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Dynamics of Banking Profitability in Asia: A Comparative Study of ROA, ROE, and NIM in Southeast Asian and South Asian Banks, 2016–2025

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Abstract

This study examines whether bank performance differs between Southeast Asia and South Asia during 2016–2025. Using a quantitative comparative design, the study analyzes 172 banks consisting of 78 Southeast Asian banks and 94 South Asian banks after outlier treatment. Bank performance is measured using return on assets (ROA), return on equity (ROE), and net interest margin (NIM), while non-performing loans, Tier 1 ratio, loan-to-deposit ratio, cost-to-income ratio, and bank size are used as bank-specific explanatory variables. Independent-samples t-tests show that ROA and NIM do not differ significantly between the two regions, whereas ROE differs significantly, with South Asian banks reporting higher average ROE. The findings indicate that regional performance differences are more visible in shareholder return than in asset productivity or interest intermediation. The study contributes to comparative banking literature by showing that bank performance across regions is multidimensional and must be interpreted alongside risk, capital, and institutional context.

Keywords: bank performance; ROA; ROE; NIM; Southeast Asia; South Asia

1. Introduction

Banks play a strategic role in modern economies because they perform financial intermediation, support payment systems, allocate credit, and contribute to financial stability. The performance of banks has become increasingly important in the post-pandemic period, when financial institutions have faced inflationary pressure, rising interest rates, credit-quality deterioration, and tighter capital expectations. Bank profitability is not determined only by the ability to generate interest income, but also by asset quality, cost efficiency, liquidity management, capital adequacy, bank size, and macroeconomic conditions. Recent banking studies have shown that indicators such as return on assets (ROA), return on equity (ROE), and net interest margin (NIM) remain central measures for assessing bank profitability and intermediation efficiency (Mehzabin et al., 2023; Nasreen et al., 2026; Yuan et al., 2022).

The comparison between Southeast Asian and South Asian banks is important because the two regions operate under different economic, regulatory, and institutional environments. Southeast Asia is relatively supported by ASEAN financial integration, more established banking systems in several economies, and rapid digital banking development. In contrast, South Asia continues to face challenges related to asset quality, credit risk, financial inclusion, and operational efficiency. These differences may create variations in bank performance, particularly in profitability, equity return, and intermediation margin. However, the extent to which these regional differences are reflected in ROA, ROE, and NIM remains an empirical question.

Existing literature has examined bank profitability from several perspectives. Yuan et al. (2022) investigated commercial banks in South Asian countries and found that liquidity, bank size, capital ratio, ROE, NIM, and non-performing loans are important determinants of profitability. Mehzabin et al. (2023) showed that capital structure, operating efficiency, and non-interest income influence bank profitability in Asia. Nasreen et al. (2026) emphasized the role of bank-specific, macroeconomic, and institutional factors in explaining banking sector performance in South Asian economies. Studies such as Nguyen (2025) and Ozili (2025) further highlight the importance of credit quality and non-performing loans in shaping bank profitability and stability. Although these studies provide important insights, most of them focus on one country, one region, or

determinants of profitability rather than direct cross-regional performance differences.

The research gap lies in the limited empirical evidence comparing bank performance between Southeast Asia and South Asia within a single analytical framework. Previous studies have commonly used regression-based approaches to explain profitability determinants, but fewer studies have examined whether average performance indicators differ significantly between these two regional banking systems. Moreover, limited studies use a long observation period covering the pre-pandemic, pandemic, and post-pandemic recovery phases. This study addresses this gap by comparing bank performance between Southeast Asia and South Asia using ROA, ROE, and NIM during 2016–2025.

The novelty of this study is its comparative regional focus and its simultaneous use of three core profitability indicators. Instead of treating profitability as a single construct, this study distinguishes between asset productivity, shareholder return, and interest intermediation. This distinction is important because banks may display similar ROA and NIM but different ROE due to differences in leverage, equity structure, risk exposure, and capital adequacy. Therefore, this study provides a more nuanced interpretation of regional banking performance.

