International Journal of Multidisciplinary Research and Development
www.allsubjectjournal.com
ISSN Online: 2349-4182 ISSN Print: 2349-5979
Received: 07-11-2024, Accepted: 08-12-2024, Published: 23-12-2024
Volume 11, Issue 12, 2024, Page No. 60-63

Impact of bank predictors on profitability of Indian commercial banks

Nasir Yaseen Khanday[1], Farooq Ahmad Shah[2]
[1] Research Scholar, Department of Management Studies, Central University of Kashmir, Ganderbalm, Jammu and Kashmir, India
[2] Professor, Department of Management Studies, Central University of Kashmir, Ganderbal, Jammu and Kashmir, India

Abstract
This study explored the impact of bank predictors on profitability of commercial banks in the India. The exploratory and descriptive research designs were adopted. A sample of 37 banks selected for commercial banks including public banks (18) and private banks (19). The study was guided by one research question and one alternate hypothesis. The fixed effect model of regression analysis was used employed. The findings established a significant and insignificant relationship between predictors and bank profitability. It is recommended that banks need to improve in certain areas alike asset size, asset quality, NPA and taxes.

Keywords: Commercial banks, bank predictors, profitability, FE model

Introduction

The economic growth of a country extensively depends on its banking sector. Banks play a vibrant and significant role in the economic development of any country (Menicucci & Paolucci, 2016) [11]. The growth of any economy largely depends on its banking sector. Hence, the importance of bank profitability in the economy can be determined at the micro and macro levels. At the micro level, profit is a determinant and required for any competitive banking institution. Every bank tries to earn and achieve good profits in order to be in the business especially at the time of growing competition in the financial markets. At the macro level, a profitable banking sector should be able to absorb external negative shocks and to achieve the stability of the financial system for comprehensive advancement of the economy. Tabash & Dhankar, (2014) [17] opined that there is no doubt that banks convert deposits into productive investments as a method to facilitate economic growth in any country. India is one of the emerging economies in South Asian region with a sound financial system characterized by a diversified portfolio of financial institutions (Ghosh, 2016) [6]. There are many banks and financial institutions in India to accomplish different goals in economic activities. Indian banking is receiving more attention recently because of larger expansion and higher Gross Domestic Product (GDP) growth rates.

Review of literature

Extensive research worldwide has been conducted for examining the aspects that influence profitability of banks. Prior studies of a bank's profitability can be classified into three categories. First, studies examined from different countries around the world (Perera and Wickramanayake 2016 [12]; Dietrich and Wanzenried 2014 [5]; and Masood, and Ashraf 2012) [9]. Second, studies are among different banks in the same region Chowdhury and Rasid (2017) [4] who studied GCC countries, Petria, *et al*, (2015) who studied EU 27 countries, Menicucci and Paolucci (2016) [11] who studied Europe, Finally, studies that have originated from single country. For example, Bougatef (2017) [2] studied Tunisia, Tan (2016) [18] studied China, Bouzgarrou, *et al*, (2017) [3] studied France, Robin, *et al*, (2018) [14] studied Bangladesh, Ramlan and Adnan (2016) [13] Malaysia, Mendonça and Silvzz (2018) [10] Brazil and Almaqtari *et al* (2018) [1] and Sinha and Sharma (2016) [16] studied India. ROA and ROE have been major part of prior studies have measured profitability.

However, bank's profitability was investigated by prior research as a function of both bank-specific (internal) and macroeconomic (external) determinants (Sinha and Sharma, 2016) [16]. Bank related determinants are associated to result of managerial decisions of a bank (Louzis *et al*., 2012 [8]; Rjoub *et al*., 2017) [15]. Bank specific variables such as capital adequacy ratio, asset quality ratio, liquidity ratio, operating efficiency ratio, deposits ratio and bank size are assessed by (Petria *et al*. 2015 and Tiberiu 2015) [19].

Objectives of study

- To identify predictors that affect the profitability of Indian commercial banks.

