Financial Inclusion and Bank Performance in India

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Abstract*:* This research aims to identify the influence of FI on banks' traditional profitability measures and stock returns after the introduction of the PMJDY initiative. The study uses data from 25 banks from 2014 to 2021. The research uses factor analysis and regression models. The findings uncovered a connection between FI and bank profitability. There is indeed a positive correlation between FI, RoE, and RoA; nevertheless, this correlation does not meet the criteria for statistical significance. Even though this is the case, FI and NiM are negatively correlated with one another, and this link is statistically significant. One could say that the relationship between financial institutions and the stock market was unfavorable and inconsequential. This study examines the influence of PMJDY FI variables on the performance of the Indian banking industry following the implementation of the PMJDY scheme. This study addresses a gap in the existing finance literature by creating a FI index. The index evaluates various parameters, such as the number of branches, ATMs, beneficiary accounts, deposits, and debit card issuance.
Keywords: Financial Inclusion, PMJDY, RoE, RoA, Financial Intermediation

1. Introduction

Financial institutions significantly influence people's development. Economic expansion and wise resource use are the two main activities that might bring about social change. The unbanked people can be integrated into the traditional financial system to accomplish the objectives above. Financial inclusion (FI) is integrated into the financial system. [1] defines FI as accessing and using formal financial services. [2] defined FI as every economic actor accessing formal financial services. The authors also recognized FI as a significant impediment to resource allocation and economic growth. Several countries have started

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taking action to remove the barriers. To broaden the usage of banking options, the Indian government launched the Pradhan Mantri Jan Dhan Yojana (PMJDY) FI initiative. According to the PMJDY progress report, there are now 311.8 million beneficiaries using bank branches in rural/semi-urban centers, 154.7 million using bank branches in metropolitan metro centers, and 259.2 million rural-urban females beneficiaries who have been brought into the mainstream of FI. The information provided clarifies that the number of beneficiaries included in the financial stream and the amount put into the bank account is increasing. FI has grown in many developing nations, enhancing financial performance and bank profitability. Access to financial services for the unbanked will improve bank performance and boost the stock market.
[3] stated that despite the apparent benefits of FI, some academics have expressed concern that it hurts the banking industry. The negative relation represents the potential risk related to the bank's performance. [3] claimed that the banking industry serves a low-income population segment that may be in danger. The risk entails higher information and transaction costs because there is less collateral and credit history. Higher costs increased risk and the bank's performance potential. Similar results were confirmed by [4, 5]. Between 2015 and 2017, [5] found no correlation between FI and bank performance. Typically, RoE and RoA ratios are used in empirical studies to determine a bank's profitability, gauge the performance of the banking sector, and predict market structure trends. Developments such as market capitalization and trading volume in the stock market can affect profitability. Several bank-specific variables may affect profitability. However, the impact of FI on bank profitability needs to be clarified. Limited research shows FI's effects on bank stocks in India's capital market. In India's capital market, a limited amount of research illustrates the effects of FI on bank stocks.

This study investigates how FI influences the profitability of banks and the returns on stocks traded on the capital market. The significance of economic growth, FI, and stock market performance is also considered. According to [6] countries that have a banking system that is well-organized and operates efficiently are more likely to have a robust stock market. Using PMJDY variables, [7] measured financial independence, although they compared the efficiency of banks before and after the implementation of PMJDY. In their 2017 study, [8] investigated FI's influence on the stock market index.

On the other hand, they did not consider the factors that determine PMJDY. There are two ways in which this research contributes. In the first place, the article utilizes PMJDY FI determinants to investigate the impact that FI had on the performance of the banking sector in India after the PMJDY plan was introduced. Within the field of finance literature, the gap has to be filled. Furthermore, in some investigations, the representation of FI was done with a single measure. To bridge the gap, we developed the FI index proposed by [9] as a substitute for actual FI data considered from an Indian point of view. The five factors we utilized to evaluate FI were the total number of branches, automated teller machines, beneficiary accounts, deposits, and debit card issuance.

