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Financial Inclusion And Profitability In Indian Public Sector Banks: An Empirical Analysis (2017-2023)

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ABSTRACT

This study examines the impact of financial inclusion on the profitability of Indian public sector banks from 2017 to 2023. Financial inclusion, characterized by expanded access to banking services such as digital payments and financial accounts, is increasingly recognized as a critical driver of economic growth and financial stability. However, its direct influence on bank profitability remains less explored. This paper investigates this relationship using the Financial Inclusion Index (FII) as a key independent variable, with Return on Equity (ROE) and Return on Assets (ROA) as the primary profitability indicators.

Data were sourced from the Reserve Bank of India and the CEIC database, covering a six-year period. Correlation and regression analyses reveal a moderately positive association between FII and both ROE and ROA, indicating that higher financial inclusion can enhance profitability. However, this growth is accompanied by challenges, including elevated non-performing loans (NPLs) and increased transaction costs when extending services to previously unbanked populations.

The findings highlight the need for robust risk management and supportive regulatory frameworks to maximize the profitability benefits of financial inclusion while mitigating associated risks. The study contributes to the broader discourse on sustainable banking practices and provides actionable insights for policymakers and financial institutions seeking to balance financial inclusion with profitability.

Keywords: Financial Inclusion, Public Sector Banks, Profitability, Return on Equity (ROE), Return on Assets (ROA)

INTRODUCTION

Financial inclusion is an emerging concept in the banking industry such that the level of its presence can affect the overall profitability and performance of financial institutions. The relationship between the two is complex with both positive and negative implications. According to existing research, improvements in this industry, such as increased account ownership and digital payment services, can stabilize the banking industry (**Mbutor & Uba, 2013**). This is especially true when considering vulnerable populations, including youth, low-skilled workers, and the rural poor. By providing these individuals with access to formal financial services, banks get an entry point in reaching new customer segments to increase their products and provide tech support services that indirectly positively impact overall credit quality and profitability (**Hakimi et al., 2022**). Further, higher financial inclusion may contribute to increased deposit mobilization, better asset quality and risk management which can result in improved bank performance as well (**Hashfi et al., 2020**). The results of bringing financial inclusion are not limited to uplifting the social and economic strata of the marginalized. Financial inclusion has substantial implications for profitability in the banking industry. (**Jiang et al., 2022**) The logic is clear, more access to financial service lead to opportunity for banks to tap on new markets, a more diverse customer base and ultimately additional revenue lines. (**Sethi & Acharya, 2018**) . But this growth also demands caution: new entrants can struggle to assess and manage those previously unbanked customers, or face the high costs of broader financial infrastructure (**Durner & Shetret, 2015**).

The study tries to look into the impact of financial inclusion upon bank profitability. While several studies have examined the social benefits of financial inclusion, this study takes a different perspective and examines how it impacts bank performance (**Wang & Luo, 2022**) However, the relationship between financial inclusion and bank profitability is complex. According to some studies, Financial inclusion could induce higher non-performing loans and transactions costs to lenders, especially from lower income or small scale borrowers. (**Mengistu & Saiz, 2018**) This is due to information asymmetry, managerial efficiency failures, and deficiencies in capital-to-asset ratios, which increase the cost for banks to enter the financial inclusion process. This study examines several aspects of financial inclusion, including the financial inclusion index (FII) along with its sub-indices (i.e., access, usage, and quality). It also investigates the effect of these factors on core profit indicators in the banking sector, including profitability parameters, viz, Return on Equity (ROE), Return on Assets (ROA) etc. Consequently, this work adds to the literature on how financial inclusion initiatives can be made sustainable by unpacking these relationships (**Sarma & Pais, 2011**). The study will suggest how well or poorly banks are able to handle the twin goals of furthering financial inclusion while keeping their bottom lines stable or improving. At the end of this research, policymakers and financial institutions can offer better suggestions to expand banking services that will not lead banks in trouble.

