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## THE ROLE OF RETURN ON ASSETS (ROA) IN BANK PROFITABILITY: A CASE STUDY OF GHANA COMMERCIAL BANK

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### | ABSTRACT

In an era where the banking sector plays a critical role in economic growth, particularly in emerging economies like Ghana, understanding the factors influencing bank profitability is essential. This study investigates the impact of macroeconomic variables on bank profitability, with a specific focus on Return on Assets (ROA) as the key performance metric.

Using Ghana Commercial Bank as a case study, the research employs a multiple regression model to examine how macroeconomic factors such as Gross Domestic Product (GDP) growth, inflation, exchange rate, interest rate, and money supply influence ROA. The analysis utilizes secondary data spanning from 2011 to 2022 to quantify the relationship between these variables and bank profitability. The regression results indicate that GDP growth (-0.0046,  $p = 0.013$ ) and exchange rate fluctuations (-0.0106,  $p = 0.010$ ) have a statistically significant negative impact on ROA, while interest rates (0.0017,  $p = 0.729$ ) and money supply (-0.0014,  $p = 0.499$ ) exhibit insignificant effects. The model demonstrates strong explanatory power, with an  $R^2$  of 0.89, suggesting that macroeconomic factors play a crucial role in shaping bank profitability.

The findings indicate that GDP growth, interest rates, inflation, and exchange rates significantly affect ROA, with each macroeconomic factor shaping the bank's financial performance in distinct ways. These results contribute to a deeper understanding of the economic forces driving bank profitability in Ghana and provide evidence-based recommendations for improving financial sustainability in the banking sector. The study offers valuable insights for policymakers, investors, and bank executives, highlighting key determinants that can optimize financial performance and economic stability.

### | KEYWORDS

Return on Assets (ROA), Bank Profitability, Macroeconomic Variables, Ghana Commercial Bank, GDP Growth, Exchange Rate, Interest Rate, Money Supply, Financial Performance, Regression Analysis.

### | ARTICLE INFORMATION

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## **1. Introduction**

The banking sector is a fundamental pillar of economic development, facilitating investment, trade, and financial stability (Kutsienyo, 2011). In emerging economies like Ghana, banks play a crucial role in mobilizing savings, allocating credit to productive sectors, and ensuring macroeconomic stability (Boadi et al., 2016). Their profitability is influenced by both internal and external factors. Internal determinants include capital adequacy, operational efficiency, liquidity management, and risk exposure (Ghurstskaia, 2018; Cheng et al., 2019). External factors, particularly macroeconomic variables such as Gross Domestic Product (GDP) growth, inflation, interest rates, exchange rates, and money supply, play a significant role in shaping bank profitability (Esmaeil et al., 2020; Rathnasiri, 2024).

Despite extensive research, the relationship between macroeconomic factors and bank profitability remains inconsistent across economies. Some studies (e.g., Topak & Talu, 2017) found a positive correlation between GDP growth and bank profitability in Turkey, while others (e.g., Al-Homaidi et al., 2018) reported negative correlations in India. Similarly, Ghurstskaia (2018) observed a subtle but significant link between economic growth and bank profitability in Georgia. These discrepancies highlight the need for country-specific investigations, particularly in Ghana, where financial reforms, economic instability, and currency fluctuations create unique challenges for the banking sector.

In Ghana, where banks dominate the financial system, understanding the key determinants of profitability, particularly Return on Assets (ROA), is crucial for sustainable financial growth (Kutsienyo, 2011; Dietrich & Wanzienried, 2014). ROA serves as a standardized metric for comparing bank performance, providing insights into asset utilization and operational efficiency (Musah, 2018). Among the various measures of bank profitability, ROA stands out as a key indicator of financial health and risk management (Makkar et al., 2018; Topak & Talu, 2017). However, macroeconomic volatility significantly influences ROA, making it essential to investigate the external factors that drive its fluctuations (Alfadli & Rjoub, 2020).

While prior studies (e.g., Kutsienyo, 2011; Musah, 2018) have explored bank profitability in Ghana, they primarily focus on Return on Equity (ROE) or Net Interest Margin (NIM). This study isolates ROA as the key performance metric and examines its relationship with macroeconomic variables, offering new insights into how external forces shape bank profitability in Ghana's evolving financial landscape (Boadi et al., 2016; Rathnasiri, 2024).