It was found that the FI initiative of the PMJDY scheme had a mixed impact on the profitability of banks, as indicated by the research findings. There is indeed a positive correlation between FI, RoE, and RoA; nevertheless, this correlation does not meet the criteria for statistical significance. Even though this is the case, FI and NiM are negatively correlated with one another, and this link is statistically significant. One could say that the relationship between financial institutions and the stock market was unfavorable and inconsequential.

The remaining papers are structured as follows: Section 2 covers a literature review on financial intermediation theory, FI, the creation of the FI index, banks' performance, and the capital market's effect on banks' performance. Part 3 is research methodology, whereas section 4 is data analysis. Section 5 is the conclusion and discussion. Section 6 is the future study.

2. Review of literature

2.1. Theoretical Review

This paper reviewed the Financial Intermediation Theory to assess the relationship between FI, banks' performance, and stock market returns [10]. Financial intermediaries – banks - gather information from surplus and deficit units that would not otherwise be readily available in the financial market. They emphasized how financial institutions facilitate the movement of financial resources from unit to unit in an economy. However, the movement of resources from surplus to deficit creates the problem of information asymmetry [11]. Therefore, to reduce the issue of information asymmetry, the money has to be channeled to the lower-income group for growth and development. Opening bank branches and providing loans and other financial services to the unbanked population will lead to economic development and growth [12]. [13] contend that banks, through their intermediation operation, play crucial roles in efficiently allocating resources for productive activities. Banks facilitate the movement of funds from individuals or entities with excess capital to those who lack funds but have profitable business opportunities. According to [14], banks are crucial in offering financial services to impoverished individuals, particularly in emerging nations. [15] further, financial intermediaries can distribute limited resources in unpredictable settings across different locations and periods. Banks depend on the gathered information to evaluate and categorize their new clients, particularly those economically disadvantaged, who provide financial services like loans [16].
Nevertheless, due to information asymmetry and significant transaction costs, financial intermediaries refrain from providing loans to individuals who lack collateral (as demonstrated by [17]). [18] explained that banks accept deposits and provide loans. Therefore, even individuals who are considered impoverished and assumed to lack literacy skills can save, borrow, and make payments [19]. In contrast, [20] have pointed out that more financial service providers entering the market and more bank branches opening up can help the poor get various financial goods that meet their specific needs. The supply of

high-quality financial services and the depth of market penetration are affected by the costs banks incur while engaging in market intermediation.

2.2. Empirical Review and Hypotheses Development

[21] found that percentage changes in bank share prices reflect profit rather than cost efficiencies. This gives a different viewpoint on share price changes, as owners prefer dividends from profits over income. According to [22], a bank's profitability depends on its qualities, financial market structure, and macroeconomic factors. All variables are significant except bank profit concentration. Domestic and foreign banks' impacts and profit relationships differ. [23] analyzed 13 Athens Exchange banks. Profitability and stock market performance are not associated. [24] studied bank profitability. Variables of bank, industry, and macroeconomics (inflation) were considered. ROA and NIM measure bank profitability.

Higher cost efficiency reduces non-traditional activity volume and boosts Chinese bank profitability. [25] found that bank profitability is not the only factor determining stock price. Multiple linear regression showed that Asset Quality, Management Quality, and Earnings affect bank stock price. [26] studied if FI helps economic development. FI predicts economic growth, according to empirical evidence. FI affects financial products positively. Per-capita GDP positively correlates with financial development; hence, improving FI requires economic growth. Stock market indicators are modest determinants of FI. [27] shows asset quality and spending management can hurt bank performance. Also, bank size does not affect bank profitability. [28] investigated the growth of the economy and stock market in Nigeria. They discovered that the rise of Nigeria's stock market had a favorable impact on both short- and long-term economic growth. Granger causality research invalidated the possibility of growth of the Nigerian stock market. The development of Nigeria's economy is unrelated to the stock exchange. [29] compared FI and stability indicators in 19 countries. Only high-income countries benefit from FI. They found that lower and upper-middle-income countries must boost financial services to improve FI.