LITERATURE REVIEW

(Cull et al., 2021) reveals how financial services allow people to save money, borrow, and invest more profitably as a pathway from poverty. These studies have frequently considered financial inclusion from a developmental perspective, with much less focus on what it meant for the finance sector. As financial inclusion efforts increased worldwide, some researchers adapted to the changing perspective and began investigating how reaching out to populations that are less served by banks increases or decreases bank profits (Danisman & Tarazi, 2020). Existing literature has shown that a direct relationship of financial inclusion on improved profitability of banks, since the rise in the customer base as well as innovative revenue streams can drive increased bank profits. (Sarma & Pais, 2011) suggested banks that have utilized innovative delivery channels, such as mobile banking and agent banking, to profit from previously underserved markets reported higher returns on assets as well as equity. Similarly, these studies suggest the prospect of using financial inclusion as a successful growth strategy when conventional banking penetration is low, especially in emerging economies. However, the literature also identifies concerns regarding the potential benefits of financial inclusion if they are about profitability. Challenges grow for delivery in rural and lower-income areas, where costs rise due to investments needed in technology, infrastructure, etc. (Sarma & Pais, 2011) Moreover, lending to unbanked or underbanked populations is risky because they may have no credit history and/or irregular income sources, which has the potential to increase default rates for financial lenders, resulting in a greater number of Non-Performing Loans (NPLs). (Chahadah et al., 2020) studies by (Vo et al., 2021) highlighted that banks must have a risk management strategy that fits the unique features of financially excluded populations to offset these challenges. (Mbutor & Uba, 2013) proposed an association of financial inclusion with bank profitability context-specific as it differs from one region or banking environment to another. For example, research in Sub-Saharan Africa has revealed that financial inclusion increases banks' profitability significantly more nations with substantial levels of financial development compare with minimal provider environments within the zone. (Jimoh, 2019) The study suggested that the fulfilment of financial inclusion objectives in higher profitability could be conditional on the broader economic and regulatory context within which banks are functioning. Theoretical frameworks, such as inclusive finance theory, also deepen our understanding of this linkage. (Lal, 2018) The basic premise of inclusive finance theory is that by incorporating under-served sections into the formal financial system, banks can serve a social objective and simultaneously reach new market segments so as enable them to improve their performance on the bottom line. (Nguyen & Du, 2022) suggested that the theory is consistent with the empirical evidences study demonstrate a positive association of financial inclusion with bank profitability when complemented by supportive regulatory policies and technological advancements. (Chahadah et al., 2020) The authors analyzed the financial inclusion has a significant impact on bank profitability in both poor and high income countries. We find that bank performance—both return on assets (ROA) and equity (ROE)—is positively related to the number of ATMs. (Van et al., 2021). Financial inclusion is driven largely by the banking sector. Due to their scale, resources and know-how, banks are best placed to offer the necessary platform

that can be used by unbanked people migrate into formal economy. (Mbutor & Uba, 2013) Financial inclusion programs are centered on creating and providing a variety of Financial goods, like saving accounts, insurance options, credit opportunities and payment services, that fit the low-income population. (Celerier & Tak, 2021) However, the pursuit of financial inclusion asks questions — rightly so or wrongly, only time will tell – about how that drives bank profitability as well. For some challenger banks, expanding services to underserved populations will be very expensive, as well-designed infrastructure and technology with proper risk management in-house are required (Chen et al., 2023). Financial inclusion offsets China banks' profitability gains from digital transformation and banks, and can improve their performance by simply capitalizing on technological innovations in digitalization, risk management, and expanding financial literacy programs. The improvement of profitability of Chinese banks through financial inclusion has been driven, to a large extent, by digital transformation. To join the ranks in a rapidly changing technological landscape, banks must aspire to greater performance by combining digital services with risk-management strategies and financial education initiatives. (Ozili et al., 2023) Financial inclusion has a detrimental impact on bank profitability in sub-Saharan Africa following the global financial crisis. Policy measures should align financial inclusion strategies with efforts to enhance the banking sector profitability. Financial inclusion, facilitated by financial technology, enhances bank profitability by expanding services to underserved groups and improving return on assets, equity, and earnings per share (Mengistu & Saiz, 2018).