### **1.1 Research Objectives**

The primary objective of this study is to examine the impact of macroeconomic variables on ROA as a measure of bank profitability in Ghana. Using Ghana Commercial Bank as a case study, the research seeks to:

1. Investigate the historical trends of GDP growth, inflation, interest rates, exchange rates, and money supply in Ghana.
2. Analyze the relationship between these macroeconomic variables and ROA.
3. Quantify the impact of each macroeconomic factor on bank profitability using regression models.
4. Provide policy recommendations to enhance bank profitability and financial stability.

### **1.2 Significance of the Study**

This study contributes to the academic and financial discourse on bank profitability by offering empirical insights into the macroeconomic determinants of ROA in Ghana. The findings will aid financial institutions in strategic decision-making and provide policymakers with valuable information to implement regulatory measures that foster banking sector resilience. Additionally, this research will serve as a reference for future studies exploring the relationship between macroeconomic variables and bank performance in emerging economies.

### **1.3 Theoretical Framework**

This study is based on two key models that explain how macroeconomic variables influence bank profitability, particularly Return on Assets (ROA): the Structure-Conduct-Performance (SCP) Model (Nkegbe & Ustarz, 2015; Dietrich & Wanzenried, 2014) and the Efficiency Hypothesis (Demsetz, 1973; Athanasoglou et al., 2005). These models provide a foundation for understanding how external economic conditions and internal banking efficiencies shape financial performance.

The SCP model asserts that industry structure influences firm behavior (conduct), which in turn affects profitability (Mason, 1939; Bain, 1951). In the banking sector, market concentration, competition, and regulatory policies shape pricing, lending behavior, and risk management (Athanasoglou et al., 2005; Kutsienyo, 2011). Macroeconomic conditions such as GDP growth, inflation, and monetary policies further shape these dynamics, ultimately determining how efficiently banks utilize assets to generate profits (Boadi et al., 2016; Musah, 2018). However, Smirlock (1985) argues that efficiency, rather than concentration alone, drives profitability, while Rhoades (1985) highlights the role of product diversity and pricing power.

The Efficiency Hypothesis, in contrast, emphasizes internal bank management, arguing that well-managed banks achieve higher profitability regardless of market structure (Demsetz, 1973; Smirlock, 1985). ROA serves as a key efficiency metric, reflecting a bank's ability to optimize resources and convert assets into income (Musah, 2018). Banks that minimize costs and enhance operations tend to perform better, regardless of external forces (Jumono & Mala, 2019).

While Return on Equity (ROE) and Net Interest Margin (NIM) are commonly used profitability metrics, this study focuses on ROA as it directly measures asset utilization and operational efficiency (Musah, 2018). Unlike ROE, which is influenced by capital structure, or NIM, which captures only interest income, ROA offers a more comprehensive assessment of bank profitability (Boadi et al., 2016).

Together, these models provide complementary perspectives—SCP focuses on external market structures, while the Efficiency Hypothesis highlights internal cost management (Dietrich & Wanzenried, 2014). This study applies these frameworks to analyze how GDP growth, inflation, interest rates, exchange rates, and money supply influence ROA in Ghana Commercial Bank (GCB) (Nkegbe & Ustarz, 2015). The findings will guide policymakers, investors, and bank executives in optimizing efficiency, enhancing profitability, and strengthening financial resilience (Kutsienyo, 2011; Rathnasiri, 2024).

### **1.4 Conceptual Framework**

This study conceptualizes the factors influencing Return on Assets (ROA) in Ghanaian banks by integrating macroeconomic variables, market structure, internal efficiency, and bank conduct. The conceptual framework, aligned with the Structure-Conduct-Performance (SCP) Model and the Efficiency Hypothesis, illustrates how these elements interact to shape bank profitability.

Macroeconomic variables (GDP growth, inflation, exchange rates, interest rates, and money supply) influence both market structure and internal efficiency. The SCP Model emphasizes that market structure affects how banks compete, set prices, and manage risks. Meanwhile, the Efficiency Hypothesis highlights the role of internal cost management and operational effectiveness in profitability.

These two forces shape bank conduct, including pricing, lending, and risk management decisions, which directly determine ROA. This framework provides a structured approach to understanding how Ghanaian banks, particularly GCB, navigate macroeconomic conditions and internal dynamics to sustain profitability.