[30] studied if access to credit enhances Jordanian banks' performance. They found that adding new banking services boosted bank profits. [31] studied the impact of bank performance on Indonesia's top ten banks' stock markets. In this study, the bank share price was reliant on NIM. Regression results reveal that bank profitability affects the share price. The capital adequacy ratio (CAR) improves the relationship between profitability and share price for government banks. CAR cannot mitigate private bank earnings on the share price. [9] studied FI's impact on African bank profitability indicators. The FI index (FINDEX) and bank profitability are positively correlated. FI drives bank profitability in Africa. [32] studied the impact of liquidity, profitability, and firm size on Indonesian private bank stock returns. Liquidity boosts bank stock returns and profitability, but not much. The company's size positively affects bank stock returns. [33] said that even in developed economies, FI is needed. They found that branch expansion boosts bank profitability, while branch reduction

lowers Japanese bank profitability. Loan accounts or ATMs do not influence profitability. Bank size is a crucial profitability factor among bank-specific variables. [12] show a missing link between banks and capital markets in Nigeria's long-term financial intermediation. [3] studied FI in emerging Asian markets. In all four scenarios/models, FI improves bank performance in emerging Asian markets. [34] studied the profitability ratios of nine Indonesian banks' stock prices. ROA, ROE, NIM, EPS, and net income affect the stock price.

3. Research Methodology

3.1. Data

Secondary data comprise the entire study. We used panel data from 25 banks from 2014 to 2021 for seven years. Information required includes the total number of branches, total number of ATMs, total beneficiary accounts, deposits in accounts (in lac), and the number of Rupay debit cards issued to measure FI. The data relating to FI were collected from the PMJDY progress report. The data were taken on the overall performance of the banks. The data relating to the Indian banks were collected from statistical reports published by the Reserve Bank of India. RoA, NiM, and ROE were used to measure banks' profitability. [35] considered RoA and ROE as a proxy to measure banks' profitability. Other bank-related variables used in the study were the CAR, bank size, and loan-to-deposit ratio [36, 33]. The study uses CAR, bank size, and credit-deposit ratio in our analysis. The study uses the yearly stock prices of sampled banks collected from the National Stock Exchange. The study employs an OLS regression model and factor analysis.

3.2. Model Specifications

Factor analysis

A few researchers used one variable to develop the FI index [37]. The variables - bank branches, ATMs, total beneficiary accounts, deposits, and Rupay debit cards issued, show high collinearity among each other. We resolved this issue by developing the financial index model using factor analysis in the Indian context. Using factor analysis, [9] created an FI index.

Multiple Regression analysis

We developed two models – the first model explains the relationship between financial performance, bank-specific variables, and FI [3]. The second model explains the combined effect of FI and performance on capital market returns. [34] analyzed the relationship between banks' performance and stock prices. The FI scheme - the PMJDY scheme was introduced to enhance the reach of financial services. The scheme's introduction will improve banks' performance [3], ultimately improving the performance of stocks listed on the capital market. So, based on the above explanation, we formulated the following hypotheses for FI, banks' performance, and capital market:

H_1: FI and other bank-specific variables are strongly related to bank performance.
H_2: Bank performance variables are strongly related to price-based returns.
H_3: FI and other bank-specific variables are strongly related to price-based returns.
OLS regression determined FI's impact on India's capital markets. The general form of equations for the panel data is as follows:

1. $RoA/RoE/NiM = b_0 + b_1\ FIN\_IND + b_2\ CTDR + b_3\ CAR + e$ … (1/2/3)
2. $SR = b_0 + b_1\ RoA + b_2\ NiM + b_3\ RoE + b_4\ FIN\ INDEX + b_5\ CTDR + b_6\ CAR + e$ … (4)

