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DETERMINANTS OF SOUTH ASIAN PUBLIC SECTOR BANK'S PROFITABILITY: A PANEL DATA ANALYSIS

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INTRODUCTION

The banking sector assumes a significant role in the facilitation of savings mobilisation and the stimulation of economic expansion and advancement within a nation. Banks are financial entities that provide monetary supportto parties in need of funding. Simultaneously, they generate profits by generating or accumulating more funds than they spend. Financial institutions act as key players in the economy by serving many significant tasks. These duties include enhancing the allocation of capital, facilitating the efficient management of savings and borrowings, as well as offering a secure repository for public monies. According to Jaswal and Aggarwal (2021), the banking industry in South Asia also has considerable importance in fostering economic growth. The banking industry in South Asia has had considerable influencefrom the processes of liberalisation, privatisation, and globalisation, as well as financial sector reforms. The phenomenon of diversification has been seen via its persistent occurrence across various geographical regions, corporate sectors, product offerings, and the adoption of technological advancements. The resilience of the South Asian banking sector has improved over time due to various regulatory initiatives and reform measures, enabling it to endure unfavorable economic and financial circumstances on several occasions (Brahmaiah, 2018; Taskinsoy, 2013). Reforms were implemented, including the liberalising of the rate ofinterest, the weakening of engaged credit restrictions, the decreasing of the marketliquidness requirement and cash reserve ratio (CRR), the adoption of a liberal licensing rule for new banks, and the relaxation of entrance obstacles for international companies. The process of deregulation was initiated, enabling the entry of new participants and the development of information technology, leading to heightened rivalry and a desire for improved goods and services. Numerous pioneering banking concepts, such as payment banks, small banks, payment and settlement systems, and digital wallets, have surfaced within the banking sector. According to Maiti and Jana (2017), Banks in South Asia are now facing issues due to the dynamic nature of the economy. The primary

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factors involve negative shocks, a noteworthy volume of NPAs, and maintenance of financial stability.

While it is acknowledged that banks have made significant strides in adopting new technologies (Kaur et al., 2018), It is essential to acknowledge that they are also driven by the objective of generating profit on their invested capital. The mainbasisfor revenue for a bank is derived from service fees and income generated by its asset portfolio, as noted by Lopez et al. (2020), and Molyneux et al. (2019). The prime financial outlay for a bank is the payment of interest on its liabilities, as noted by Maana et al. (2008) and Feldstein (1998). Bank profitability is a key metric used to assess the overall effectiveness of a financial organization. The advent of new international banks and payment banks in the financial landscape of South Asia has led to a rise in competition, posing issues for incumbent banks in managing their profitability. The primary purpose of this study is to determine the variables that affect the profitability of South Asian banks. To achieve the intended objective, an analysis of the data spanning from the years 2010-11 to 2020-21 has been conducted. Numerous investigations have been carried out to look at banks' profitability, including those by Yüksel et al. (2018), and Lartey et al. (2013). Several studies have focused on specific countries and have not utilised panel data to examine the factors influencing profitability. For instance, Tan et al. (2017) and Duraj and Moci (2015) employed ROA as a profitability measure, while Damodaran (2007) concentrated on ROE as a profitability indicator. There has been variance seen in many parameters as well. Several research have examined internal factors, while others have explored external variables (Tan et al., 2017). The available literature, as discussed in the section below, indicates a lack of research conducted in the South Asian context. Consequently, it is essential to do research that investigates the determinants affecting the cost-effectiveness of banks in South Asia.

REVIEWS OF LITERATURE

According to Singh et al. (2021), The existence of a substantial amount of NPLs in a bank's portfolio is anticipated to lead to a decline in its profitability. This is due to the need for the bank to allocate a greater amount of funds to mitigate possible losses, as well as the higher costs incurred in the pursuit of loan recovery (Benami & Carter, 2021). Moreover, in the event of loan defaults by a bank's clientele, the bank may be compelled to classify these loans as non-performing assets, so adversely affecting its financial performance. The ROA metric is a complete measure of the profitability of a bank to considers both a bank's net income and its total assets (Dao, 2020). It has been widely regarded as a favourable pointer of bank efficacy (Sihotang et al., 2022) and is recognised for its comprehensive evaluation of profitability (Kusumastuti and Alam, 2019). The aforementioned

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sources (Puteri et al., 2022; Dang, 2019; Gupta et al., 2022; Pratiwi and Masdupi, 2021) Analyze many factors in the assessment of a bank's efficacy. These characteristics include the bank's ability to generate income from its assets, the bank's risk-adjusted returns, and the bank's efficiency. According to Pointer and According to Hasanov et al. (2018), several financial factors have the potential to impact the profitability of banks. The aforementioned ratios include ROA, ROE, AQ (Asset Quality), and NPLs (Non-Performing Loans). Each of these elements has the potential to exert either a favourable or unfavourable influence on a bank's financial performance.