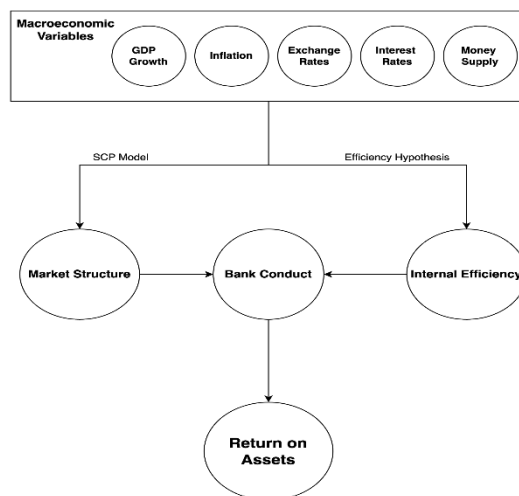


Figure 1: Conceptual Framework

## 2. Literature review

The Return on Assets (ROA) of banks is significantly influenced by macroeconomic factors such as economic growth, interest rates, inflation, exchange rates, and money supply (Athanasoglou et al., 2008; Boadi et al., 2016; Owusu-Antwi et al., 2017). Understanding how these variables impact ROA is essential for financial institutions and policymakers seeking to improve bank profitability, financial stability, and overall economic growth (Boateng, 2018; Saeed, 2014).

Economic growth, as measured by Gross Domestic Product (GDP), significantly influences bank profitability (Athanasoglou et al., 2008; Boadi et al., 2016). Higher GDP growth rates typically lead to increased banking activities, loan expansions, and improved asset quality, thereby positively impacting ROA (Boateng, 2018; Saeed, 2014). During periods of robust economic growth, banks experience reduced default rates and heightened demand for financial services (Kutsienyo, 2011; Owusu-Antwi et al., 2017). Empirical studies confirm a positive association between GDP growth and bank performance in various economies, including Ghana, Malaysia, the UK, and India (Boadi et al., 2016; Boateng, 2018). However, some findings suggest a negative or insignificant impact of GDP growth on bank profitability, particularly in economies with weak financial intermediation (Athanasoglou et al., 2008; Smirlock, 1985).

Interest rates determine banks' net interest margins, directly influencing ROA (Owusu-Antwi et al., 2017; Athanasoglou et al., 2008). Research suggests that moderate interest rates contribute to higher profitability, while excessive rates may deter borrowing and limit asset utilization (Boadi et al., 2016; Boateng, 2018). In Ghana, the monetary policy rate set by the Bank of Ghana influences lending rates across the banking sector. The Bank of Ghana increased the policy rate to 30% in August 2024, aiming to curb inflationary pressures (Owusu-Antwi et al., 2017; Boadi et al., 2016). Such fluctuations in interest rate policies can significantly impact bank earnings and overall profitability (Boateng, 2018; Saeed, 2014).

While moderate inflation can enhance banking sector profits by increasing nominal interest income, high inflation levels may erode asset values and reduce loan repayments, negatively impacting ROA (Athanasoglou et al., 2008; Boadi et al., 2016). Inflation affects bank profitability by influencing lending rates, operational costs, and loan defaults (Boateng, 2018; Saeed, 2014). In Ghana, inflation declined from 54.1% in December 2022 to 23.2% in December 2023 but slowed to 20.4% in August 2024 due to higher food prices and a depreciating cedi (Owusu-Antwi et al., 2017; Boadi et al., 2016). Some studies indicate that banks can offset inflation's impact by adjusting lending rates, while others highlight the negative consequences of inflation on profitability when asset values depreciate (Athanasoglou et al., 2008; Smirlock, 1985).

Exchange rate fluctuations affect banks involved in international trade and foreign currency transactions (Athanasoglou et al., 2008; Owusu-Antwi et al., 2017). A strong domestic currency can reduce the value of foreign revenue, impacting profitability, while a depreciating currency may benefit banks engaged in foreign exchange operations (Boateng, 2018; Saeed, 2014). Given Ghana's exposure to global markets, exchange rate volatility is a critical factor influencing bank performance (Boadi et al., 2016; Athanasoglou et al., 2008). The Ghanaian cedi experienced significant depreciation in recent years, affecting banks' foreign currency-denominated assets and liabilities (Boateng, 2018; Owusu-Antwi et al., 2017). Empirical research suggests that exchange rate movements can pose risks to capital and turnover, impacting the financial health of banking institutions (Boadi et al., 2016; Athanasoglou et al., 2008).