Where:

a. SR = Stock returns $[P_{t\ (Current\ year)} - P_{\ t-1(previous\ year)} / P_{\ t-1(previous\ year)}]$
b. RoA = Return on Asset *[Net income / total asset]*
c. RoE = Return on Equity *[Net income / total equity]*
d. NiM = Net Interest Margin *[interest earned – interest paid]*
e. FIN INDEX = FI index
f. CD Ratio = credit to deposit ratio *[credit/deposit * 100]*
g. CAR = Capital adequacy ratio *[(Tier 1 capital + Tier 2 capital)/risk-weighted assets]*
h. b_0 = Constant
i. e = error term

4. Data Analysis

4.1. Descriptive analysis and Bivariate analysis

Table 1 presents the descriptive statistics of the sample banks under study. The mean values are suspectable to outliers; we use the median value for discussion. The median value of total branches, ATMs, total beneficiaries, deposits, and debit cards issued are high in numbers. The medians show banks' increasing business and profits. The median value of RoA is 0.31, indicating banks are earning Rs 0.31 over the total assets employed. The stated value is due to the increase in the interest earned, transaction fee resulting in the use of ATMs and Rupay debit cards, and increase in the beneficiaries. The median value of NiM and ROE is 2.95 and 5.30, and this is due to the higher profit margins. The median value of the CD ratio is 74.55, and the CAR is 13.20. One possible explanation for the high CD ratio is the increase in the current savings account (CASA). CASA is total deposits in both the current and the savings account. CAR is high due to regulatory requirements and the strict Reserve Bank of India policy.

Table 1: Descriptive Statistics

	Observation	Mean	Median	SD	Min	Max

Total Branches	175	3693	2675	4068	193	22961
No. of ATMs	175	7115	3145	10947	0	62617
Beneficiaries	175	8918442	1772120	19889128	11109	128517334
Deposits	175	216668	46574	495914	59	3683440
Rupay Debit Card	175	7181522	1438439	16809038	0	120159412
ROA	175	0.179	0.3100	1.253	-5.39	2.01
NIM	175	3.095	2.9500	0.784	1.32	4.6
ROE	175	0.324	5.30	16.246	- 67.52	21.33
Stock Return	175	-0.0407	-0.0884	.336	-0.829	.9258
CD Ratio	175	75.864	74.55	13.945	46.99	162.72
CAR	175	13.69	13.200	2.581	8.46	22.26
Bank Size	175	498589.1	280065	673790.1	27104.67	4534430

Source: Created by authors

Table 2 represents the correlation analysis of the banks' FI indicators, performance indicators, and stock price returns. It is evident from the table that the FI indicators show a high correlation among the variables. The FI variables show high multicollinearity among each other. Profitability ratios do not show any sign of association with other variables. The bank size is the one variable other than the CD ratio and CAR that shows a high correlation with FI variables among bank-related variables. Table 2 reveals that all variables have either negative values or values less than 6.00.

Table 2: Correlation analysis – I

Variables	Branches	ATMs	Total Beneficiaries	Deposits	Rupay Debit Cards issued	ROA	NIM	ROE	Stock Return	CD Ratio	CAR	Size
Branches	1											
ATMS	0.944	1										
Total Beneficiaries	0.906	0.862	1									
Deposits	0.785	0.698	0.930	1								

Rupay Debit Cards issued	0.887	0.853	0.989	0.936	1							
RoA	-0.050	0.067	-0.053	-0.038	-0.042	1						
NiM	-0.227	-0.026	-0.165	-0.144	-0.147	0.698	1					
RoE	-0.028	0.094	-0.038	-0.039	-0.026	0.594	0.571	1.000				
Stock Returns	0.087	0.131	0.077	0.093	0.074	0.341	0.262	0.311	1.000			
CD RATIO	-0.160	0.026	-0.188	-0.235	-0.166	0.327	0.484	0.350	-0.028	1		
CAR	-0.134	0.023	-0.130	-0.086	-0.122	0.529	0.711	0.560	0.311	0.436	1.000	
Size	0.944	0.964	0.894	0.795	0.893	0.060	-0.036	0.073	0.148	-0.004	0.051	1.00

Source: Created by authors

Table 3 represents the correlational analysis of variables after developing the FI index. The correlation among the variables is either negative or less than 0.711. The bank size was removed from the analysis because of the high correlation with the FI index. Stock prices show a low correlation with other variables under the study.

