Impact of GDP Growth on the Financial Performance of Leading Indian Banks: A Panel Data Analysis

Arti

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Abstract

The financial performances of banking sector contribute towards the economic growth of a country. Gross domestic product is one of the variables to measure the economic growth of country. The author has investigated the affect of financial performance of Indian banks on GDP of India. The author's research is limited to five banks of Indian banking sector based on market capitalization. Five banks selected for the research include Kotak Mahindra Bank, State Bank of India, Axis Bank, HDFC Bank, ICICI Bank. Financial performance was measured through Earning per share and profit after tax. The data for the last ten years is used to examine the impact of financial performance on banking sector in context of top five banks selected for the research A panel analysis is conducted to evaluate this impact. The result of the study proves there is insignificant relationship between financial performance and GDP. However, there is a high correlation between Earning per share and profit after tax.

Keywords: Profit after tax, Earning per share; Panel data; Banks; Financial performance

Introduction

The relationship between Gross Domestic Product (GDP) and financial performance is a pivotal area of study, revealing how national economic growth influences the health and efficiency of financial institutions. A robust GDP fosters increased banking activity, enhances asset quality, and reduces default risks, thereby boosting bank profitability and stability. This relationship underscores the significance of economic policies and growth dynamics in shaping the financial landscape, highlighting the symbiotic relationship between macroeconomic conditions and the vitality of financial entities. Researchers aims to provide insights into how GDP growth influences the efficiency and profitability of public sector banks (PSBs), highlighting its significance for sustainable financial performance. The banking sector requires constant updating and regulation, especially during crisis periods, to mitigate risks and enhance performance. Regulatory differences between countries can lead to regulatory arbitrage, impacting banks' profitability and operations. Studies show that GDP growth affects banks' financial performance, as higher GDP often reduces household borrowing, negatively impacting profitability. Conversely, budget deficits can boost bank performance by increasing household borrowing and loan sales.

Bank plays an important role in the economic development of a country through various means. One of the traditional means through which bank contribute is credit creation, serving as a primary source of external financing for economic actors. The interrelationship between different macroeconomic variables, particularly in ASEAN countries, has demonstrated that GDP growth is vital for enhancing the financial stability and profitability of banks. Increased economic activity boosts demand for banking services and improves financial metrics. By serving as financial intermediaries, banks contribute to sustainable economic growth through effective resource allocation and risk mitigation.

The Ukrainian economy, increasingly shaped by integration and globalization, shows that organizational competence is crucial for national economic development. Effective organizational activity and international cooperation are prerequisites for economic growth, increased welfare, and reduced public expenses. This study investigates the competence of Ukrainian organizations, examining their impact on GDP and their ability to achieve market success amid Eurointegration and challenging conditions.

Customer-perceived metrics, along with innovation-related actions like R&D spending, are linked to financial performance. The American Customer Satisfaction Index (ACSI) and Perceived Firm Innovation (PFI) are crucial in understanding customer perceptions and their impact on firm performance. Studies demonstrate that PFI influences financial outcomes, emphasizing the need for comprehensive measures to capture the full scope of service innovation and its effect on GDP and overall financial performance.

Assessing financial performance is vital for stakeholders, and accurate accounting information is essential for this evaluation. The Romanian textile sector, a significant contributor to GDP and exports, offers a valuable case study. Over the past 20 years, this industry has faced transformation and adaptation challenges but maintains a competitive edge due to low-cost labor. The relationship between GDP and financial performance is critical, as economic growth directly influences corporate outcomes. This article explores how macroeconomic indicators, such as GDP growth, impact corporate financial performance, particularly during times of economic uncertainty.