This study aims to analyze whether there are significant differences in ROA, ROE, and NIM between banks in Southeast Asia and South Asia during 2016–2025. It also considers non-performing loans, Tier 1 ratio, loan-to-deposit ratio, cost-to-income ratio, and bank size as bank-specific explanatory variables to support the interpretation of the results. The study contributes theoretically by extending financial intermediation theory, risk-return trade-off theory, and the CAMELS-based bank performance framework in a comparative regional context. Practically, the findings provide insights for regulators, bank managers, investors, and policymakers in evaluating bank profitability, credit risk, capital strength, and regional competitiveness.

2. Literature Review and Theoretical Framework

This study is grounded in financial intermediation theory, risk-return trade-off theory, and the CAMELS-based bank performance framework. Financial intermediation theory explains that banks collect funds from surplus units and allocate them to deficit units through loans and other productive assets. Through this function, banks generate income, transform liquidity, and support economic activity. However, the intermediation process also exposes banks to credit risk, liquidity risk, capital risk, and operational inefficiency. These risks influence profitability and financial stability (Mishkin, 2019; Saunders & Cornett, 2021). In this study, ROA, ROE, and NIM represent the outcomes of bank intermediation, while NPL, Tier 1 ratio, LDR, CIR, and bank size represent the internal characteristics that may explain performance differences.

Risk-return trade-off theory provides a second theoretical foundation. The theory suggests that higher returns may be associated with higher risk, but excessive or unmanaged risk can reduce profitability. In banking, the relationship between risk and return is particularly relevant because banks may generate higher ROE through leverage or riskier lending, but such performance may be vulnerable if credit quality deteriorates. Therefore, ROE must be interpreted together with NPL and capital adequacy. This framework is relevant for comparing Southeast Asian and South Asian banks because the two regions differ in asset quality, capital strength, and institutional development.

The CAMELS framework complements these theories by evaluating bank performance through capital adequacy, asset quality, management efficiency, earnings, liquidity, and sensitivity to risk. In this study, Tier 1 ratio represents capital adequacy, NPL represents asset quality, CIR represents management efficiency, ROA/ROE/NIM represent earnings, and LDR represents liquidity. Bank size and region capture scale and contextual differences. This integrated framework allows the study to interpret bank performance not only as a profitability outcome but also as the result of risk management, capital structure, liquidity, and operational efficiency.

ROA measures the ability of banks to generate profit from total assets. It reflects asset productivity and management effectiveness in converting assets into earnings. A higher ROA indicates more efficient use of assets. ROE measures the ability of banks to generate returns for shareholders and is affected by profitability, equity structure, and leverage. A higher ROE may indicate stronger shareholder return, but it can also reflect higher leverage or lower capital buffers. NIM measures the ability of banks to generate net interest income from earning assets. It reflects the efficiency of the traditional intermediation function, especially the spread between interest income and interest expense.

NPL represents credit risk and asset quality. Higher NPL indicates a larger proportion of problematic loans, which can reduce interest income, increase provisioning costs, and weaken profitability. Nguyen (2025) found that non-performing loans are closely related to bank profitability in Vietnam, while Ozili (2025) emphasized that NPLs remain a central issue in global banking research. Tier 1 ratio measures core capital strength and the ability of banks to absorb losses. Stronger capital improves resilience but may reduce ROE if equity is relatively high. LDR reflects liquidity and intermediation intensity. A higher LDR may indicate more active lending, but excessive LDR can increase liquidity risk. CIR measures operational efficiency; a higher CIR indicates higher operating costs relative to income and may reduce profitability.

Bank size reflects scale, asset capacity, diversification potential, and market reach. Larger banks may benefit from economies of scale, although excessive size may create managerial complexity.

Previous empirical studies provide support for these relationships. Yuan et al. (2022) used panel data analysis to examine commercial banks in South Asian countries and found that liquidity, bank size, deposit ratio, capital ratio, ROE, NIM, and NPL were associated with bank profitability. Their findings are relevant because they show that profitability in South Asia is shaped by both bank-specific factors and risk-related variables. Mehzabin et al. (2023) examined banks in Asia and found that operating efficiency, capital structure, and non-interest income influence profitability. Their study supports the inclusion of CIR and capital-related variables in the present study.