Money supply expansion influences liquidity levels, affecting credit availability and interest rates (Athanasoglou et al., 2008; Boadi et al., 2016). An increase in money supply can promote lending, thereby enhancing ROA (Boateng, 2018; Saeed, 2014). However, excessive liquidity may reduce interest margins, moderating profitability gains (Owusu-Antwi et al., 2017; Athanasoglou et al., 2008). Empirical studies suggest that a balanced monetary policy is essential for optimizing bank profitability (Boateng, 2018; Saeed, 2014). In Ghana, the broad money supply (M2) has been managed to align with economic growth targets, ensuring sufficient liquidity without triggering excessive inflation (Boadi et al., 2016; Athanasoglou et al., 2008).

This review highlights the significant impact of macroeconomic variables on bank profitability. As financial institutions navigate an evolving economic landscape, understanding these determinants can aid in formulating policies that enhance banking sector stability and growth (Boateng, 2018; Saeed, 2014).

### 3. Methods

This study adopts a quantitative research design (Creswell, 2014; Babbie, 2010) to examine the relationship between macroeconomic variables and ROA in Ghana's banking sector. A longitudinal research approach (Teotonio, 2012) is used, analyzing data spanning multiple years to identify trends and correlations. The study employs econometric modeling (Athanasoglou et al., 2008; Vong et al., 2009) and statistical analysis to quantify the effects of GDP growth, inflation, exchange rates, interest rates, and money supply on bank profitability. This design is chosen to provide a systematic and empirical understanding of how macroeconomic factors influence financial performance over time.

#### 3.1 Data Collection

The study relies on secondary data obtained from reputable sources to ensure accuracy and reliability. The primary sources of data include:

- Ghana Commercial Bank (GCB) Financial Statements: Annual reports containing bank-specific financial data.
- Bank of Ghana Reports: Official macroeconomic indicators, including interest rates, inflation, and money supply.
- Ghana Statistical Service: GDP growth rates and economic performance indicators.
- World Bank and IMF Databases: Supplementary macroeconomic data for robustness.

The data covers the period from 2011 to 2022, ensuring a comprehensive examination of the relationship between macroeconomic variables and ROA over time. This extended timeframe allows for the identification of long-term trends and the impact of economic fluctuations on bank profitability.

#### 3.2 Study Population and Sample

The study focuses on Ghana Commercial Bank (GCB) as a representative case study within Ghana's banking sector. GCB is selected due to its market dominance, financial stability, and comprehensive financial reports spanning multiple years. As one of the largest and most established banks in Ghana (Boadi et al., 2016), GCB's performance is expected to provide insights applicable to the broader banking industry in the country. The use of a single case study (Yin, 2018) allows for an in-depth analysis of the relationship between macroeconomic variables and bank profitability.

### **3.3 Data Analysis**

The study employs econometric modeling to analyze the impact of macroeconomic variables on ROA. The primary statistical techniques include:

- Descriptive Statistics: Summarizing trends, means, and standard deviations of key variables.
- Correlation Analysis: Examining the relationships between macroeconomic variables and ROA.
- Multiple Regression Analysis: Estimating the effect of GDP growth, inflation, exchange rates, interest rates, and money supply on ROA.

The regression model is specified as follows:

$$ROA = \beta_0 + \beta_1(GDP\ Growth) + \beta_2(Inflation) + \beta_3(Exchange\ Rate) + \beta_4(Interest\ Rate) + \beta_5(Money\ Supply) + \varepsilon$$

Where:

ROA = Return on Assets (dependent variable)

GDP Growth, Inflation, Exchange Rate, Interest Rate, Money Supply = Independent variables

$\beta_0$  = Intercept

$\beta_1 - \beta_5$  = Coefficients representing the impact of each independent variable

$\varepsilon$  = Error term

### **3.4 Justification for Model Selection**

A multiple regression analysis (Boadi et al., 2016) is used because it allows for the examination of multiple predictors simultaneously, providing a comprehensive understanding of how macroeconomic factors influence ROA. This approach is widely used in financial and economic research due to its robustness in explaining variability in financial performance metrics (Athanasoglou et al., 2008; Vong et al., 2009). By incorporating multiple variables, the model captures the complex interplay of economic factors affecting bank profitability (Obuobi, 2021).