Review of Literature

The interrelationship between GDP growth and the financial performance of banking institutions has been extensively studied, revealing a consistent positive correlation. (Alattass,2023) highlights that higher GDP levels enhance bank profitability and stability by fostering increased banking activity and credit growth, improving asset quality, and reducing default risks. Similarly, (Arintoko et al., 2024) and (Barak & Sharma, 2023) note that GDP growth reduces non-performing loans (NPLs), improving credit quality and emphasizing the importance of economic stability in maintaining the financial health of banks. However, (Buyukoglu et al., 2023) suggests that higher GDP can reduce households' credit utilization, potentially negatively impacting banks' profitability.(Dinca et al., 2023) corroborates the positive relationship between GDP and financial performance, particularly in the banking and health sectors, while also noting that rising GDP can reduce household borrowing, affecting bank profitability.

In the construction industry, (Gruzina et al., 2024) points out the significant influence of GDP on financial performance, with high-performance indicators in organizations contributing substantially to GDP.(Gustafsson & Ghanbarpour, 2024) emphasizes the importance of firm activities and stakeholder perceptions, noting that metrics such as customer satisfaction and innovation significantly impact financial success, though capturing service innovation's broad scope remains challenging. This links with (Hada et al., 2019) findings in the textile sector, which underscore the relevance of accurate financial information in decision-making, demonstrating the interconnectedness between GDP contribution and financial stability. (Havenga et al., 2023) highlights operational inefficiencies, such as those seen in Transnet, that hinder GDP growth and financial performance, suggesting the need for reforms to enhance overall economic efficiency.

Examining the broader economic impacts, (Ingham, 2022) supports the notion that GDP growth affects corporate financial outcomes, including return on assets and market price, especially during economic uncertainty.(Jarbou et al., 2024) explores the positive correlation between GDP growth and bank performance in the MENA region, offering strategic insights for banks and policymakers. Both(Kelmendi, 2024) and (Pervetica & Ahmeti, 2024) emphasize GDP's crucial role in shaping bank profitability and stability, with higher GDP levels leading to improved monetary indicators such as return on assets (ROA) and return on equity (ROE) and. This is further illustrated by (Kwashie et

al., 2022), who notes a positive impact of GDP on Ghanaian commercial banks, correlating higher GDP levels with increased profitability and efficiency.

Focusing on sector-specific impacts, (Le, 2024) and (Masoumi et al., 2019) document the positive influence of GDP growth on financial performance, highlighting its role in fostering business growth and profitability in sectors like pharmaceuticals.(Msomi, 2023) identifies GDP as a significant determinant of African non-life insurance businesses' financial performance, associating higher GDP with improved business conditions and profitability. However, (Muhammad & Yusoff, 2023) presents a contrasting view, revealing that GDP negatively impacts the performance of Islamic banks in Africa, indicating that broader economic conditions can detrimentally affect their profitability.

In terms of sustainable development and corporate strategies, (Muhammed et al., 2024) discusses the positive influence of foreign direct investment, GDP per capita, and trade openness on sustainable development. (Prenaj et al., 2023) highlights the mixed effects of various economic indicators on the financial performance of commercial banks including non-performing loans and inflation negatively impacting bank performance, while real GDP growth and unemployment rates positively correlate with profitability measures. (Puci et al., 2023) underscores the significance of real interest rates, GDP growth and, inflation in influencing financial performance, supported by findings from the Albanian banking sector.

(Riehl et al., 2022) and (Sayed & Nefzi, 2024) focus on the role of GDP in enhancing investment in green technologies and intellectual capital, respectively, contributing to improved financial outcomes. This aligns with(Singh & Milan, 2023) examination of public sector banks in India, revealing significant relationships between performance determinants like capital adequacy and asset quality and their connection to GDP growth during 2009-2019.(Terstena et al., 2023) and (Wawrosz & Traksel, 2023) provide insights into the favourable corelationship between business profitability and growth in GDP, while questioning the effectiveness of negative interest rate policies on economic growth.

Lastly, (Yilmaz & Samour, 2024 and (Yuan et al., 2022) contribute to the understanding of how corporate cash holdings and macroeconomic variables influence profitability in non-financial firms and private commercial banks, respectively.(Zandi et al., 2023) reveals that GDP growth plays a substantial role in shaping the capital structures of energy firms, suggesting that macroeconomic stability and growth provides favorable environment for the firms to adjust their capital structures effectively.