Nguyen (2025) analyzed the relationship between NPL and bank profitability in Vietnam and found that credit quality plays a critical role in explaining bank performance. This is relevant to the present study because differences in NPL between Southeast Asia and South Asia may help explain differences in profitability indicators. Nasreen et al. (2026) examined banking sector performance in South Asian economies and found that bank-specific, macroeconomic, and institutional factors influence ROA, ROE, NIM, and bank stability. Their findings strengthen the argument that regional and institutional contexts matter in banking performance analysis.

Ma'aji et al. (2026) investigated the role of bank capital, liquidity, and credit in frontier banking markets and showed that risk-related variables are important in explaining profitability. This supports the use of risk-return trade-off theory in interpreting bank performance. Kharabsheh (2026) also found that bank-specific, industry-specific, and macroeconomic variables influence profitability, including capital adequacy, liquidity, and size. Sitnicka et al. (2025) emphasized that profitability determinants vary across regions and income groups, supporting the relevance of regional comparison in banking research.

Despite these contributions, several gaps remain. First, many studies focus on one country or one region, limiting cross-regional comparison. Second, previous studies often examine profitability determinants through regression models, while direct differences in ROA, ROE, and NIM between Southeast Asia and South Asia remain underexplored. Third, limited studies use a long period that includes pre-pandemic, pandemic, and post-pandemic recovery phases. Fourth, prior studies often treat profitability as a single concept, while this study distinguishes asset productivity, shareholder return, and interest intermediation. This distinction enables a more precise understanding of how regional banking performance differs.

3. Hypothesis Development

The first hypothesis concerns the difference in ROA between Southeast Asian and South Asian banks. ROA reflects the ability of banks to generate income from assets. Because banks in different regions operate under different regulatory environments, market structures, credit conditions, and institutional frameworks, their asset productivity may differ. Financial intermediation theory suggests that differences in intermediation quality and asset management should be reflected in ROA. Therefore, the first hypothesis is formulated as follows:

H1a: There is a significant difference in ROA between banks in Southeast Asia and South Asia.

The second hypothesis concerns the difference in ROE. ROE reflects shareholder return and is strongly affected by leverage, equity structure, capital adequacy, and profitability. Risk-return trade-off theory suggests that banks with different risk exposures and capital structures may generate different equity returns. If South Asian and Southeast Asian banks differ in credit risk and capital strength, their ROE may also differ. Therefore, the second hypothesis is formulated as follows:

H1b: There is a significant difference in ROE between banks in Southeast Asia and South Asia.

The third hypothesis concerns the difference in NIM. NIM reflects the efficiency of interest-based intermediation. Differences in funding costs, lending rates, credit risk, and market competition may create different NIM levels across regions. Since Southeast Asia and South Asia have different financial market structures and banking environments, NIM may differ between the two groups. Therefore, the third hypothesis is formulated as follows:

H1c: There is a significant difference in NIM between banks in Southeast Asia and South Asia.

Figure 1. Research Model

Figure 1 illustrates the research model used in this study. Region is positioned as the main grouping variable to compare bank performance between Southeast Asia and South Asia. Bank performance is measured using ROA, ROE, and NIM, while NPL, Tier 1 Ratio, LDR, CIR, and Bank Size are treated as bank-specific variables to support the interpretation of regional performance differences.

4. Research Method

This study uses a quantitative comparative design with an ex post facto approach. The quantitative design is appropriate because the variables are measured using numerical financial ratios. The comparative design is used because the study aims to examine differences in bank performance between two independent regional

groups: Southeast Asia and South Asia. The ex post facto approach is appropriate because the study analyzes historical financial data without manipulating the research objects.

The empirical setting covers banks operating in Southeast Asia and South Asia. Southeast Asia consists of Indonesia, Malaysia, Singapore, Thailand, the Philippines, and Vietnam, while South Asia consists of India, Pakistan, Bangladesh, Sri Lanka, and Nepal. The observation period is 2016–2025, covering pre-pandemic conditions, the COVID-19 pandemic period, and post-pandemic recovery.

The population consists of 205 banks available in the Osiris database, including 94 Southeast Asian banks and 111 South Asian banks. The sampling technique is purposive sampling. The sample criteria include banks located in the selected countries, availability of financial data during 2016–2025, and availability of variables required for ROA, ROE, NIM, NPL, Tier 1 ratio, LDR, CIR, and bank size. After applying outlier treatment using the 1.5 IQR method by region for ROA, ROE, and NIM, 33 banks were excluded. The outlier treatment was applied separately by region to ensure that extreme values within each regional group did not distort the mean-difference analysis. This procedure is important because banking ratios such as ROA, ROE, and NIM may contain extreme observations due to differences in bank size, market structure, and financial conditions. After the outlier treatment, the final sample remained sufficient for independent-samples t-test analysis.