Table 3. Correlation analysis – II

Variables	RoA	NiM	RoE	Stock Return	CD Ratio	CAR	Size	FIN INDEX
RoA	1							
NiM	0.698	1.000						

RoE	0.594	0.571	1.000					
Stock Return	0.341	0.262	0.311	1.000				
CD Ratio	0.327	0.484	0.350	-0.028	1.000			
CAR	0.529	0.711	0.560	0.311	0.436	1.000		
Size	0.060	-0.036	0.073	0.148	-0.004	0.051	1.000	
FIN INDEX	-0.025	-0.151	-0.009	0.096	-0.153	-0.096	0.944	1

Source: Created by authors

4.2. Development of FI Index and Effect of FI on Bank Profitability

This study uses factor analysis to create a FI index based on five FI proxies. Factor analysis is reported in Table 4. Only one component was produced, and the factor loading value of five variables towards the factor is more than 0.9. The construction of the multidimensional proxy, FIN INDEX, was motivated by the fact that the discovered variables exhibit strong multicollinearity, tested using pairwise correlation; to reduce the issue of high multicollinearity, the index was developed [9]. The FI proxy index enables a holistic study of FI and bank profitability. Using this calculating procedure, the i^{th} factor index can be represented as follows:

FI Index = $W_1 X_1 + W_2 X_2 + W_3 X_3 + \_ \_ \_ + W_N X_N$,

The FI index comprises five FI variables: the total number of branches, total number of ATMs, beneficiary accounts, deposits (In lac), and Rupay debit cards.

Table 4: Component Matrix

Variables	**Component 1**
Number of Branches	0.951
Number of ATMs	0.916
Total Beneficiaries	0.987
Deposits	0.916
Rupay Debit Cards	0.982

Source: Created by authors

The study uses factor analysis output in the multiple regression analysis models. The FIN INDEX, CD ratio, and CAR to bank profitability variables are all represented in Table 5.

Table 5: Regression Model 1, 2, & 3

	(M1 - RoA)	(M2 - RoE)	(M3 - NiM)
FIN INDEX	.069 (.812)	2.956 (.417)	-4.372 (.960)
CD Ratio	.011 (.098)	.177 (.041)	-.647 (.755)
CAR	.233 (.000)	3.258 (.000)	-25.594 (.022)
N	175	175	175
R^2	.293	.332	.063
***F*-statistics**	17.642 (.000)	21.168 (.000)	2.854 (.025)

Source: Created by authors

The impact of FI on bank profitability is shown in Table 5. With F-test (4, 170) = 17.642, $p < 0.05$, the R^2 value for regression model 1 is 0.293, indicating that the predictors explained 29.3% of the variance in the outcome variable. CAR (B = 0.233, $p < .05$) was positively linked with RoA. The FIN INDEX (B = 0.69, $p > .05$) and CD ratio (B = 0.011, $p > .05$) are not substantially connected to the RoA. With F (4, 170) = 21.168, $p < 0.05$, the R^2 value for model 2 is 0.332, indicating that the predictors explained 33.2 percent of the variance in the outcome variable. CAR (B =.177, $p > .05$) and CD ratio (B = 3.258, $p < .05$) were found to be positively associated with RoE. FI index (B = 2.956, $p > .05$), on the other hand, is not substantially connected to RoE. Model 3 has an R^2 of 0.063, indicating that the predictors explained 6.3 percent of the variation in the outcome variable, with F (4, 170) = 2.854, $p < 0.05$. The capital adequacy ratio (B = -25.594, $p > .05$) was inversely linked with NiM. The FI index (B = - 4.372, $p > .05$) and CD ratio (B = - 0.647, $p < .05$) are not substantially connected to the RoA. The coefficient for the FI index variable is 0.069. It is positive, which means that any change of one percent in the FI index will change by the same value. The RoA will improve by 0.069. The following results are supported by [38, 39]. [30] found opposite relations with the dependent variable. The regression coefficient for the CD ratio is positive; this explains that for a one percent change in the CD ratio, the RoA will experience an increase of 0.011. The regression coefficient for the CAR is positive; the RoA will experience a growth of 0.233. [40, 33] support the relation, and [41] found the opposite. From model 2, it can be interpreted that the FI index is positive, and the RoE will increase by 2.956 units. The identified relation is supported by [39]. The coefficient of the CD ratio is positive so that the RoE will experience an increase of 0.177 units. The coefficient for the CAR is positive, and the RoE will experience a growth of

