insights into the impact of macroeconomic indicators on financial deepening (FD) in Ghana. It aims to illuminate the collective influence of Gross Domestic Product (GDP), Deposit Interest Rate (IR), and Inflation (INFL) in driving positive transformations in financial development.

One of the primary findings of the study is the notable positive correlation between financial development and GDP. This highlights the significance of improving GDP performance to mitigate transaction costs within the financial system. Additionally, the results invalidate the notion of negative deposit rates as a strategy to stimulate consumption and investment during a recession.

Recommendations

Based on the study's findings, several recommendations can be proposed for various stakeholders, including publicly traded companies, policymakers, academics, and others. Firstly, the government should prioritize the implementation of sustainable macroeconomic policies aimed at fostering economic growth and creating a favourable environment for local industries and businesses. These policies should focus on enhancing the capacity utilization of local industries and businesses, thus increasing the demand for credit and improving the welfare of financial institutions.

Policymakers should closely monitor the behaviour of macroeconomic variables that influence Financial Sector Development (FSD). By understanding and responding to changes in these variables, policymakers can effectively stimulate economic growth and promote financial deepening. Given the statistically significant impact of the GDP growth rate on financial deepening, policymakers should prioritize initiatives aimed at accelerating economic growth. This may include investments in infrastructure, technology, and human capital development to stimulate economic activity and drive financial sector expansion.

Moreover, academics should conduct further research on macroeconomic variables and their impact on FSD to enhance our understanding of these complex relationships. Educational initiatives should also be undertaken to raise awareness among stakeholders about the importance of macroeconomic stability for

sustainable financial development.

By implementing these recommendations, stakeholders can contribute to the promotion of sustainable economic growth and the development of a robust financial sector that benefits all segments of society.

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