DOES SIZE INFLUENCE FIRM PERFORMANCE? AN IMPACT ASSESSMENT ON SELECT INDIAN BANKS

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ABSTRACT

This study aims to assess the contribution of the application of financial resources and the impact of size on firm performance in the Indian banking industry. A total of nine variables have been taken for the study, namely, return on investment, return on advances, return on fixed assets, number of employees, number of branches, etc. The study applies panel regression to analyze the data of 10 public sector banks and 10 private sector banks for five years from 2016 to 2020. The results confirm the impact of changes in size on the performance of the banks. Out of all the nine variables, an increase in current assets, advances, and employee number was found to have a positive impact on bank performance in terms of ROA and ROE whereas any increase in branch spread and assets apart from advances, fixed assets, current assets, and investments is expected to decrease the profit potential of the firms.

Keywords: *Bank size, bank performance, return on assets, return on equity, panel regression.*
JEL Classifications: G21, D90, G11, G40

INTRODUCTION

Bank as an integral part of the financial system ensures a continuous flow of capital in the market. Its role in maintaining the dynamism of the economy is of immense significance. But in recent years banking sector of India has been encountering many issues with the implementation of blockchain technology (Garg et al., 2021), political connection and influence (Chahal, 2019), big data analytics (Srivastava, 2015; Kathuria, 2016), the convergence of IFRS (Das et al., 2013), etc. It has been found that Indian banks are only 73.44% efficient (Goyal & Aggarwal, 2019). The literature in the area has outlined several factors affecting the performance of Indian banks. Among them are the bank's intellectual capital (Mondal & Ghosh, 2012; Ghosh and Majhi, 2014), income diversity (Ahamed, 2017), regulatory structure (Barth et. al., 2001), board size (Adams & Mehran, 2005; Gafoor et. al., (2018), financial technology (Phan, et. al., 2018). These factors have been seen to have a significant and positive impact on the performance of banks in India. Sujud and Hashem (2017) have also found

that bank innovations have a positive impact on the profitability and return on assets of commercial banks. However, the huge amount of NPA is also a chronic issue that has been negatively affecting the performance of the industry. To curb these challenges and amplify the developments, the banking industry is going through a systematic change with large-scale mergers, digitalization, and privatization of public sector banks. These changes have a direct effect on the size of the banks in terms of parameters like market capitalization, total assets, revenues, equity capital, risk-weighted assets, net income, and the number of customers (Schildbach, 2017). Growth in bank size helps in increasing the profitability of the bank by spreading the fixed cost over a larger asset base. When bank operation increases, banks can make better utilization of the expertise of loan officers (Medley, 2016). This affects the return derived from each employee and the branches at the grass root level. On the contrary, small banks can make better contact with borrowers and can meet their financial requirements more efficiently.

Thus, keeping in view the significance of retail banks and their health in the Indian economy, their sustainability (Mergaerts & Vennet, 2016) should be our priority. The structural changes in the industry will lead to several changes in terms of branch spread, employee strength, asset quality, and composition in the banks of India. An extensive study is required to capture these changes and for assessing the performance of banks from different dimensions.

The reviewed literature provided an extensive base for the study. Many researchers have assessed the impact of board size, corporate governance, capitalization, ownership, etc. on bank performance. However, it has been observed that very little attention has been devoted to measuring the impact of branch numbers and employee numbers on bank performance. Further, most of the studies have taken the total assets of the bank as a variable to assess bank size. Hence, the effect of the size of fixed assets, current assets, and other assets has been critically examined on bank performance. In addition, an attempt has been made to address the impact of an increase in the number of branches and changes in employee strength on the performance of the banks. The study used panel regression to capture the relationship between fixed assets, investments, advances, employee number, branch number, interest return on employees, and interest return of branches on the performance of the banks. The financial performance has been measured in terms of the Return on Equity (ROE) and Return on Assets (ROA). The regression results show a significant impact of changes in advances and current assets, number of employees, and branch network on the performance indicators i.e. ROA and ROE. But, interest return on branches does not have an impact on the ROE of the banks.