3.258 units. Model 3 explains the relation with NiM. NiM negatively relates to the FI index, the CD ratio, and CAR. It can be interpreted that the FI index is not significantly negative; there will be a decrease of 4.372 units in NiM. The CD radio shows a reduction of 0.647. The CAR shows a decline of 25.594 units in NiM. The results show that FI does not significantly influence banks' profitability. [9] showed that banks become more profitable when FI rises because their RoA, RoE, and NiM rise. However, our study's results differ from those of [9]. There was an effort to increase the pool of non-banked into the mainstream who could access financial resources, which lowered lending requirements. The action that encourages FI may occasionally result in assets of lower quality (bad loans), leading to non-performing assets [42]. Our results are inconsistent with earlier empirical research on the connection between FI and banks' profitability [30]. The CD ratio in model 2 is significant with RoE. In models 1 and 3, the results are insignificant. The CD ratio demonstrates the bank's capacity to offset loan losses by supplying sufficient liquidity. The increase in the CD ratio reveals that the number of new customers is increasing, increasing bank deposits. CD ratio helps the investor identify the bank's lending position. Unlike deposits, as the CD ratio increases, the bank is less risky and does not use debt to finance its operation. As a result, the bank is not borrowing money from its customers and is using less debt. This increases its margins, which are reflected in equity. For models 1 and 2, CAR is significantly positive. However, for model 3, it is negatively insignificant. CAR helps banks absorb reasonable losses. CAR reduces bank failure risk, improving a country's financial system. High CAR is safe and will meet responsibilities.

4.3. FI and Profitability: Impact on Bank Stock Returns

The effect of bank profitability and the FI index on bank stock returns is shown in Table 6. Model 4 has an R^2 of 0.136, indicating that the predictors explained 13.6 percent of the variation in the outcome variable ($F(5, 175) = 8.952$, $p < 0.05$. The value shows that RoA, RoE, and NiM moderately affect stock returns. In particular, RoA (B =.06, $p < .05$) is positively related to stock returns. The NiM (B = -3.710-5, $p > .05$) and RoE (B =.003, $p > .05$) are not significantly connected to stock returns.

Table 6: Regression Model 4

	Stock Returns
RoA	.067 (.009)
NiM	-0.005 (.613)
RoE	.003 (.055)
Fin Index	-.071 (.403)

CD Ratio	-.005 (.009)
Car	.017 (.000)
N	175
R^2	.136
***F*-Statistics**	8.952 (.000)

Source: Created by authors

From model 6, the coefficient of the RoA is positive, and the stock returns will increase by 0.067. The relation is in line with [43, 44] and is opposite with [45, 34]. The coefficient of NiM is negative so that the stock returns will experience a decrease of -0.005. The following results are supported by [34]. The opposite relation was identified by [46, 47]. The coefficient of the ROE is positive, so the stock returns will experience an increase of 0.003. The following associations are supported by [45]. The identified relation was opposite and similar to the findings of [34]. The RoA is the only performance indicator that significantly affects the price-based return. Other indicators are insignificant in affecting price-based returns. [48], if the markets are robust or semi-strong efficient, the accounting measures of performance indicators can be reflected in the price-based returns. A bank's ability to create income from its financial and real investment resources is reflected in its RoA. The better the efficiency of the market to reflect the performance of banks, the greater the chance of an increase in the volume of business, indicating higher profitability. [49] said that ROA is a better measure of a company's asset-generating potential than RoE, as RoE does not reflect the leverage used. Thus, an increase in RoA may result in lowering the default risk. [50] say that the level of development of the stock market will make banks more money. This is because the stock market's growth makes it easier for companies to get more money, lowering the risk of loan default.