Hypotheses

- $H_{1:}$ Bank specific variables have significant impact on bank profitability.

Research methodology

The study employs the exploratory and descriptive research design. The study employs a panel data set using firm level data of 63 Indian commercial banks and macroeconomic level data of 15 years (2006-2020)

Variable selection

The study applies two profitability indicators considering their importance: return on assets (ROA), return on equity (ROE) as dependent variable. The independent variables are asset size (LnAS), asset quality (AQ), liquidity (LIQ), diversification (DIV), financial leverage (LEV), taxation (TAX), non-performing assets (NPA) and capital adequacy ratio (CAR).

Variables	Acronym	Description
Return on Assets	ROA	Profit after tax to average assets
Return on Equity	ROE	Profit after tax to average equity
Assets Size	LnAS	Logarithm of total assets
Asset Quality	AQ	Loss loan provisions to total assets
Liquidity	LIQ	Total advances to total assets
Diversification	DIV	Non-interest income to gross income
Financial Leverage	FL	Total debt to total equity
Taxation	TAX	Tax paid to operating profit before tax
Non-Performing Assets	NPA	Non-Performing Assets/ total assets
Capital Adequacy Ratio	CAR	Equity to total assets

Model construction

$ROA_{it} = \alpha_i + \beta_1 LnAS_{it} + \beta_2 AQ_{it} + \beta_3 LIQ_{it} + + \beta_4 DIV_{it} + \beta_5 LEV_{it} + \beta_6 TAX_{it} + \beta_7 NPA_{it} + \beta_8 CAR_{it} + \varepsilon_i$ ..... Eq. (1)

$ROE_{it} = \alpha_i + \beta_1 LnAS_{it} + \beta_2 AQ_{it} + \beta_3 LIQ_{it} + + \beta_4 DIV_{it} + \beta_5 LEV_{it} + \beta_6 TAX_{it} + \beta_7 NPA_{it} + \beta_8 CAR_{it} + \varepsilon_i$ ..... Eq. (2)

Where,
i- represents individual banks,
t - indicates years,
ε_i - random error term,
α_i- The constant term,
β_i- Co-efficient of independent variables

Descriptive statistics

The descriptive statistics for all the variables that are under study are presented in table 1 as shown by the table the mean value for the four profitability indicators returns on assets (ROA), return on equity (ROE), is 0.67 and 8.41 respectively indicating that over the period under study Indian commercial banks have remained profitable. In addition to that results also indicate the overall growth of Indian commercial banks as they are generating profits by utilizing assets efficiently. However, the minimum negative values for all four ROA (-3.48) and ROE (-85.92) indicates that certain banks in the sample are not able to generate profits and also fail in optimum utilization of assets.

Table 1: Descriptive Statistics

	Mean	Min	Max	SD	Skewness	Kurtosis
ROA	0.67	-3.48	2.02	0.89	-1.44	5.80
ROE	8.41	-85.92	28.14	13.94	-2.27	9.39
LnAS	4.98	2.99	6.60	0.64	-0.37	2.86
AQ	0.88	-0.27	6.14	1.03	2.03	7.43
LIQ	0.60	0.41	0.72	0.06	-0.90	3.93
DIV	0.12	0.00	0.26	0.04	0.75	3.77
LEV	0.55	0.00	5.88	0.94	2.47	9.27
TAX	0.42	-0.77	2.42	0.40	1.54	6.56
NPA	2.39	0.00	16.49	2.66	2.03	7.60
CAR	13.20	8.69	23.20	2.19	1.03	4.85

Furthermore, the difference between the minimum and maximum of ROA (-3.48) and ROE (-85.92) emphasizes that banks in the sample show substantial heterogeneity. Standard deviation is a measure of the dispersion from the mean and smaller the standard deviation the more accurate future estimates are because of less variability. The variation data of profitability proxies is clustered around mean as standard deviation on ROA (0.89) and ROE (13.94) thus, smaller the standard deviation the more accurate the future predictions. These findings are substantiated by Almaqtari *et al*. (2018) [1] and Singh and Sharma (2016).