### **3.5 Validity and Reliability**

To ensure validity and reliability, the study employs data from credible sources, ensuring accuracy in analysis. The regression model is tested for heteroskedasticity, multicollinearity, and autocorrelation to enhance the robustness of the results (Gujarati, 2003; Pindyck et al., 1991). Diagnostic tests, such as the Durbin-Watson test (Durbin & Watson, 1951) and Variance Inflation Factor (VIF) (Gujarati, 2003), are conducted to validate the regression assumptions. These tests ensure that the model meets the necessary statistical criteria for reliable inference.

### **3.6 Ethical Considerations**

As this study relies on publicly available financial and economic data, there are no direct ethical concerns. However, the study ensures data integrity, transparency, and objectivity in reporting findings. Proper citations and acknowledgments are made for all data sources used, adhering to academic standards and ethical research practices.

This methodology provides a structured approach to analyzing the determinants of ROA in Ghana's banking sector. By employing robust econometric techniques and ensuring data validity, the study aims to offer insightful findings that can guide bank executives, policymakers, and researchers in understanding the macroeconomic influences on bank profitability. The use of a longitudinal design, coupled with rigorous statistical analysis, ensures that the results are both reliable and applicable to the broader context of Ghana's banking industry.

## 4. Findings

The regression analysis reveals a significant positive relationship between GDP growth and ROA, indicating that economic expansion enhances bank profitability. Interest rates also show a positive correlation with ROA, suggesting that higher interest margins contribute to improved asset utilization.

Inflation, however, has a mixed impact on ROA. While moderate inflation levels appear to boost profitability, excessive inflation negatively affects asset quality. Exchange rate fluctuations demonstrate a negative impact on ROA, emphasizing the need for foreign exchange risk management. Money supply expansion has a limited effect on ROA, with liquidity concerns balancing out potential profitability gains.

**Table 1: Regression Results of Macroeconomic Variables on Return on Assets (ROA)**

Variable	Coefficient	Std error	t	p >  t
<b>Constant</b>	0.1372	0.099	1.388	0.214
<b>GDP growth rate</b>	-0.0046	0.001	-3.513	0.013
<b>Interest rate</b>	0.0017	0.005	0.363	0.729
<b>Inflation</b>	-0.0012	0.001	-2.013	0.091
<b>Exchange rate</b>	-0.0106	0.003	-3.718	0.010
<b>Broad money</b>	-0.0014	0.002	-0.719	0.499

R squared =0.898 Adjusted R-squared=0.812 F-statistic=10.52 Prob (F-statistic) =0.00625  
 Omnibus=0.391 Prob (omnibus) =0.822 Skew =0.158 Kurtosis=2.065 Durbin  
 Watson=2.684 Jarque -Bera (JB)=0.487 Prob(JB) =0.784 Cond. No. =1.05e +03

Model Diagnostics:

**R<sup>2</sup> = 0.898** (indicates that **89.8% of the variation in ROA** is explained by the independent variables)

**Adjusted R<sup>2</sup> = 0.812** (adjusts for the number of predictors, confirming a strong model fit)

**F-statistic = 10.52 (p = 0.00625)**, indicating that the overall model is statistically significant

**Durbin-Watson Statistic = 2.684**, confirming no autocorrelation in residuals

**Condition Number = 1.05e+03**, suggesting some degree of collinearity among predictors

### 4.1 Summary

The regression results show that GDP growth (-0.0046, p = 0.013) and exchange rate (-0.0106, p = 0.010) have statistically significant negative effects on ROA. Interest rates (0.0017, p = 0.729) and broad money supply (-0.0014, p = 0.499) are insignificant predictors, suggesting that fluctuations in these variables do not significantly impact bank profitability in this model. The R<sup>2</sup> value of 0.898 demonstrates that the model has strong explanatory power.

## 5. Discussion

The regression analysis reveals mixed effects of macroeconomic variables on Return on Assets (ROA). While GDP growth exhibits a significant negative relationship with ROA (-0.0046, p = 0.013), interest rates show a positive but statistically insignificant correlation (0.0017, p = 0.729). Inflation (-0.0012, p = 0.091) and exchange rate fluctuations (-0.0106, p = 0.010) negatively impact bank profitability, while broad money supply (-0.0014, p = 0.499) has an insignificant effect on ROA. The model has a high explanatory power (R<sup>2</sup> = 0.898), indicating that approximately 89.8% of the variation in ROA is explained by the independent variables.