Following hypotheses are proposed for the study:

H1: GDP is significantly correlated with financial performance of top 5 Indian banks

H2: GDP is significantly correlated with financial performance of top 5 Indian banks as measure by Profit after Tax

H3: GDP is significantly correlated with financial performance of top 5 Indian banks as measured by earning per share

To analyse the above relationships following econometric equations are formed:

$$FP_{it} = \beta_0 + \beta_1 GDP_{it} + \varepsilon_{it}$$

Research Methodology

This study conducted an exploratory, descriptive and inferential study. This study has analysed panel data with the help correlation and econometric models.

2.1 Sources of ESG Data

The study has included top 05 banks declared by Forbes on 31st March 2024 which includes HDFC Banks, ICICI Banks, State Bank of India, Kodak Mahindra bank, and Axis Banks. These banks are selected on the basis of market capitalization. Banks includes both private and public sector banks.

Financial performance data for the banks are taken from screener. GDP growth rate for all the five banks are taken from World Bank database. Data is taken for all five banks from 2014 to 2023.

2.2 Independent and dependent Variables

The study used Profit after tax which is measured in crore and earning per share which is measured in percentage for analysing the bank' annual financial performance for the period 2014-2023. Financial performance is considered as dependent variable for the study.

Gross domestic product growth rate for the period 2014 to 2023 is taken as independent variable

Results and Discussion

3.1 Descriptive Analysis

The descriptive statistics present the mean value, skewness and kurtosis of all the data of different variables. Table no. represents the mean value of earning per share, GDP growth rate and Profit after tax are 29.06140, 5.960000 and 14230.88. Skewness value of all variables are 0.753412, -2.141575 and 1.472481 which are <3 which shows normal skewness and platykurtic. Standard deviation is lower than the mean value which indicates that data are homogenous and the score deviation is low.

	EPS	GDP_GRO...	PAT
Mean	29.06140	5.960000	14230.88
Median	24.30000	7.200000	11076.00
Maximum	82.44000	9.700000	57750.00
Minimum	-5.110000	-5.800000	-3749.000
Std. Dev.	19.71526	4.210095	12425.87
Skewness	0.753412	-2.141575	1.472481
Kurtosis	3.162124	6.431131	5.168036
Jarque-Bera	4.785002	62.74589	27.86079
Probability	0.091401	0.000000	0.000001
Sum	1453.070	298.0000	711544.0
Sum Sq. Dev.	19045.88	868.5200	7.57E+09
Observations	50	50	50

Table1

The Jarque-Bera Statistic(4.785002) of earning per share with probability value >0.05(0.091401) shows that data is normalized. The Jarque-Bera test for GDP growthrate is 62.74589 with probability value(0.000000)<0.05 shows that GDP growth rate significantly deviates from normal distribution. The Jarque-Beta statistics 27.86079 with probability

value 0.000001(<0.05) indicates that the PAT significantly deviates from a normal distribution. Log value of all variables are taken for analysis purpose to normalise all the value in the data or to make them stationary

3.2 Correlations between GDP growth rate and financial performance

The results of correlations between Gross domestic product, earning per share and profit after tax are presented in table no 2 .The results idicate that correlation between earning per share and GDP growth rate is 0.093744 which is negligible correlation. The correlation between GDP growth rate and profit after tax is 0.078574, which is negligible correlation. The relationship of earning per share with profit after tax is 0.714933, which shows strong positive linear correlation between the variables.