This research work contributes to the existing literature on bank performance by adding new variables such as branch spread and employee strength and has made a critical assessment of the impact of individual asset components instead of total assets. We have also emphasized the interest income of employees and branches and their contribution to bank performance. It will be beneficial to bankers for assessing the impact of employees' numbers on bank performance.

They can standardize and rationalize branch networks vis-à-vis bank performance.

The remainder of the paper has been structured into four other segments. The second segment presents the reviewed literature and the theoretical base of the study. Section 3 outlines the empirical model and description. The empirical results have been discussed in Section 4 and the research concludes in the last section.

REVIEW OF LITERATURE

A vast pool of literature can be found which relates bank performance with various concepts of the size factor of banks. Hirtle (2007) focused on bank network size and bank performance and found that there is no systematic relationship between the size and performance of a bank. Wu & Shen (2011) and Sufian & Noor (2012) used the market share of bank and total deposits respectively to represent the size factor and found a significant positive relationship between these factors and bank profitability. An analysis made by Terraza (2015) diagnosed the effect of changes in bank capital and liquidity ratios on the performance of 1270 European banks. The author found consistency in the profitability of medium-sized banks and added that the size of banks helps in increasing profitability, liquidity, and also risk. Further increase in the size of banks helps them to exploit investment opportunities to increase financial performance (Fanta et. al., 2013; Hughes et. al.,2019). But a different opinion is derived by Kagecha (2016) in Kenya who found that size of a bank has no impact on its profitability. Similar findings are also derived by Regehr & Sengupta (2016) recorded no significant change in profitability due to the expansion of banks or change in their asset composition. According to them, it is the favorable market outcomes and bank-specific characteristics that affect the return of the banks. Other parameters that represent the size of banks such as bank lending capacity (Davis & Zhu,2007; Utama & Musa, 2011; Bertin et al.,2013), board size (Bukair & Rahman, 2015), capital base (Sufian & Habibullah, 2011) has shown a positive relationship with performance and profitability. In addition, it is good corporate governance practices along with large bank size have a positive impact on the bank's performance (Nausad & Malik, 2015).

The mergers in the Indian banking industry have led to a substantial increase in the size of the banks. Though the study shows that mergers bring the benefits of economies of scale and create positive synergy (Altunbaş & Marqués, 2007) this also leads to the accumulation of larger non-performing assets in the portfolio of the merging banks (Bawa et al., 2019). Privatization of public sector banks(PSBs) is also a prospective change in the Indian banking industry. It is expected to improve the efficiency and performance of PSBs. Literature shows that private banks supersede public sector banks in terms of productivity and growth (Sanyal & Shankar, 2011). Similarly, Gupta & Mahakud (2020) analyzed the impact of bank size, capitalization, and ownership on bank performance and concluded that private-sector banks are more profitable as compared to public-sector banks. But Fujii et. al., (2014) found that foreign banks dominate the Indian market as compared to other banks. Bonin et. al., (2004) also examined bank performance, ownership, and efficiency and inferred that foreign-owned banks are more efficient. Banerjee & Velamuri

(2015) further substantiated that the capital adequacy ratio and return of foreign banks are higher as compared to private and public banks. It is observed from the above literature that different authors have a different opinion regarding size and scale and their impact on business performance. Thus, it is worth pondering whether the asset portfolio affects the performance of firms. Further, whether changes in employee strength and branch spread and the resultant impact on their efficiency have an impact on the performance of the banks or not should be examined.

EMPIRICAL MODEL AND DESCRIPTION

A. Justification and Selection of Sample

In this study, samples from 20 banks have been taken. These comprise ten public sector banks and ten private sector banks selected randomly from the top 20 Public Sector Banks and Private Sectors Banks list in terms of total assets reported by money control as of 2021. The sample banks altogether hold 78% of the total assets of all the private and public sector banks (Appendix II). Data are collected from the annual reports and CMIE database which pertains from 2016 to 2020, the period after the initiation of the Digital India Campaign which brought in a significant change in the banking sector of India, and it was expected that technology would amplify the virtual banking behavior of Indian bank customers. Data after covid period have not been taken by assuming its erratic behaviour in the post-pandemic period.