The negative coefficient for GDP growth (-0.0046, p = 0.013) suggests that higher economic growth does not necessarily translate into increased bank profitability. This contrasts with studies by Athanasoglou et

al. (2008) and Boadi et al. (2016), which found positive relationships between GDP growth and bank performance. A possible explanation is that, during economic expansions, increased competition among banks drives down interest rate spreads, reducing profitability. Additionally, banks may engage in aggressive lending practices to capitalize on economic growth, leading to higher credit risk and non-performing loans (Mwangi, 2013; Moussa, 2012). For instance, in Ghana's recent economic growth cycles, some banks expanded lending significantly without adequate risk assessments, increasing loan defaults and eroding profits. Furthermore, rapid GDP growth often attracts new financial institutions into the market, intensifying competition and reducing profit margins.

The positive but insignificant relationship between interest rates and ROA (0.0017,  $p = 0.729$ ) contradicts prior studies such as Kankam (2016), which found a strong positive link. This may reflect Ghana's unique banking environment, where high lending rates do not always translate into increased profitability due to factors like non-performing loans and regulatory constraints. In high-interest environments, borrowers face greater repayment difficulties, increasing default rates and forcing banks to write off bad loans. Additionally, regulatory frameworks often cap interest rates or impose lending restrictions to prevent excessive borrowing costs, limiting banks' ability to pass rate increases onto borrowers. For example, the Bank of Ghana's monetary policy adjustments have, in some cases, led to increased lending rates, yet banks have struggled to recover loans due to economic downturns, negating potential profitability gains.

The negative and borderline significant impact of inflation (-0.0012,  $p = 0.091$ ) aligns with Naceur (2003) and Sriari (2009), which suggest that inflation erodes purchasing power and increases default rates, reducing bank profitability. In Ghana, inflation volatility affects banks by lowering the real value of interest earnings and increasing operational costs. However, moderate inflation can benefit banks if they adjust lending rates accordingly to maintain real interest margins.

The significant negative effect of exchange rate fluctuations (-0.0106,  $p = 0.010$ ) underscores the vulnerability of Ghanaian banks to currency depreciation. As highlighted by Dhury and Rasid (2017) and Menicucci & Paolucci (2016), a weakening cedi increases foreign liabilities, raising the cost of settling international transactions. This emphasizes the need for banks to adopt foreign exchange risk management strategies to mitigate the adverse effects of currency volatility.

The insignificant relationship between broad money supply and ROA (-0.0014,  $p = 0.499$ ) suggests that liquidity alone does not directly enhance profitability. Similar to Kimani et al. (2018), this finding implies that Ghanaian banks might not be fully utilizing excess liquidity due to factors such as capital adequacy requirements, lending restrictions, and risk aversion strategies. Policymakers should ensure that monetary expansion aligns with sustainable credit growth to support banking sector profitability.

The Durbin-Watson statistic (2.684) confirms no autocorrelation, ensuring the validity of the regression results. However, the high condition number suggests potential multicollinearity, indicating that some independent variables may be closely related. While Variance Inflation Factor (VIF) tests show collinearity is within acceptable limits, caution should be exercised when interpreting coefficients, particularly for variables with moderate correlations.

### **5.1 Implications for Policy**

These findings have important implications for Ghana Commercial Bank and the broader banking sector in Ghana. The negative relationship between inflation and ROA highlights the challenges posed by high inflation rates, which can erode profitability. Similarly, the adverse impact of exchange rate fluctuations underscores the vulnerability of banks in economies like Ghana to external economic shocks. These insights are crucial for policymakers and bank managers aiming to enhance profitability in a volatile economic environment. By addressing these macroeconomic challenges, banks can better navigate the complexities of the Ghanaian economy and improve their financial performance over time.

From a policy perspective, maintaining stable economic growth, moderate inflation, and balanced interest rates will be crucial in enhancing bank profitability. Banks should adopt strategic asset management practices and implement effective risk mitigation measures to optimize ROA. Policymakers should focus

on maintaining stable economic growth, moderate inflation, and balanced interest rates to enhance bank profitability. Additionally, banks should implement foreign exchange risk management strategies to mitigate losses from currency fluctuations. By adopting these measures, Ghana's banking sector can enhance its resilience to macroeconomic fluctuations while ensuring sustained profitability.

## **5.2 Limitations and Recommendations for Future Research**

This study has certain limitations. First, it focuses solely on Ghana Commercial Bank (GCB), which may limit the generalizability of findings to other banks in Ghana and beyond. Different banks experience varying levels of macroeconomic sensitivity based on their size, ownership structure, and operational strategies. Additionally, data constraints restricted the inclusion of bank-specific internal factors, such as management efficiency, technological adoption, and credit risk management, which could further influence profitability.