Correlation Probability	EPS	PAT	GDP_GRO...
EPS	1.000000		

PAT	0.714933	1.000000	
	0.0000	-----	
GDP_GROWTH_R...	0.093744	0.078574	1.000000
	0.5173	0.5876	-----

Table2

3.3. Estimation of model

Unit root test was applied to check the stationary of data. Dependent and independent variables are converted in log form to make the data stationary. Log value of EPS is stationary at first difference. Log value of GDP is stationary at 2nd difference. Log value of PAT dependent variable is stationary at 2nd difference. One variable is stationary at first difference and two variables are stationary at 2nd difference. Therefore we are using Panel Autoregressive distributed lag model for evaluating the model.

$$FP_{it} = \beta_0 + \beta_1 GDP_{it} + \varepsilon_{it}$$

We have applied Panel Least square method for estimating the model. We have applied Breusch-Pagan test to check the significance level of Panel Least square. Breusch-Pagan test value is more than 0.05, therefore we have estimated model with the Panel Least Square method.

3.4 Estimation of impact of GDP on Earning per share

Variable	EPS	PAT
Independent Variables		
GDP	**2.934671(0.9226)**	**-9.752946(0.7650)**
Adj R-Squared	**-0.020631**	**-0.018915**

Prob(F-statistic)	0.922612	0.090379
Breusch-Pagan	0.0986	0.7453
Model	Panel Least Square	Panel Least Square

Table3

Table3 estimate change in earning per share due to change in GDP. The high p-value (0.9226) indicates that this effect is not statistically significant (p>0.05). The low value of adjusted R square (-0.020631) suggests that GDP does not explain the variability in earning per share. The F-statistic (0.922612) indicates that the overall regression model is not statistically significant. GDP does not significantly explain the variation in earning per share. The Breusch-Pagan (0.0986) indicates that the assumption of constant variance in errors is likely met.

3.5 Estimation of impact of GDP on Profit after tax

Table3 displays the findings of the regression model to check the impact of GDP on profit after tax. A high p-value (0.07650) indicates that the effect is not statistically significant. The negative adjusted R-squared (-0.018915) indicates that GDP does not explain the variability in profit after tax. F-statistic (0.090379) indicates that at the 0.05 level of significance, the regression model as a whole is not significant..

We thus rejected our null hypothesis that GDP affects the financial performance of banks measured in terms of profit after tax and earnings per share.

Future Scope

The results of the study conclude that GDP does not significantly explain the variation in either dependent variable. There are the other variables which can be included in the study to check the variations in profit after tax and earnings per share. There are other variables such as sustainability can be used to explain the variation in earning per share and GDP. This study is limited to five banks. Sample size is small, universal applicability of study is less.

Conclusion

The research intended to investigate the affect of Gross Domestic Product on the economic health of the top five Indian banks by market capitalization:, SBI Bank,Axis Bank, ICICI Bank, Kodak Mahindra Bank and HDFC Bank. The financial performance was measured using Earnings per Share (EPS) and Profit after Tax (PAT) over a period of ten years. Despite the thorough analysis, including the use of panel data and various statistical tests, the analysis discovered no significant connection between financial performance and GDP growth of these banks. Descriptive statistics showed the mean values for EPS, GDP growth rate, and PAT, along with skewness and kurtosis values indicating normal skewness and platykurtic distribution for these variables. The Jarque-Bera test results suggested that while EPS data is normalized, GDP growth rate and PAT significantly deviate from a normal distribution. Correlation analysis revealed a strong positive linear correlation between EPS and PAT, but negligible correlation between GDP growth rate and both EPS and PAT.

Regression analysis further supported these findings, showing high p-values and negative adjusted R-squared values, indicating that GDP does not explain the variability in EPS or PAT. The F-statistics also confirmed that the regression models were not statistically significant. Additionally, the Breusch-Pagan test indicated that the assumption of constant variance in errors was likely met. Based on these results, the null hypothesis that GDP affects the financial performance of banks, as measured by EPS and PAT, was rejected. The study concludes that GDP growth does not

significantly explain variations in the financial performance of the top five Indian banks. For future research, it is recommended to explore other variables that could affect the financial success of the banks, such as sustainability factors. Additionally, expanding the sample size beyond five banks could improve the adaptability of the results. The current study's limitations, including the small sample size and the focus on only a few banks, suggest that further research is needed to comprehensively understand the factors that affect the banking industry's financial health.

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