B. Empirical Specifications

The study employed the following regression model for empirical analysis.

$$ROA_{it}=\alpha_0+\beta_1 CRI_{it}+\beta_2 CADV_{it}+\beta_3 CFA_{it}+\beta_4 COA_{it}+\beta_5 CCA_{it}+\varepsilon_{it} \quad (1)$$

$$ROE_{it}=\alpha_0+\beta_1 CRI_{it}+\beta_2 CADV_{it}+\beta_3 CFA_{it}+\beta_4 COA_{it}+\beta_5 CCA_{it}+\varepsilon_{it} \quad (2)$$

$$ROA_{it}=\gamma_0+\beta_1 CIRE_{it}+\beta_2 CIRB_{it}+\beta_3 CNE_{it}+\beta_4 CNB_{it}+\varepsilon_{it} \quad (3)$$

$$ROE_{it}=\mu_0+\beta_1 CIRE_{it}+\beta_2 CIRB_{it}+\beta_3 CNE_{it}+\beta_4 CNB_{it}+\varepsilon_{it} \quad (4)$$

Where, change in Return on Asset (Utama & Musa, 2011) and Return on Equity (Altunbas & Marques (2008) are the dependent variables representing the performance of banks. Independent variables are change in return on investment (CRI), change in advances (CADV) (Bertin et al., 2013), change in fixed assets (CFA), change in other assets (COA), and change in current assets (CCA). Other variables i.e. change in number of employees (CNE) (Schildbach, 2017), change in number of branches (CNB) (Schildbach, 2017), change in interest returns on employees (CIRE), change in interest returns on branch (CIRB) have been used to capture the impact of structural changes and the concurrent effect of performance deviation of employees and branches. All the change figures represent the trend values of respective items.

EMPIRICAL RESULTS

A. Summary Statistics

The table presents the descriptive statistics of variables. The variables are change in return on investment (CRI), change in advances (CADV), change in fixed assets (CFA), change in other assets (COA), change in number of employees (CNE), change in number of branches (CNB), change in interest returns on employees (CIRE), change in interest returns on branch (CIRB), change in current assets (CCA). The table presents the number of observations, mean, standard deviation, and minimum and maximum values. The minimum values of both the independent and dependent are negative. This indicates a negative growth in the size and performance factors during the sample period.

Table 1: Descriptive Summary.

Variable	Obs	Mean	Std. Dev.	Min	Max
Dependent Variables					
ROA	100	-34.8069	384.5839	-1533.33	1833.333
ROE	100	-35.6326	380.0654	-1758.96	1682.051
Independent Variables					
CNB	100	7.31	14.50788	-31	95
CNE	100	5.73	13.77808	-16	74
CADV	100	9.74	15.37453	-29	79
CFA	100	15.05	38.45432	-12	313
CCA	100	20.07	53.98003	-69	407
CIRE	100	3.04	10.25032	-23	45
CIRB	100	1.8	10.74968	-36	56
CRI	100	8.01	13.78954	-30	56
COA	100	37.8	58.26689	-13	405

Source: Authors' findings

B. Correlation Matrix

The robustness of the predictor variables requires that there should be no high degree of correlation among them to avoid multicollinearity. The pairwise correlation matrix has been presented in Table 2. This table presents the pair-wise correlation matrix for the independent variables used in the regression. The variables for Model (1) & (2) and (3) & (4) has been presented separately. The variables are: change in return on investment (CRI), change in advances (CADV), change in fixed assets (CFA), change in other assets (COA), change in number of employees (CNE), change

in number of branches (CNB), change in interest returns on employees (CIRE), change in interest returns on branch (CIRB), change in current assets (CCA).