The final sample consists of 172 banks, including 78 banks from Southeast Asia and 94 banks from South Asia after applying the outlier treatment. The distribution of the final sample by region and country is presented in Table 1.

Table 1. Sample Distribution by Region and Country

Region	Country	Number of Banks
Southeast Asia	Indonesia	28
Southeast Asia	Malaysia	6
Southeast Asia	Singapore	3
Southeast Asia	Thailand	7
Southeast Asia	Philippines	13
Southeast Asia	Vietnam	21
Total Southeast Asia		**78**
South Asia	India	30
South Asia	Pakistan	11
South Asia	Bangladesh	23
South Asia	Sri Lanka	11
South Asia	Nepal	19
Total South Asia		**94**
Total Sample		**172**

Table 1 shows that Indonesia contributes the largest number of banks in Southeast Asia, while India contributes the largest number of banks in South Asia. This distribution reflects the availability of banking data in the selected countries after the outlier treatment. Data were obtained from Osiris and processed using the average value of each variable for each bank during 2016–2025. This procedure was used to avoid repeated observations in the two-group comparison. The data collection technique was documentation, using secondary financial data from the database. The main instrument was a financial data documentation sheet containing regional classification and bank financial ratios. The operational definitions of variables are presented in Table 2.

Table 2. Operational Definition of Variables

Variable	Definition	Measurement
Region	Regional classification of banks	Southeast Asia and South Asia
ROA	Ability to generate profit from total assets	ROA using P/L before tax (%)
ROE	Ability to generate profit from equity	ROE using P/L before tax (%)
NIM	Ability to generate net interest income from earning assets	Net interest margin (%)
NPL	Credit risk and asset quality	Impaired loans/gross loans (%)
Tier 1 Ratio	Core capital adequacy	Tier 1 ratio (%)
LDR	Liquidity and intermediation intensity	Net loans/deposits and short-term funding (%)
CIR	Operating efficiency	Total operating expenses/operating income × 100
Bank Size	Scale of bank operations	Natural logarithm of total assets

Data analysis was conducted using IBM SPSS Statistics. The analysis involved descriptive statistics, normality testing, homogeneity testing, and independent-samples t-tests. Descriptive statistics were used to summarize mean, standard deviation, and standard error. Normality was assessed using Kolmogorov-Smirnov and Shapiro-Wilk tests. Homogeneity of variance was assessed using Levene's test. If Levene's significance value was greater than 0.05, the equal variances assumed row was used. If the value was less than or equal to 0.05, the equal variances not assumed row or Welch t-test was used. The significance level was set at 5%.

The independent-samples t-test was used because the

main objective of this study is to examine whether the average bank performance differs significantly between two independent regional groups, namely Southeast Asia and South Asia. The use of the 2016–2025 average value per bank allows each bank to be treated as one unit of analysis and avoids repeated observations in the mean-difference test. However, this approach may reduce annual variation in bank performance. Therefore, to complement the t-test results, this study also provides a descriptive trend analysis of ROA, ROE, and NIM from 2016 to 2025. The trend analysis is intended to illustrate the yearly movement of bank performance, particularly during the pre-pandemic, pandemic, and post-pandemic recovery periods.

This study focuses on a comparative mean-difference approach using independent-samples t-test to examine whether average bank performance differs between Southeast Asian and South Asian banks. Therefore, macroeconomic variables are not included as control variables in the main statistical model. The purpose of the analysis is not to estimate the causal effect of macroeconomic factors on bank profitability, but to compare the average performance indicators between two independent regional groups. Nevertheless, macroeconomic conditions are acknowledged as important contextual factors in interpreting the results.

5. Results

The final sample consists of 172 banks, including 78 banks from Southeast Asia and 94 banks from South Asia. The descriptive statistics show that South Asian banks have slightly higher average ROA and substantially higher average ROE, while Southeast Asian banks have higher average NIM.