A bank's profitability is positively correlated with its liquidity, as per the research of Anwari et al. (2022). In this sense, "liquidity" means that the bank can meet its short-term financial obligations. Golubeva et al. (2019) also found that liquidity ratios are positively correlated with banks' profitability. Moreover, according to Choirunnisak (2022), it may be argued that financial institutions with elevated liquidity ratios tend to enjoy the benefit of accessing funds at reduced expenses, while simultaneously capitalising on prospects to invest in assets that offer greater returns.

Several studies have shown that NPLs have impactedproductivity, mostly via a decrease in net interest income (NII) and a rise in provisioning expenses. According to Thach et al. (2021), the aggregate revenue of a financial institution is comprised of two primary sources: net interest income and NII. The primary income source for banks is often the former since it offers more stability and predictability compared to the latter. NII refers to the financial gain derived from a bank's lending operations, specifically denoting the discrepancy between the interest earned on deposits and that earned on loans (Brei et al., 2020). The NII is significantly influenced by factors such as the interest rate, loan volume, and loan quality. According to Brei et al. (2020), The size of the loan volume has a positive correlation with the bank's net interest income and profitability, whereas the nonperforming loan percentage has a negative correlation with the same variables. In contrast, provisioning costs are deducted from NII before the computation of the bank's pre-tax profit. According to Elekdag et al. (2020), there is an inverse relationship between provisioning expenditures and net interest income (NII), wherein greater provisioning expenses correspond to lower NII. NPLs also have a detrimental influence on a bank's EBITDA as well as earnings before interest and taxes. NPLs have a detrimental impact on both EBITDA and EBIT due to their contribution to the overall rise in total operational expenditures (Siahaan, 2021). The presence of non-performing loans has been observed to negatively affect the financial performance metrics of banks, specifically the ROA & ROE (Altavilla et al., 2022).

A small amount of research especially investigates the correlation between the Capital Adequacy Ratio and the profitability of the banking sector. Yao and Song (2021) performed

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an analysis in their research on the current state and regulatory framework of the capital adequacy of Chinese state commercial banks. Their findings indicate that augmenting capital adequacy ratios (CAR) are consistently seen as advantageous, with the utilisation of subordinated debt emerging as the most viable approach for meeting supplementary capital requirements. According to Boateng's (2019) findings, many important indices of bank performance, including "profitability, asset quality, management effectiveness, earning quality, liquidity, and sensitivity", have been identified as Determinants that affect the capital adequacy standards of the banking sector. Madugu et al. (2020) found that although larger banks have an increase in profitability and lending preferences, there is a corresponding decline in capital adequacy. Consequently, large financial institutions have diminished levels of capital adequacy ratios. Moreover, there exists a negative correlation between profit and capital sufficiency. The key determinants of the bank capital ratio are also shown by Yu (2000) and Abate and Mesfin (2019).

Prior research has shown limitations in terms of its breadth and has not extensively explored the interconnectedness among the factors examined in the current study. The anticipated outcome of the project is expected to provide scholars, practitioners, and policymakers with significant insights into the assessment and management of bank profitability.

DATABASE AND RESEARCH METHODOLOGY

For this study,12 banks from 7 South Asian countries including Bangladesh, Bhutan, India,the Maldives, Nepal, Pakistan, and Sri Lanka,"have been selected as a sample representing the banking in South Asia. The data were collected for the period of 2014-15 to 2023-24 from the annual reports, and CMIE Prowess database. For data analysis, the Panel data regression analysis method is used with E-views software to find out the profitability predictors in the banks in South Asia. The variables selected are as follows:

Variable's specification

Dependent variables

Net Profit (NP): NP is used here as a profitability indicator as well as dependent variables.

Independent variables

ROA: It is computed by dividing net income by average total assets.

ROE: It is measured by net income divided by average total equity.

NPLs: The ratio of NPLs (gross loan value as documented on the balance sheet) to the entire loan portfolio value (inclusive of nonperforming loans before loan loss provision deductions).

ISSN : 0972-8945 (Print) | 3048-6165 (Online)

Assets Size (ASSIZ): It measures a banking company's total assets.

AQ: It is rating refers to the assessment of credit risk associated with a particular asset, such as a bond or stock portfolio.

CAR: CAR is the proportion of a bank's capital relative to its risk-weighted assets and current liabilities.