Gaur and Mohapatra (2020) have substantiated that a problem of multicollinearity exists when the explanatory variables have a correlation above 0.80. As seen from the correlation table, the highest degree of correlation that exists is between CNB and CNE i.e., 0.7429. Thus, it is inferred that the explanatory variables are free from the problem of multicollinearity. Further, the variation inflation factor (VIF) is measured for such multicollinearity issues.

C. Diagnostic Tests

Preliminary diagnostic tests have been performed to check the appropriateness of the models selected in the study. The presence of heteroskedasticity has been examined by applying the Modified Wald test. Table 3 presents the results of various diagnostic tests and robustness results for all four models used in the study. The Hausman test suggests the selection between fixed effect and random effects model, where the null hypothesis is for random effects and the alternate suggests a fixed effect in the model. Persaran's test is applied to reject the null hypothesis of the absence of cross-sectional dependence which is necessary while applying fixed-effect models. VIF along with the Woolridge test suggests the presence or absence of autocorrelation. Rejection of the null hypothesis signifies the absence of autocorrelation problem. Modified Wald Test is used to test the null hypothesis that the panel is heteroskedastic. From the result shown in Table 3, it can be deduced that issue of heteroskedasticity exists for all the models. To overcome the issue, the result of robust standard errors has been reported in the study. The existence of multicollinearity has been examined using VIF. The mean VIF for the independent variable is calculated as less than 10, which implies the presence of no multicollinearity. Finally, to confirm the suitability of the fixed effect (FE) or random effect (RE) model, the Hausman test has been used to choose the more appropriate one. The findings of the Hausman test favor RE for model 1 and FE for models 2, 3, and 4. Further, the results of Pesaran's test and Woolridge test eliminated the problem of cross-sectional dependence and the presence of autocorrelation.

Table 2: Pairwise Correlation Matrix for Independent Variables.

Model (1) and (2)						**Model (3) and (4)**				
	CADV	CFA	CCA	CRI	COA		CNB	CNE	CIRE	CIRB
CADV	1					CNB	1			
CFA	0.0445	1				CNE	0.7429*	1		
CCA	0.0566	-0.0353	1			CIRE	-0.1006	-0.3705*	1	
CRI	0.5101*	0.0693	0.1099	1		CIRB	-0.4365*	-0.139	0.6145*	1
COA	0.3268*	0.0871	-0.017	0.1567	1					

Source: Authors' own findings

*Significance exists at 0.05 levels.

Table 3: Diagnostic Tests and Robustness Results.

Diagnostic Tests	(1)	(2)	(3)	(4)
VIF (Mean)	1.08	1.08	9.24	9.24
Hausman Test	Chi2(5)=7.89	Chi2(5)=17.58*	Chi2(4)=25.34*	Chi2(4)=121.45*
Model Accepted	Random Effects	Fixed Effects	Fixed Effects	Fixed Effects
Persaran's Test	Pr=0.1316	Pr=0.6247	Pr=0.1438	Pr=0.5955
Modified Wald Test for Heteroskedasticity	Chi2(20)=495.83*	Chi2(20)=1018.70*	Chi2(20)=419.55*	Chi2(20)=9526.04*
Woolridge Test for Autocorrelation	F(1, 19)=0.869	F(1,19)=1.469	F(1, 19)=0.693	F(1,19)=0.764

Source: Authors' own finding

* denotes statistical significance at 5% level.

D. Regression results

This section presents the results derived from the panel regression of the size factors of the sample banks represented by the change in various assets i.e. advances, fixed assets, current assets, other assets, and return of investments along with change in number of employees and branches and the interest return thereon. ROA and ROE have been taken as dependent variables to proxy the performance of the banks. Table 4 presents the results of panel regression with random effects for the model (1). The independent variables for the model are the individual assets of the banks and the dependent variable is ROA. The equation for the model is:

$$ROA_{it}=\alpha_0+\beta_1 CRI_{it}+\beta_2 CADV_{it}+\beta_3 CFA_{it}+\beta_4 COA_{it}+\beta_5 CCA_{it}+\varepsilon_{it}$$

where ROA= Return on Assets, CRI= change in ROI, CADV= change in advances, CFA= change in fixed assets, COA= change in other assets, CCA= change in current assets.