Table 3. Descriptive Statistics of Bank Performance

Variable	Region	N	Mean	Standard Deviation
ROA	Southeast Asia	78	1.246	0.713
ROA	South Asia	94	1.307	0.690
ROE	Southeast Asia	78	10.628	6.623
ROE	South Asia	94	15.055	8.355
NIM	Southeast Asia	78	3.635	1.440
NIM	South Asia	94	3.384	1.041

The descriptive results show that South Asian banks have slightly higher ROA and substantially higher ROE than Southeast Asian banks. In contrast, Southeast Asian banks have higher average NIM. However, descriptive differences do not necessarily indicate statistical significance; therefore, mean-difference testing is required.

Table 4. Normality Test

Variable	Region	Kolmogorov-Smirnov Sig.	Shapiro-Wilk Sig.	Decision
ROA	Southeast Asia	0.978	0.437	Normal
ROA	South Asia	0.980	0.796	Normal
ROE	Southeast Asia	0.524	0.239	Normal
ROE	South Asia	0.730	0.182	Normal
NIM	Southeast Asia	0.149	0.249	Normal
NIM	South Asia	0.835	0.854	Normal

All variables are normally distributed because each significance value is above 0.05. Thus, the normality assumption for independent-samples t-test is satisfied.

Table 5. Homogeneity of Variance Test

Variable	Levene Statistic	Sig.	Decision	Test Row Used
ROA	0.011	0.918	Homogeneous	Equal variances assumed
ROE	3.881	0.050	Homogeneous	Equal variances assumed
NIM	8.710	0.004	Not homogeneous	Equal variances not assumed

The results of Levene's test show that ROA and ROE meet the homogeneity assumption, with significance values of 0.918 and 0.050, respectively. Therefore, both variables were interpreted using the equal variances assumed row. In contrast, NIM does not meet the homogeneity assumption because its significance value is 0.004, which is below the 0.05 threshold. Therefore, NIM was interpreted using the equal variances not assumed row or Welch's t-test.

Table 6. Independent-Samples T-Test

Variable	t	df	Sig. (2-tailed)	Mean Difference	Decision
ROA	-0.565	170.00	0.573	-0.061	Not significant
ROE	-3.793	170.00	0.000	-4.427	Significant
NIM	1.283	136.96	0.202	0.251	Not significant

The independent-samples t-test results show that ROA does not differ significantly between Southeast Asian and South Asian banks, with $t = -0.565$ and $p = 0.573$. Thus, H1a is rejected. ROE differs significantly between the two regions, with $t = -3.793$ and $p < 0.001$, indicating that South Asian banks report higher average ROE; therefore, H1b is accepted. NIM does not differ significantly, with Welch's $t = 1.283$, $df = 136.96$, and $p = 0.202$; therefore, H1c is rejected.

Table 7. Difference Test of Bank-Specific Explanatory Variables

Variable	Mean Southeast Asia	Mean South Asia	Sig.	Decision	Higher Region
NPL	2.944	6.184	0.000	Significant	South Asia
Tier 1 Ratio	18.203	12.996	0.000	Significant	Southeast Asia
LDR	78.006	75.988	0.357	Not	Southeast

				significant	Asia
CIR	54.730	53.028	0.429	Not significant	Southeast Asia
Bank Size	32.646	31.974	0.018	Significant	Southeast Asia

The bank-specific explanatory variables results indicate that NPL, Tier 1 Ratio, and bank size differ significantly between the two regions. South Asian banks have significantly higher NPL, while Southeast Asian banks have significantly higher capital strength and larger bank size. LDR and CIR do not differ significantly, suggesting that liquidity and operating efficiency are relatively similar across the two regions.

5.1 Trend Analysis of Bank Performance, 2016–2025

In addition to the independent-samples t-test, this study provides a visual trend analysis to examine the annual movement of ROA, ROE, and NIM from 2016 to 2025. This analysis is important because the use of average values in the t-test may reduce the visibility of yearly fluctuations, particularly during the pre-pandemic, pandemic, and post-pandemic recovery periods. Therefore, Figures 2, 3, and 4 are presented to complement the mean-difference test and to provide a more dynamic interpretation of bank performance in Southeast Asia and South Asia.