Impact of bank-level predictors on profitability of commercial banks

Bank level predictors are used to assess the relationship when regressed with proxies of profitability. In order to test whether the bank level variables in the Indian commercial banks have an impact on the profitability and to establish this relation model Eqs. (1) and (2) are estimated below. The results of the analysis are presented in Table 2 It pertinent to mention that column (1) reports the results of the model that takes ROA as a proxy for profitability, column (2) reports the results of the model that takes ROE as a proxy for profitability. Notably, results are reported by columns but after dropping outlier observations 36 reducing final observation to 519.

The Table 2 illustrates that the adjusted R^2 for the model (1) and (2), implies that the independent variables explain 82 and 77 percent of the variation in dependent variable. The BLUE estimate between FE and OLS is decided by performing F-test for fixed effects. It can be analyzed from Table 2 that F-test statistics for all the specifications in (1) and are significant at 95 percent, implying that use of FE would give better results than OLS. The test statistics of B-P LM test for all the specifications in model (1) and (2) are significant at 95 percent, thus RE model is better than OLS. Finally, to select a better model between FE and RE, Hausman test is applied. The test statistics of Hausman test for all specifications in model (1) and (2) are significant at 95 percent, meaning that FE model would produce better results.

Heteroscedasticity has been tested by information matrix (IM) test. The p-value for IM test for all the specifications is less than the conventional level of significance, suggesting the presence of heteroscedasticity. Further, the autocorrelation has been tested by using Wooldridge test for autocorrelation. Accordingly, it can be inferred from Table 3 that the p-vale is less than the conventional level of significance, signifying the presence of autocorrelation. Heteroscedasticity and autocorrelation have been corrected by producing clustered robust standard errors. It may be noted that the multicollinearity has been tested by calculating VIFs for all the independent variable and VIF must not be above 10. It can be inferred from the Table 2 that the no VIF is greater than 10, suggesting that multicollinearity is not a problem.

Table 2: Regression Analysis

Variables	(1) ROA	VIF	(2) ROE	VIF
LnAS	-0.369 (0.230)	2.96	-9.846** (4.008)	2.96
AQ	-0.333*** (0.119)	2.52	-5.749** (2.185)	2.52
LIQ	1.287 (0.837)	1.80	31.630** (14.848)	1.80
DIV	0.151 (0.650)	1.77	7.240 (12.045)	1.77
LEV	-0.108*** (0.030)	1.37	-1.493** (0.641)	1.37
TAX	-0.305*** (0.090)	1.41	-4.598** (1.759)	1.41
NPA	-0.109*** (0.033)	4.00	-1.850*** (0.587)	4.00
CAR	0.042** (0.016)	2.80	0.327 (0.330)	2.80
Constant	1.882** (0.907)		43.653** (16.376)	
Model	Fixed Effects		Fixed Effects	
Adjusted R^2	82		77	
F Test	3.92**		4.18**	
BP-LM	31.72**		21.28**	
Hausman	41.89**		108.05**	
IM White	347.49**		353.79**	
Wooldridge	8.26		7.42	
Observations	519		519	

Perusing Table 2 it can be stated that coefficient on lagged LnAS reveals negative insignificant relationship between asset size and ROA and significant negative impact of ROE. This can be explained as inefficient use of assets to generate profits or maybe costs outweigh revenues or banks cannot benefit from economies of scale to certain level and after that its cost more money to take advantage of economies of scale. Asset quality a negative and significant relationship is shown between asset quality and ROA and ROE. This impact is due to increase in loss loan provisions that decreases the profitability of commercial banks in India. Liquidity has positive insignificant impact on ROA while significant positive impact on ROE. The higher number of loans increases the income and improves the profitability of commercial banks in India. Diversification has positive insignificant impact on ROA and ROE. This is explained as the bank's reduction of costs through economies of scope and improving the profitability. Banks with diversified business activities have higher profitability.