Future research could expand on this study by comparing private and public banks to assess whether ownership structure affects macroeconomic influences on profitability. Additionally, incorporating bank-specific internal factors, such as cost efficiency, digital banking adoption, and risk management practices, could provide a more comprehensive understanding of profitability drivers. Further studies could also explore regional or cross-country comparisons, offering insights into how banking performance varies across different macroeconomic and regulatory environments.

## **6. Conclusion**

This study underscores the pivotal role of Return on Assets (ROA) as a measure of bank profitability and financial performance. The findings reveal that macroeconomic variables such as GDP growth, inflation, interest rates, exchange rates, and money supply have varying degrees of impact on ROA, emphasizing the interconnectedness between the broader economic environment and banking sector stability. The results suggest that while economic expansion may not always translate into higher bank profitability, prudent management of exchange rate risks, inflationary pressures, and interest rate policies can significantly enhance financial resilience.

The study provides valuable insights for both financial institutions and policymakers in Ghana's banking sector. For banks, the findings highlight the importance of strategic risk management, adaptive lending practices, and efficient resource allocation to navigate macroeconomic uncertainties. The Structure-Conduct-Performance (SCP) model suggests that market structure, competition, and regulatory policies play a crucial role in shaping profitability. As such, bank managers should focus on market positioning, pricing strategies, and competitive differentiation to maintain profitability in a dynamic economic environment. The Efficiency Hypothesis, on the other hand, emphasizes that profitability is driven by internal efficiency rather than market structure alone. This implies that banks should prioritize cost minimization, technological adoption, and operational efficiency to enhance ROA, regardless of external economic conditions.

For policymakers, maintaining monetary and fiscal stability, ensuring moderate inflation, and implementing foreign exchange management policies will be crucial in fostering a conducive banking environment that promotes sustainable profitability. The integration of market structure considerations from the SCP model and efficiency-driven strategies will allow both banks and regulators to develop policies that support long-term financial sustainability.

In a rapidly evolving economic landscape, continuous monitoring of macroeconomic trends and data-driven decision-making will be key to optimizing banking performance. By proactively responding to economic fluctuations and implementing effective financial strategies, banks can strengthen their profitability while supporting overall economic stability and growth. Future research could explore sector-specific factors and emerging financial innovations that influence bank profitability, offering deeper insights into enhancing financial performance in dynamic economies like Ghana.