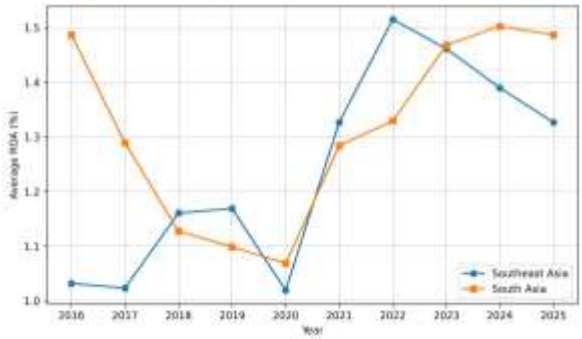

Figure 2. Trend of Average ROA in Southeast Asia and South Asia, 2016–2025

Figure 2 shows the annual trend of average ROA in Southeast Asian and South Asian banks from 2016 to 2025. Overall, the ROA movement in both regions appears relatively close, although there are year-to-year fluctuations. South Asian banks recorded higher ROA in several years, particularly in 2016, 2017, 2020, 2023, 2024, and 2025, while Southeast Asian banks showed slightly higher ROA in 2018, 2019, 2021, and 2022. Both regions experienced pressure around the pandemic period, especially in 2020, followed by a recovery in the subsequent years. However, the gap between the two regions was not consistently wide across the observation period. This trend supports the t-test result, which indicates that there is no significant difference in ROA between Southeast Asian and South Asian banks.

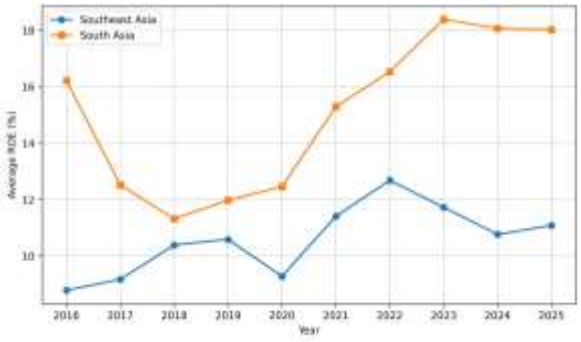

Figure 3. Trend of Average ROE in Southeast Asia and South Asia, 2016–2025

Figure 3 illustrates the trend of average ROE in both regions. Unlike ROA, the ROE trend shows a clearer and more consistent regional difference. South Asian banks recorded higher average ROE than Southeast Asian banks throughout the entire observation period. The difference became more visible after 2021, especially during 2023–2025, when South Asian banks maintained relatively high ROE levels. This pattern supports the independent-samples t-test result, which found a significant difference in ROE between the two regions. The higher ROE in South Asian banks indicates stronger returns to shareholders, but this result should be interpreted carefully because South Asian banks also recorded higher credit risk and lower capital strength compared to Southeast Asian banks.

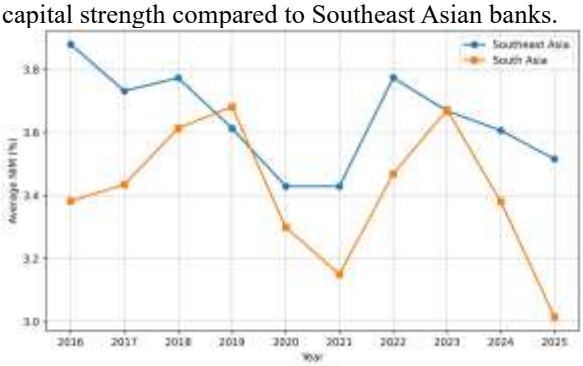

Figure 4. Trend of Average NIM in Southeast Asia and South Asia, 2016–2025

Figure 4 presents the annual trend of average NIM. The figure shows that NIM in both regions fluctuated during the observation period, but the difference between Southeast Asian and South Asian banks was relatively moderate. Southeast Asian banks generally recorded slightly higher NIM in several years, particularly in 2016–2018, 2020–2022, and 2024–2025. However, South Asian banks showed comparable NIM levels in some years, especially in 2019 and 2023. The absence of a persistent and large gap between the two regions supports the t-test result, which shows that the difference in NIM is not statistically significant. This indicates that both regions had relatively similar ability to generate net interest income from their earning assets.