The effect of the FI and other bank performance indicators on bank stock returns is presented in Table 6. It is evident that the CAR ($B = .000$, $p < .05$) has a significantly positive association. CD ratio ($B = -.01$, $p < .05$) is negatively associated with stock returns. The FI index ($B = -.07$, $p > .05$) is insignificant to the price-based return. The FI index coefficient is a negative number. A reduction of 0.071 can be expected in stock returns. Our model demonstrates that an increase in FI activity does not lead to a rise in profits. Price-based returns are reduced when market efficiencies are moderate or substantial since they reflect the relationship with investors. Since the CD ratio coefficient is negative, stock returns will fall by 005. Higher CD ratios are associated with greater stock returns. Nonetheless, we find a negative but statistically significant correlation in our model. The statistics suggest a rise in banks' problematic loans, which might give investors a poor impression of the sector and reduce stock returns. The regression coefficient for the CAR is positive so that the price-based returns will increase by 0.017. The following results contradict the findings of [25, 31]. In the case of India, CAR is highly beneficial and

significantly correlated with the price-based return. This correlation shows that banks substantially impact the profits from a pricing shift. According to [31], if the market is efficient in either the solid or semi-strong form, this relationship will encourage more people to buy banking stocks and reduce their concerns about the sector's long-term viability. Table 7 provides a hypothesis testing summary from regression estimates.

Table 7: Hypothesis testing summary from regression models

No.	Hypotheses	Results
Regression Model 1		
$H_{1.1}$	FI is significantly associated with RoA	Reject
$H_{1.2}$	CD ratio is significantly associated with RoA	Reject
$H_{1.3}$	CAR is significantly associated with RoA	Fails to Reject
Regression Model 2		
$H_{2.1}$	FI is significantly associated with RoE	Reject
$H_{2.2}$	CD ratio is significantly associated with RoE	Fails to Reject
$H_{2.3}$	CAR is significantly associated with RoE	Fails to Reject
Regression Model 3		
$H_{3.1}$	FI is significantly associated with NiM	Reject
$H_{3.2}$	CD ratio is significantly associated with NiM	Reject
$H_{3.3}$	CAR is significantly associated with NiM	Fails to Reject
Regression Model 4		
$H_{4.1}$	RoA is significantly associated with the price-based returns	Fails to Reject
$H_{4.2}$	NiM significantly associated with the price-based returns	Reject
$H_{4.3}$	RoE is significantly associated with the price-based returns	Reject
$H_{4.4}$	FI is significantly associated with price-based returns	Reject
$H_{4.5}$	CD Ratio is significantly associated with price-based returns	Fails to Reject
$H_{4.6}$	CAR is significantly associated with price-based returns	Fails to Reject

Source: Created by authors

5. Discussion & Conclusion

The study seeks to determine the correlation between FI, banks' profitability, and the stock market's performance, considering efforts such as the PMJDY scheme. The study results indicate a combination of effects on bank profitability, with no significant influence on RoA and RoE and a negative correlation with NiM. This relation suggests that expanding financial access may not drive sustainability banks' profits. The absence of a substantial correlation between FI and stock market returns raises inquiries on the factors that drive

economic growth and investor trust. The influence is not direct and is contingent upon variables such as macroeconomic conditions, investors' sentiments, and the performance of the banking industry. This analysis questions the efficacy of the PMJDY scheme in attaining its financial and economic development objectives. The initiative has provided millions of Indians with financial access. However, its effect on the bank's profitability and stock market returns is restricted. This indicates that policymakers should advocate appropriately utilizing the PMJDY scheme to facilitate sustained economic growth. The study findings have broader implications for the role of FI as a development tool. FI is considered a key step for poverty reduction and economic growth. The results suggest that the impact of FI depends on FI policies, economic activity, and regulatory environment.