Further, financial leverage has significant negative impact on ROA and ROE. Banks are using debt to finance the growth. It is pertinent to mention that taxation has significant negative impact on ROA and ROE. The large volume of taxes affects the profitability of the Indian commercial banks. NPA also has significant negative impact on ROA and ROE. The increase in the non-performing assets creates various problems for banks and reflect poorly on the profitability. The significant positive impact of CAR on ROA and positive insignificant impact on ROE, outlines the efficiency of banks in managing creditworthiness. It also underlines the strict implementation of Basel norms by commercial banks in India to maintain optimum level of capital supported by assets.

1. Findings and conclusion

The findings indicate that over the period understudy, commercial banks in India have remained profitable to the larger part of the time period understudy. Nevertheless, banks have also faced losses sometimes suggesting that profitability of the banks is fluctuating on numerous parameters. The reasons include the bank, industry, macroeconomic explanations and the major unprecedented events likewise leave their mark on the profitability of commercial banks in India. The findings of the present study are further summarized as under:

- LnAS has negative relationship with profitability which is varied across specification. The reasons for negative results are banks are not able to take better investment decisions which affect the profitability.
- Among bank predictors asset quality across all specification reveal negative impact on ROA and ROE thus the negative returns on investments are not in favor of banks. The banks in India are more exposed to riskier loans turning into NPA's and affecting the profitability.
- The findings indicate that positive relationship exists between the liquidity and profitability of banks most of the times across the specifications. This is explained by the fact that better liquidity in banks allow them to take better investment decisions and increase the profitability.
- We find positive impact of diversification on the profitability of banks across all specifications. This implies that banks are generating income from various sources and positively affecting the profitability of banks.
- The negative impact of LEV on ROA and ROE indicates that banks are highly leveraged. The increase in financial leverage the value of assets and equity decreases and banks are financing their growth with debt.
- Tax and non-performing assets indicate negative impact on all of the profitability proxies. The fact that taxes are paid after realizing profits and reduces the total profitability. With regard to NPA the impact is negative on all specifications as commercial banks in India are dealing with high NPA ratio which stands at 2.39 times of total assets. This results further elaborates that some banks are not facing the NPA problem meanwhile others have huge NPA amounting on their assets.
- Among the bank predictors across the specifications, CAR has a positive impact on profitability of commercial banks in India though its insignificant most of the times. This reflects the ability of banks to maintain optimum level of capital supported by assets.

Suggestions

- The assets size has negative relationship with profitability. Thus, banks should increase the assets to

certain level as holding cost increase with increase in assets.
- Banks need to invest funds in more productive avenues and minimize diversion of funds to loss loan provisions.
- Banks have shown better position in terms of liquidity thus short-term liabilities are covered quickly and also in terms of CAR. This needs to be consolidated at current level.
- The proper blend of debt-equity mixture as more use of debt attracts high premiums and decreases the profitability of banks.
- Mounting NPA needs to be kept under check (credit risk) and banks must not rely on government for bailout packages. A through review of creditworthiness of borrowers must be assessed.
- Government must also lower corporate taxes so that corporate loans are not reduced and profitability is not affected.

Conclusion

The primary objective of this study is to provide a better understanding of the impact of multi-level predictors on the profitability of commercial banks in India. The sample of the study includes 37 banks, covering 18 public and 19 private banks that come under database of RBI. The study covers a period of 15 years (2006-2020). Given that there are relevance and benefits attached to bank level predictors, industry level predictors, macroeconomic predictors and some major events, there are potential reasons to believe that significant impact is implied on profitability of commercial banks in India. Accordingly, the study attempted to answer certain questions like; if bank predictors, have significant impact on profitability.