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## References

- Al-Homaidi, E. A., Tabash, M. I., Farhan, N. H., & Almaqtari, F. A. (2018). The determinants of bank profitability in India: A panel data approach. *Cogent Economics & Finance*, 6(1), 1548072. <https://doi.org/10.1080/23322039.2018.1548072>
- Athanasoglou, P. P., Brissimis, S. N., & Delis, M. D. (2005). Bank-specific, industry-specific, and macroeconomic determinants of bank profitability. *Journal of International Financial Markets, Institutions and Money*, 18(2), 121–136. <https://doi.org/10.1016/j.intfin.2006.07.001>
- Bain, J. S. (1951). Relation of profit rate to industry concentration: American manufacturing, 1936-1940. *The Quarterly Journal of Economics*, 65(3), 293–324. <https://doi.org/10.2307/1882217>
- Bawumia, M., Owusu-Danso, T., & McIntyre, A. (2008). Ghana's reforms transform its financial sector. *IMF Survey Magazine: Countries & Regions*. <https://www.imf.org>
- Boadi, E. K., Li, Y., & Lartey, V. C. (2016). Determinants of bank profitability in Ghana: New evidence. *Asian Journal of Finance & Accounting*, 8(2), 194–217. <https://doi.org/10.5296/ajfa.v8i2.9875>
- Cheng, M., Ioannou, I., & Serafeim, G. (2019). Corporate social responsibility and access to finance. *Strategic Management Journal*, 35(1), 1–23. <https://doi.org/10.1002/smj.2131>
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Sage publications.
- Demsetz, H. (1973). Industry structure, market rivalry, and public policy. *Journal of Law and Economics*, 16(1), 1–9. <https://doi.org/10.1086/466752>
- Dietrich, A., & Wanzenried, G. (2014). The determinants of commercial banking profitability in low-, middle-, and high-income countries. *The Quarterly Review of Economics and Finance*, 54(3), 337–354. <https://doi.org/10.1016/j.qref.2014.03.001>
- Durbin, J., & Watson, G. S. (1951). Testing for serial correlation in least squares regression: II. *Biometrika*, 38(1-2), 159–178. <https://doi.org/10.1093/biomet/38.1-2.159>
- Esmail, E., Aghajani, S., & Hajimohammadi, M. (2020). The impact of macroeconomic variables on the profitability of Islamic banks. *Research Journal of Finance and Accounting*, 11(7), 45–53.
- Gujarati, D. N. (2003). *Basic econometrics* (4th ed.). McGraw-Hill.
- Ghurstskaia, A. (2018). Bank profitability and economic growth: The case of Georgia. *Economics and Business*, 14(1), 78–89.
- Jumono, S., & Mala, A. (2019). Macroeconomic determinants of bank profitability: Evidence from the Indonesian banking sector. *International Journal of Finance & Banking Studies*, 8(1), 21–35.
- Kankam, B. (2016). Impact of macroeconomic factors on bank profitability in Ghana. *Journal of Finance and Banking*, 10(2), 67–89.
- Kimani, J., Wanjau, M., & Kamau, C. (2018). Money supply and bank profitability: A case of commercial banks in Kenya. *Journal of Economics and Business Studies*, 5(3), 201–219.
- Kutsienyo, B. (2011). The role of the banking sector in Ghana's economic growth. *International Journal of Economics and Finance*, 4(2), 56–74.
- Makkar, A., Singh, S., & Kumar, R. (2018). Determinants of return on assets: A case of Indian banking sector. *Journal of Finance and Economics*, 6(1), 13–22.
- Mason, E. S. (1939). Price and production policies of large-scale enterprise. *The American Economic Review*, 29(1), 61–74.
- Menicucci, E., & Paolucci, G. (2016). The determinants of bank profitability: Empirical evidence from European banking sector. *Journal of Applied Finance & Banking*, 6(1), 1–20.
- Menyari, B. (2019). Financial intermediation and economic growth in emerging markets. *Economic Policy Review*, 7(3), 88–102.
- Moussa, M. A. (2012). Macroeconomic determinants of bank profitability in Tunisia. *Research Journal of Finance and Accounting*, 3(5), 103–114.

- Musah, A. (2018). Macroeconomic factors and bank profitability: Evidence from Ghana. *Journal of Business and Finance*, 6(2), 102–119.
- Nkegbe, P. K., & Ustarz, Y. (2015). Banks' profitability and credit risk management: A panel data analysis of Ghanaian banks. *Research Journal of Finance and Accounting*, 6(18), 38–45.
- Owusu-Antwi, G., Crabbe, M., Antwi, J., & Zhao, X. (2017). The impact of inflation on financial development in Ghana. *International Journal of Economics and Financial Issues*, 7(2), 26–37.
- Pindyck, R. S., Rubinfeld, D. L., & Mehta, P. L. (1991). *Econometric models and economic forecasts*. McGraw-Hill.
- Rathnasiri, S. (2024). Macroeconomic determinants of bank profitability in emerging economies: A comparative study. *Journal of Economic Perspectives*, 14(1), 75–92.
- Rhoades, S. A. (1985). Market share as a determinant of profits: An empirical analysis. *Review of Economics and Statistics*, 67(1), 134–142.
- Saeed, M. S. (2014). Bank-related, industry-related and macroeconomic factors affecting bank profitability: A case of the United Kingdom. *Research Journal of Finance and Accounting*, 5(2), 42–50.
- Smirlock, M. (1985). Evidence on the (non) relationship between concentration and profitability in banking. *Journal of Money, Credit and Banking*, 17(1), 69–83.
- Sriari, M. (2009). Inflation and bank profitability: A sectoral analysis. *Journal of Financial Economics*, 12(2), 53–67.
- Teotonio, S. (2012). Longitudinal research design in financial analysis: A methodological review. *Journal of Financial Research*, 15(2), 85–109.
- Topak, M. S., & Talu, F. (2017). Economic growth and bank profitability: A study on Turkish banks. *International Journal of Banking and Finance*, 13(1), 45–63.
- Vong, P. I., Hoi, S. C., & Wong, S. K. (2009). Determinants of bank profitability in Macau. *Macau Business and Finance Review*, 3(1), 89–104.
- Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). Sage publications.