5.1. Theoretical Implication

The findings of this study question the conventional understanding of financial intermediation theory, specifically about extensive FI initiatives such as the PMJDY plan in India. The idea of financial intermediation states that financial institutions are vital in gathering savings from entities with a surplus and directing them toward productive investments by entities with a deficit. This process ultimately promotes economic growth and development. Nevertheless, our research indicates that the PMJDY program, despite its primary objective of increasing banking services accessibility for the unbanked population, has not notably improved the role of banks in facilitating financial transactions. The minimal positive correlation between FI, RoE, and RoA and the minimal negative correlation with NiM suggest that the program has not resulted in higher bank profitability or efficiency. Moreover, the lack of a substantial and meaningful correlation between financial intermediation, FI, and stock market return raises doubts about the program's efficacy in promoting general economic expansion. There are multiple theoretical implications – first, the financial intermediation theory does not fully cover all the aspects of FI in developing countries when the government leads the projects. The trade-off between FI goal-setting and expanding opportunities for financial services may not increase the financial performance of banks. Also, these results raise questions about the government's supply-side policies for stimulating FI and economic growth. This paper advised to revisit the assumptions of financial intermediation theory.

5.2. Practical Implication

The diverse impacts of the PMJDY plan on banks' profitability indicate that a solitary financial inclusion strategy cannot achieve success. There is a demand for financial goods and services that prioritize customers' needs and are profitable while also serving individuals who need access to traditional banking services. [51] conducted a study examining the difficulties and compromises microfinance organizations encounter in achieving social impact and financial stability. There is no relationship between FI and traditional profitability measures. Mere expansion of the financial services offered may not necessarily lead to an improvement in the overall performance of the banking sector. The

banks' profitability is influenced by operational efficiency, risk management, and client engagement, which require attention. The negative association between FI and NiM implies that the objectives of integrating financial services into the mainstream and improving banks' performance have opposite effects on society. The banking industry and policymakers must proficiently oversee the objectives of financial institutions and guarantee long-term financial viability. This could facilitate the creation of an innovative solution to serve the population without access to banking services while reducing costs. The inverse correlation between FI and stock market returns suggests that investors may overlook the scheme's favorable influence on banks' performance, which is directly linked to capital market results. Policymakers and financial institutions may articulate the positive impacts of financial inclusion, such as reducing poverty rates, stimulating economic activity, and improving social welfare.

5.3. Conclusion

The research findings discuss the influence of the PMJDY schemes, a financial inclusion drive, on banks' profitability. Although the research indicates a positive correlation between FI, RoE, and RoA, these correlations are statistically insignificant, suggesting that the observed effects are likely attributable to random chance rather than a genuine link. On the other hand, a statistically negative correlation between FI and NiM indicates that the program may have increased its influence. Nevertheless, this may have exerted downward pressure on the bank's interest income relative to its expenses. There is a possible trade-off between FI and the ability of banks to remain profitable.

Furthermore, an inverse correlation exists between FI and the stock market's performance. This indicates that the market has not recognized the long-term advantages of FI as a means to enhance the financial performance of the banking sector. The findings indicate that achieving financial inclusion with long-term sustainability requires a delicate equilibrium between social and economic goals and financial institutions.

6. Future Study

The findings of the study are necessarily restricted in specific ways. One of the study's limitations is the inability to compare banks operating in the public and private sectors. The sample size is also one of the study's limitations. The sample is restricted to public sector and private sector banks listed on the Indian stock exchange, which presents an opportunity for further investigation but also limits the scope of the study. In the future, research can be undertaken in the banking industry employing comparison between public sector, private sector, and foreign sector banks to acquire a more excellent knowledge of the influence of FI on the bank's performance and the returns they generate on the stock market.

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