Empirical model

NPit = ß0 + ß1ROAit+ ß2ROEit + ß3 NPLit + ß4 ASSIZit +ß5 AQit +ß6 CARit + uit

Where i presentthe specific bank;

t is the examined time period;

NPit stands for the Net profit of the Banks i at the time t;

1, ß2, ß3, ß4, ß5 and ß6 are coefficients of the independents variables;

ROAit is the Return on assets of bank i at time t;

ROEit is the Return on equity of a bank i at a time t;

NPLit is the NPL ratio of bank i at time t;

ASSIZit is the Assets size in Log10 of bank i at time t;

AQit is the Assets Quality of bank i at time t;

CARit is the Capital Adequacy ratio of bank i at time t.

ANALYSIS AND DISCUSSION

In order to find the profitability predictor in the banks (PSB) in South Asia, the following hypothesis was developed:

H_{01}: The ROA is not significant in predicting the profitability of the PSB in South Asia.

H_{02}: The ROE is not significant in predicting the profitability of the PSBin South Asia.

H_{03}: The NPL is not significant in predicting the profitability of the PSBin South Asia.

H_{04}: The is ASSIZnot significant to predict the profitability of the PSBin South Asia.

H_{05}: The is AQ not significant to predict the profitability of the PSBin South Asia.

H_{06}: The is CAR not significant to predict the profitability of the PSBin South Asia.

Panel data regression is used to ascertain the major characteristics that predict the profitability of banks in South Asia, specifically analysing their influence on net profit. In the Panel data regression, the Net Profit of the Banks is the Dependent variable and other predictors are treated as independent variables. For this purpose, the following steps are used:

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Step I: We first run the POLS with the Eviews-12 software. The result of the POLS was revealed in various steps first we checked the validity of the regression model where we applied the Breusch-Pagan test. This test reveals whether the panel data regression model developed above is the final model or we have to go for the random effect and if required the FEM. The Breusch-Pagan test measures that the PLOLS is more appropriate than the Fixed effect model / Random Effect Model, results with significant results in time-based differences (p>0.05) means the Effect of Different Cross Sections or Intercept is required and we cannot accept the results of the POLS. With the p Value (0.6913) it is clear that we have to reject the result of the POLS. We may so conclude that the null hypothesis is falsemeans that the OLS is found unstable and we need to use the first Random Effect for our regression.Once the results are retained to measure the validity of the model the Hausman Test is used. This test reveals that whether the panel data REM developed above is the final model or we have to go for the FEM. The null hypothesis of the REM is that the REM is more appropriate than FEM. The cross-sectional is random with a chi-square value of 69.619199 with a Probability of 0.000 (p<0.05) revealing that the null hypothesis is rejected and means that REM is not the final model. Thus, the FEM is performed. The H0 of the model is that REM is preferred while the alternative is that the FEM is preferred over the REM. Here the Alternative hypothesis is accepted so the FEM is developed. The results are presented as under:

Table 1: Descriptive and Regression Model Results

Dependent Variable: NET_PROFIT					
	β				
Variable	POLS	REM	**FEM**	T-stat	Prob
C	13960.80	13960.80	5084.27	0.63848	0.5244
ROA	-59868.95	-59868.95	-31579.44	-1.7370	0.0851
ROE	39.52094	39.52094	34.9336	6.4199	0.000
NIM	333682.9	333682.9	180608.3	2.2786	0.0245
ASSIZ	-2957.309	-2957.309	-1166.75	-0.810281	0.4195
ASSQUAL	-21856.21	-21856.21	-20505.44	-1.593164	0.1139
CAPADEQ	-56433.19	-56433.19	-45781.48	-1.4547	0.1485
Cross-section fixed (dummy variables)					
Breusch-Pagan	58.79508 (0.000)				
Hausman Test	69.619199 (0.000)				
R^2	0.677094				
Adjusted R^2	0.632168				
S.E.	2917.425				
F-value	15.07133				
Prob of F	0.000				

The results of the panel are accepted with the value of Adjusted R square of 63.21 percent,

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the model is found to fit with the F value of 15.07 and sig value of 0.000<0.05, found significant. Thus, we can say that the profitability in banking firms is measured by the ROE and NIM.

DISCUSSIONS AND FINDINGS

The existing body of literature indicates that determining the profitability elements of the banking industry lacks a conclusive solution. This matter is contingent upon several variables, such as the financial condition and performance of individual banks (Demirgüç-Kunt et al., 2021). In a broader context, it can be seen that a greater return on equity (ROE) often signifies enhanced profitability and operational efficiency inside a bank, hence potentially rendering it a more favorable investment alternative (Buallay, 2018).