Table 4: Regression Results for Model 1.

Dependent Variable: ROA					
Ind.Variables	**Coefficients**	**Robust Std. Error**	**z-Value**	**p-Value**	**Remark**
CRI	-0.006	0.002	-1.54	0.462	Insignificant
CADV	0.056	0.009	5.99	0.000	Significant
CFA	0.001	0.001	1.33	0.185	Insignificant
CCA	0.004	0.001	3.03	0.002	Significant
COA	-0..004	0.002	-0.74	0.123	Insignificant
Constant	-0.282	0.239	-1.18	0.238	Insignificant
Sigma_u :0.3202 **Sigma_e :0.887** **Rho:0.1153**			r-squared:0.4627 Model fit: Wald chi2(5) = 36.96 (0.000)		

Source: Authors' own finding

The result derived from equation 1, taking ROA as a measure of bank performance has been shown in the above table. The overall R2 is 0.4627, which is satisfactory for social science research. The value of Rho is low at 0.11 which shows the error term explains a little variation in the dependent variables. The overall performance seems to be good. Wald chi-square shows the overall fitness of the model. Wald chi-square is sufficiently high and the model is found to be significant. Referring to the influence of the individual predicting variable, sufficient numbers of factors have a significant impact on ROA. But the quantum of influence of such an independent variable is very marginal. Among all the factors, advances and current assets were found to have a positive significant impact on return on assets at a 5% level. With one unit increase in advances and current assets, return on assets is to be increased by only .05 and .004 respectively.

Table 5: Regression Result for Model 2.

Dependent Variable: ROE					
Ind. Variables	**Coefficients**	**Robust Std. Error**	**t-Value**	**p-Value**	**Remark**
CRI	-0.091	0.171	-0.53	0.603	Insignificant
CADV	0.737	0.160	4.59	0.000	Significant
CFA	-0.013	0.027	-0.49	0.631	Insignificant
CCA	0.054	0.021	2.50	0.022	Significant
COA	-0.117	0.036	-3.23	0.004	Significant
Constant	6.629	4.291	1.55	0.139	Insignificant
Year					
2017	-7.603	5.044	-1.51	0.148	Insignificant
2018	-19.12	5.082	-3.76	0.001	Significant
2019	-18.30	6.115	-2.99	0.007	Significant
2020	-11.74	5.754	-2.04	0.055	Significant
Sigma_u: 8.750 **Sigma_e: 13.867532** **Rho: 0.2847**			r-squared:0.5016 Model fit: F (9, 19) =11.60(0.0020)		

Source: Authors' own finding

Table 5 presents the results of panel regression with random effects for the model (2). The independent variables for the model are the individual assets of the banks and the dependent variable is ROA. The equation for the model is:

$$ROE_{it} = \alpha_0 + \beta_1 CRI_{it} + \beta 2 CADV_{it} + \beta_3 CFA_{it} + \beta_4 COA_{it} + \beta_5 CCA_{it} + \varepsilon_{it}$$

where ROE= Return on Equity, CRI= change in ROI, CADV= change in advances, CFA= change in fixed assets, COA= change in other assets, CCA= change in current assets.

Contrary to results of Model (1), it was found that along with changes in advances and current assets, other assets also had a significant impact on the return on equity (ROE) of the banks. The coefficients in Model 2 suggest that an increase in advances and current assets will improve the ROE whereas the changes in other assets will degrade the return derived on equity. These results conform with the findings of Fanta et. al, (2013). Further to eliminate the impact of time-specific factors from the model, the time-fixed effect has been applied and reported with regression results for Model 2. The robustness of the results can be verified from the reported R2 which is as high as 0.50. The value of Rho is also low at 0.28 which shows that the error term explains a little variation in the dependent variables.