The literature demonstrates a generally positive association between financial inclusion and bank profitability, particularly in emerging markets. Expanding access to financial services generates new revenue sources while increasing operational costs and hazards. Overall, financial inclusion has the potential to improve bank performance when combined with appropriate risk management and technology.

OBJECTIVE

The specific objective of the study is aimed at analysing how financial inclusion impacts the profitability of public sector banks of India.

HYPOTHESIS

On the basis of the above objective, the following null hypothesis has been framed.

Hypothesis 1: **H₀**: The financial inclusion index has no substantial impact on the return on equity (ROE) of India's public sector banks.

Hypothesis 2: **H₀**: The financial inclusion index has no substantial impact on the return on equity (ROA) of India's public sector banks.

METHODOLOGY

This study uses a quantitative approach to determine financial inclusion effect upon the profitability of public sector banks in India through secondary data published in relevant reports. The Financial Inclusion Index was used to gauge financial inclusion, data have been acquired by the report published by the RBI. To measure profitability, ROE and ROA were used, and the data were acquired from the CEIC database. For the analysis, data from 2017 to 2023 were used, correlation and regression were used to report the relevant finding.

ANALYSIS AND INTERPRETATION

The Shapiro-Wilk test for the FINANCIAL INCLUSION INDEX showed a high p-value of (0.9482), this above the usual significance threshold of 0.05. The p-value for the ROE Shapiro-Wilk test was 0.7800, which was likewise higher than 0.05. The p-value of 0.8323 in the Shapiro-Wilk test for ROA indicated that the result was higher than 0.05. Considering these findings, we conclude that all three variables (FINANCIAL INDEX, ROE, and ROA) appear to be approximately normally distributed. The Shapiro-Wilk test p-values are all well above the usual 0.05 level of significance.

Correlational Analysis

Financial Inclusion Index and ROE:

Pearson Correlation: 0.768

This indicates a moderate positive correlation between Roe and FII. As the FII increases, Roe tends to increase as well.

Significance (Sig. 2-tailed): 0.044

At the 5% level, the association is statistically significant, as indicated by the p-value of less than 0.05.

Financial Inclusion Index and ROA:

Pearson Correlation: 0.773

This indicates a moderate positive correlation between the FII and ROA. As the FII increases, ROA tends to increase as well.

Significance (Sig. 2-tailed): 0.042

At the 5% level, the association is statistically significant, as indicated by the p-value of less than 0.05.

REGRESSION ANALYSIS

FINANCIAL INCLUSION INDEX AND RETURN ON EQUITY

A summary of the research model's analysis is shown in Table 7. As a result, the R Square value of .590 shows that the study model, which consists of Financial Inclusion Index as independent variables, accounts for 59% of the dependent variable's variance. There is a small discrepancy between the R Square value and the adjusted R Square value in this case, which is .508 (50.8%).

Table 1

Model Summary				
Model	R	R ²	Adjusted R ²	Std. Error of Estimate
1	.768	.590	.508	7.0885277

The statistical significance of the result is shown in Table 2. The current model achieves statistical significance (Sig = .044, or $P < .05$) at 0.05 level of significance. Rejecting null hypothesis, which asserts that model has explanatory power.

Table 2 Statistical Significance

ANOVA		
Model	F	Sig.
1	7.190	.044

Table 3 Evaluation of each independent variable

Variables	Coefficients (B)	Standardized Betas	Sig.
Constant	-69.900		.043
FINANCIAL INCLUSION INDEX	1.331	.768	.044

The regression equation can be expressed as:

$$ROE = -69.900 + 1.331 \times \text{Financial Inclusion Index}$$

This equation can be used to predict ROE based on the Financial Inclusion Index.