The ROE is a measure of the internal performance of shareholders' value. The quality of assets reflects the amount of efficiency with which an investment manager manages and monitors credit risk, which significantly impacts the assigned grade. To enhance their profitability, public banks must focus on improving their CAR and reducing their NPA. The Basle Committee on Banking Supervision established a set of fundamental principles for efficient banking supervision, consisting of twenty-five concepts. Among these principles, seven specifically aim to tackle the pertinent concerns related to bank asset quality and credit risk management (Basle, 1997).

The paper's findings indicate that the ROE serves as a predictor of profitability. Specifically, the ROE exhibits a positive association with profitability, whereas NPLs demonstrate a negative link. This implies that the average efficiency ratings of South Asian banks exhibited superior performance in comparison to the global average. According to Mor and Gupta (2021), it has been observed by researchers that banks in South Asiaexhibit a lower level of efficiency compared to Private sector banks. Thaker et al. (2022) have highlighted three significant concerns about the forecast of future profitability in banks, namely the ROA, NPLs, and CAR. According to Haralayya and Aithal (2021), several banks have shown exceptional performance in terms of their interest income to total assets ratio. Several studies have previously highlighted the importance of capital adequacy. However, to have a deeper understanding of the subject, it is important to examine pertinent research. Hussain et al. (2022) did a research study that studied the effect of parameters such as ROA, ROE, AQ, LQR, NPLs, and CAR on profitability. In the banking business, Obadire et al. (2022) assert that sufficient capitalization plays a pivotal role. Insured institutions must also ensure the provision of sufficient capital to provide a cushion capable of withstanding any potential future losses. Furthermore, it is essential to ensure sufficient financial resources are allocated towards bank operations and expansion, with the primary

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objective of safeguarding the interests of shareholders and depositors by maintaining the security and stability of their deposits. Mbaeri et al. (2021) define adequate capital as the capital level that is capable of absorbing losses efficiently and so preventing the collapse of bank operations. Furthermore, it is necessary to adjust the capital amount in cases when there is an expectation of an increase in both operational expenses and withdrawal requirements. The study conducted by Bussière et al. (2021) examined the impact of bank capital adequacy laws on the monetary transmission mechanism. It has been observed that the effectiveness of the monetary transmission mechanism is diminished in cases when banks have insufficient capital or when the capital adequacy criterion is inflexible. The discovery was made using a general equilibrium framework. Köten (2022) conducted a study to examine the determinants of CAR in Jordanian commercial banks. Based on the findings of the research, it was seen that the CAR experienced a positive influence from factors such as return on assets, loan-to-assets ratio, risky assets ratio, and dividend payout ratio. Conversely, the CAR was shown to be negatively affected by variables including deposit assets ratio, bank size, and loan provision ratio.

CONCLUSION

According to Vong and Chan (2009), there is a positive correlation between the quality of loans and the profitability of banks. To enhance their performance, banks should implement appropriate strategies aimed at improving their net interest margin. However, the degree to which these enhancements are to be implemented remains a matter of policy. To enhance profitability, financial institutions should endeavor to achieve a harmonious equilibrium between non-interest revenue streams. To optimize the operational efficiency of financial institutions, it is essential to mitigate the prevalence of non-performing assets (NPA) within the banking sector. It is recommended that the credit policy be characterized by stringent measures, while the debt collection strategy should possess sufficient strength to effectively mitigate the occurrence of bad debt.

The findings of the study also indicated that the Non-performing Loans exhibit negative beta values, suggesting their potential as predictors. This implies that the Banks should prioritize enhancing their Capital Adequacy Ratio (CAR), as shown in the studies conducted by Haryanto et al. (2020) which yielded comparable findings. According to Sofyan (2019), there is a clear relationship between the growing Capital Adequacy Ratio (CAR) and the growth in Return on Assets (ROA), which eventually leads to increased profitability. Additionally, lowering Non-Performing Assets (NPA) further contributes to increased profitability. These findings exhibit similarities with previous research conducted by Agarwala and Agarwala (2019). Therefore, it may be argued that to enhance their profitability, public

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banks must focus on improving their Capital Adequacy Ratio (CAR) and reducing their Non-Performing Assets (NPA). Rajaratnam et al. (2011) conducted an analysis of many significant indicators, such as interest income to total funds, cost of deposit, and profit per employee, to assess the performance of South Asian banks during the ongoing crisis in the global financial system. Empirical evidence of the impact of financial liberalisation on the performance of South Asian banks was obtained by examining the costs and profitability of their behavior throughout the liberalisation period. The findings corroborate the findings of previous studies conducted by Endri (2018) which align with the results of Sari and Endri (2019). However, the study by Al Nimer et al. (2015) indicates that bank profitability is not contingent upon the return on assets (ROA), but rather on liquidity.

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