Table 6 presents the results of panel regression for model (3). The dependent variable for the model is ROA and the independent variables are the structural factors of banks. The equation for the model is:

$$ROA_{it} = \gamma_0 + \beta_1 CIRE_{it} + \beta_2 CIRB_{it} + \beta_3 CNE_{it} + \beta_4 CNB_{it} + \varepsilon_{it}$$

where ROA = return on assets, CIRE= change in interest return on employees, CIRB= change in interest return on branches, CNE= change in number of employees, CNB= change in number of branches.

Table 6: Regression Result for Model 3.

Dependent Variable: ROA					
Variables	**Coefficients**	**Robust Std. Error**	**t-Value**	**p-Value**	**Remark**
CIRE	0.123	0.058	2.11	0.048	Significant
CIRB	-0.057	0.027	-2.11	0.048	Significant
CNE	0.114	0.055	2.06	0.053	Insignificant
CNB	-0.077	0.037	-2.08	0.052	Insignificant
Constant	-0.051	0.271	-0.19	0.852	Insignificant
Year					
2017	0.564	0.338	1.67	0.112	Insignificant
2018	-0.201	0.271	-0.74	0.467	Insignificant
2019	-0.613	0.342	-1.79	0.089	Insignificant
2020	-0.451	0.354	-1.27	0.218	Insignificant
2020	-11.74	5.754	-2.04	0.055	Significant
Sigma_u: 0.791 **Sigma_e :0.853** **Rho:0.4627**			r-squared:0.3871 Model fit: F (8, 19) =2.44(0.050)		

Source: Authors' own finding

Further, table 7 presents the results of panel regression for model (4). The dependent variable for the model is ROA and the independent variables are the structural factors of banks. The equation for the model is:

$$ROE_{it} = \gamma_0 + \beta_1 CIRE_{it} + \beta_2 CIRB_{it} + \beta_3 CNE_{it} + \beta_4 CNB_{it} + \varepsilon_{it}$$

where ROE = return on assets, CIRE= change in interest return on employees, CIRB= change in interest return on branches, CNE= change in number of employees, CNB= change in number of branches. Model (3) and (4) describe the effect of changes in the structure-specific variables i.e. employee numbers, branch numbers, and interest return thereon. It was found that changes in these factors have a significant impact on the return derived on equity, however, changes in number of branches and employees were insignificant in predicting the ROA of the banks. Laeven et. al., (2016) also opined that bank size increases systematic risk. It shows, to have more ROA, banks should not go for increasing branch numbers.

Table 7: Regression Result for Model 4.

Dependent Variable: ROE					
Variables	**Coefficients**	**Robust Std. Error**	**t-Value**	**p-Value**	**Remark**
CIRE	1.690	0.585	2.89	0.009	Significant
CIRB	-0.614	0.201	-3.05	0.007	Significant
CNE	1.389	0.507	2.74	0.013	Significant
CNB	-0.895	0.281	-3.18	0.005	Significant
Constant	-3.827	3.814	-1.00	0.328	Insignificant
Year					
2017	7.116	4.424	1.61	0.124	Insignificant
2018	-3.436	3.977	-0.86	0.398	Insignificant
2019	-14.515	8.322	-1.74	0.097	Insignificant
2020	-6.431	4.622	-1.39	0.180	Insignificant
2020	-11.74	5.754	-2.04	0.055	Significant
Sigma_u: 10.838 **Sigma_e :14.319** **Rho:0.364**			r-squared:0.3510 Model fit: F (8, 19) =7.92(0.0001)		

Source: Authors' own finding

MANAGERIAL IMPLICATION AND CONCLUSION

Managerial Implication

Understanding the far-reaching impact of the size of banks on banking performance is crucial for policymakers and banking institutions. Performance improvement is an output derived from the increase in the size of a bank (Mayur & Saravanan, 2016). Larger banks can raise funds from internal sources to finance growth and developmental investment projects (Sarkar

and Sarkar, 2000). Management mechanisms can be planned and policy can be designed accordingly to deal with the risk and crisis. The present research focused on analyzing the impact of bank size on performance factors. The results verify that changes in assets, especially advances and current assets have the potential to positively boost the results of the banks. On the other hand, keeping in view the rage of the digital banking business, we found that further expansion in branch spread can negatively affect the performance of the banks. This conforms with the findings of Hirtle (2007). The strength of the workforce in banks is also found to be crucial in managing the efficiency of customer relations at the ground level. Thus, managers should be cautious while increasing the number of branches. However, more employees can work for better profitability and productivity. Schildbach (2017) and Hughes et al. (2019) also had similar inferences.