FINANCIAL INCLUSION INDEX AND RETURN ON ASSET

A summary of the research model's analysis is shown in Table 4. As a result, the R Square value of .516 shows that the study model, which consists of Financial Inclusion Index as independent variables, accounts for 51.6% of the dependent variable's variance. There is a small discrepancy between the R Square value and the adjusted R Square value in this case, which is .516 (51.6%).

Table 4

Model Summary				
Model	R	R ²	Adjusted R ²	Std. Error of Estimate
1	.773	.597	.516	.420237

The statistical significance of the result is shown in Table 5. The current model achieves statistical significance (Sig = .044, or $P < .05$) at 0.05 level of significance. Rejecting null hypothesis, which asserts that the model has explanatory power.

Table 5 Statistical Significance

ANOVA		
Model	F	Sig.
1	7.403	.042

Table 6 Evaluation of each independent variable

Variables	Coefficients (B)	Standardized Betas	Sig.
Constant	-4.178		.042
FINANCIAL INCLUSION INDEX	0.080	.773	.042

The regression equation can be expressed as:

$$\text{ROA} = -4.178 + .080 \times \text{Financial Inclusion Index}$$

This equation can be used to predict ROA based on the Financial Inclusion Index.

HYPOTHESIS	Results
Hypothesis 1: H_0 : The financial inclusion index has no substantial impact on the return on equity (ROE) of India's public sector banks.	Rejected
Hypothesis 2: H_0 : The financial inclusion index has no substantial impact on the return on equity (ROA) of India's public sector banks.	Rejected

CONCLUSION

This study analyses the dynamic interaction between financial inclusion and bank profitability with a special focus on public sector banks in India. Financial inclusion, with more account ownership and digital payment services, can help create bank profitability by strengthening the banking system and expanding access to new customer segments. There is a moderately positive association, as the key profitability measures, namely ROE and ROA, at 5% level of statistical significance, there exists a significant positive correlation between them and the financial inclusion index. At the same time, other challenges still arise in serving populations that have been unable to open bank accounts regardless of where they live. These include widening information asymmetries and increasing NPLs. Regression analysis results indicate that changes in ROE and ROA can be significantly explained by the financial inclusion index.

This means that an increase (or decrease) in financial services access triggers an improvement (deterioration) in bank returns, showing significance from the aggregate to the disaggregated level. The results support the necessity for comprehensive risk practices and an established technological infrastructure to effectively cater to new customer segments. Policymakers and financial institutions should be encouraged to make responsible advances in banking services by taping consumer power while maintaining a fine balance with the economic objectives of profitability vs. inclusionism. This means that the positive effects of financial inclusion are amplified and potential negative aspects are minimized.

To reap the full benefits of financial inclusion and mitigate potential risks related thereto, banks, as well as government bodies overseeing this field, are recommended to adopt a multipronged approach. By creating bespoke financial products for the unbanked, investing in extensive financial literacy programs to utilize digital banking solutions with low overhead costs and more, there is a lot of scope to enhance

access. Furthermore, banks need to update their risk assessment models in order for them to properly assess customers with limited financial history and potentially work along fintech companies that might bring creative solutions targeting the underserved. Adopting a less aggressive and more iterative approach would allow the program to learn and adapt based on early results. Policymakers must also set up the right regulatory framework for them not only to safeguard bank stability but also to promote financial inclusion. For instance, having strong technology systems in place may be a prerequisite, but entering new customer bases is not a cakewalk simply because tighter risk management is needed. Using these focal points, banks can strive to strike a fine line between broadening financial inclusion and remaining profitable, thus creating a fairer and more stable financial ecosystem for the banking sector as well as dispossessed sections.

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