To investigate the above phenomenon, the profitability of banks has been taken as the dependent variable and has been measured by return on assets (ROA'), return on equity (ROE). On the other hand, bank level predictors have been taken as the independent variables which includes assets size (LnAS), asset quality (AQ), liquidity (LIQ), diversification (DIV), financial leverage (LEV), taxation (TAX), non-performing assets (NPA), and capital adequacy ratio (CAR). The study highlights the need for a multifaceted approach to improve the profitability of commercial banks in India. This includes maintaining asset to the level where holding cost does not negatively impact the profitability, reducing tax, NPA and improving the asset quality.

References

1. Almaqtari FA, Al-Homaidi EA, Tabash MI, Farhan NH. The determinants of profitability of Indian commercial banks: A panel data approach. International Journal of Finance & Economics, 2018, 1–18.
2. Bougatef K. Determinants of bank profitability in Tunisia: does corruption matter? Journal of Money Laundering Control,2017:20(1):70–78.
3. Bouzgarrou H, Jouida S, Louhichi W. Bank profitability during and before the financial crisis: Domestic vs. foreign banks. Research in International Business and Finance, 2017.
4. Chowdhury MAF, Rasid MESM. Determinants of performance of Islamic banks in GCC countries: Dynamic GMM approach. Advances in Islamic Finance, Marketing, and Management,2017:49–80.
5. Dietrich A, Wanzenried G. The determinants of commercial banking profitability in low-, middle-, and high-income countries. Quarterly Review of Economics and Finance,2014:54:337–54.
6. Ghosh S. Does productivity and ownership matter for growth? Evidence from Indian banks. International Journal of Emerging Markets,2016:11(4):607–631.
7. Hausman JA. Specification tests in econometrics. Econometrica,1978:46(6):1251–1271.
8. Louzis DP, Vouldis AT, Metaxas VL. Macroeconomic and bank-specific determinants of non-performing loans in Greece: A comparative study of mortgage, business and consumer loan portfolios. Journal of Banking and Finance,2012:36(4):1012–1027.
9. Masood O, Ashraf M. Banks' specific and macroeconomic profitability determinants of Islamic banks. Qualitative Research in Financial Markets,2012:4(2/3):255–68.
10. Mendonça HF, Silva RB. Effect of banking and macroeconomic variables on systemic risk: An application of ΔCOVAR for an emerging economy. North American Journal of Economics and Finance,2018:43:141–57.
11. Menicucci E, Paolucci G. The determinants of bank profitability: empirical evidence from European banking sector. Journal of Financial Reporting and Accounting,2016:14(1):86–115.
12. Perera A, Wickramanayake J. Determinants of commercial bank retail interest rate adjustments: Evidence from a panel data model. Journal of International Financial Markets, Institutions & Money,2016:45:1–20.
13. Ramlan H, Adnan MS. The profitability of Islamic and conventional bank: Case study in Malaysia. Procedia Economics and Finance,2016:35:359–367.
14. Robin I, Salim R, Bloch H. Financial performance of commercial banks in the post-reform era: Further evidence from Bangladesh. Economic Analysis and Policy,2018:58:43–54.
15. Rjoub H, Civcir I, Resatoglu NG. Micro and macroeconomic determinants of stock prices: The case of Turkish banking sector. Romanian Journal of Economic Forecasting,2017:20(1):150–66.
16. Sinha P, Sharma S. Determinants of bank profits and its persistence in Indian banks: A study in a dynamic panel data framework. International Journal of System Assurance Engineering and Management,2016:7:35–46.
17. Tabash MI, Dhankar R. The flow of Islamic finance and economic growth: Empirical evidence of Middle East. Journal of Finance and Accounting,2014:2(1):11–19.
18. Tan Y. The impacts of risk and competition on bank profitability in China. Journal of International Financial Markets, Institutions & Money,2016:40:85–110.
19. Tiberiu C. Banks' profitability and financial soundness indicators: A macro-level investigation in emerging countries. Procedia Economics and Finance,2015:23:203–209.