CONCLUSION

The size of the banking industry, being the major yardstick to measure banks' performance, has paramount importance, especially after vigorous efforts in the 'Digital India' campaign. Many works of literature substantiated that bank size has a positive impact on profitability Chen et al., 2018; Bertin et al., 2013). Thus, in the present work, the performances of banks as represented by return on asset and return on equity measures the bank's profitability as to how the bank's assets are generating profits by utilizing the available assets. ROE measures a bank's financial performance, which shows the efficiency with which shareholders' equity is being used to create profit. An increase in current assets, advances, and employees' numbers can be seen to have a positive impact on performance but other assets, investments, and branch numbers should be taken into due consideration as this can have a negative impact on the profitability of the banks. So, any investment in these should be done carefully. The study has been done for commercial banks of India with as many as nine variables as a measure of the size and all these are quantitative but some other quantitative and qualitative variables can put a significant impact on the bank's performance. So, future research can be done by considering these quantitative and qualitative aspects, and along with the Indian commercial banks, foreign sector banks, other cooperative banks, and financial institutions can be included in further research studies to make the research work more authentic and a broad one.

SCOPE FOR FURTHER RESEARCH

The present study takes a sample of 20 banks as a sample for 5 years; the result may differ if the window is enhanced. Further research can be conducted by enhancing the period of the study, taking the left-out variables, and adding up left-out public and private sector banks. This study is quantitative, so in further studies, its various qualitative aspects can be considered and the period of the study may be enhanced further according to the need. The result will differ from time to time as a researcher will take further years in their study.

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Appendix I: List of Banks taken in Sample Study.

Public Sector Banks	Private Sector Banks
State Bank of India	ICICI Bank
Punjab National Bank	Axis Bank
Bank of Baroda	Kotak Mahindra Bank
Bank of India	Yes Bank
Union Bank of India	IndusInd Bank
Indian Bank	Karnataka Bank
Central Bank of India	HDFC Bank
Indian Overseas Bank	City Union Bank
Punjab and Sind Bank	DCB Bank
Bank of Maharashtra	Dhanalaxmi Bank

Appendix II: Percentage of Assets Held by Sample Banks in 2021

BANKNAME	TOTAL ASSETS (in Crores)
State Bank of India	4534429.63
Punjab National Bank	1260632.62
Bank Of Baroda	1155364.77
Bank Of India	725856.45
Union Bank Of India	1071705.84
Indian Bank	626005.02
Central Bank Of India	369214.99
Indian Overseas Bank	274010.35
Punjab And Sind Bank	110481.89
Bank Of Maharashtra	196665.01
ICICI Bank	1230432.68
Axis Bank	996118.42
Kotak Mahindra Bank	383488.62
Yes Bank	273542.77
Induslnd Bank	362972.75

Karnataka Bank	85581.34
HDFC Bank	1746870.52
City Union Bank	53311.68
DCB Bank	39602.13
Dhanalaxmi Bank	13096.51
Total Assets Of Sample Banks	15509383.99
Bandhan Bank	114993.05
CSB Bank	23337.35
Federal Bank	201367.39
IDBI Bank	297764.08
Karur Vysya Bank	74623.19
South Indian Bank	94149.17
Jammu & Kashmir Bank	120291.95
Karnataka Bank	85581.34
IDFC First Bank	1631432.88
RBL Bank Ltd	100650.61
Canara Bank	1153675.03
Uco Bank	253336.11
Laxmi Vilas Bank	54511.81
Nainital Bank	769.96
Tamilnad Mercantile Bank	42758.79
Total Assets of All Banks	19758626.7
Percentage of Total Assets Held by the Sample Banks	78.49%

Source: Moneycontrol, 2021