6. Discussion

The results indicate that regional differences in bank

performance are not uniform across all profitability indicators. ROA and NIM do not differ significantly between Southeast Asian and South Asian banks, while ROE differs significantly. This suggests that regional variation is more visible in shareholder return than in asset productivity or interest-margin performance. The visual trend analysis further supports this interpretation by showing that ROA and NIM moved relatively closely between the two regions over time, while ROE displayed a more consistent regional gap in favor of South Asian banks.

The rejection of H1a indicates that ROA is not significantly different between banks in the two regions. ROA reflects the ability of banks to generate profit from their assets. The insignificant difference suggests that banks in Southeast Asia and South Asia have relatively similar asset productivity. From the perspective of financial intermediation theory, this finding indicates that both regions may have comparable capacity to transform assets into earnings, despite operating under different regulatory and institutional environments. This result is consistent with Mehzabin et al. (2023), who argued that profitability in Asian banking is influenced not only by regional location but also by capital structure, efficiency, and income diversification.

The acceptance of H1b shows that ROE differs significantly between the two regions, with South Asian banks reporting higher average ROE. ROE measures the ability of banks to generate profit from shareholders' equity. A higher ROE may indicate stronger shareholder returns, but from a risk-return trade-off perspective, it may also reflect higher leverage or lower equity buffers. This interpretation is supported by the bank-specific variable results: South Asian banks have significantly higher NPL and lower Tier 1 Ratio than Southeast Asian banks. Therefore, higher ROE in South Asia should be interpreted carefully because it may be associated with higher credit risk and lower capital strength.

This finding supports Bhowmik and Sarker (2024), who found that non-performing loans negatively affect bank performance in South Asian banks. It also aligns with Nguyen (2025) and Ozili (2025), who emphasized the central role of NPL in explaining banking profitability and risk. In addition, Ma'aji et al. (2026) showed that profitability in emerging and frontier banking markets must be analyzed together with credit risk, capital adequacy, and liquidity. Thus, the higher ROE of South Asian banks may reflect stronger equity returns but also indicates a riskier profitability structure.

Southeast Asian banks have significantly higher Tier 1 Ratio and larger bank size than South Asian banks. A higher Tier 1 Ratio indicates stronger core capital resilience and greater ability to absorb unexpected losses. From an institutional perspective, this finding may reflect the relatively stronger prudential regulatory environment in several Southeast Asian banking systems. Countries such as Singapore, Malaysia, Thailand, Indonesia, and the Philippines have progressively strengthened capital adequacy requirements, risk-based supervision, and banking governance frameworks in line with Basel standards. The development of ASEAN financial integration has also encouraged greater regulatory coordination, cross-border banking discipline, and convergence toward more consistent prudential practices across the region. These institutional factors may encourage Southeast Asian banks to maintain stronger capital buffers compared to South Asian banks.

The stronger Tier 1 position of Southeast Asian banks also helps explain why their ROE is lower than that of South Asian banks. Higher capital adequacy improves financial resilience, but it may reduce ROE because profits are measured against a larger equity base. In contrast, South Asian banks record higher ROE but also show significantly higher NPL and lower Tier 1 Ratio, indicating that their higher shareholder return may be associated with greater credit risk and weaker capital buffers. Therefore, the higher ROE in South Asia should not be interpreted as purely superior performance, while the lower ROE in Southeast Asia may reflect a more conservative and better-capitalized banking structure. This interpretation is consistent with Berger and Bouwman (2013), who showed that capital affects bank performance, particularly during stress conditions, and with Kharabsheh (2026), who emphasized the role of capital adequacy, liquidity, and bank size in shaping profitability.

The rejection of H1c shows that NIM does not differ significantly between the two regions. NIM reflects the ability of banks to generate net interest income from productive assets. Although Southeast Asian banks report higher average NIM, the difference is not statistically significant. This implies that the interest-based intermediation function of banks in both regions is relatively comparable. The finding is consistent with the financial intermediation perspective, which views NIM as a result of lending, funding cost, and asset allocation. Antao and Karnik (2022) and Mehzabin et al. (2023) showed that bank income structure and operating efficiency influence performance in Asian banks, suggesting that interest margins cannot be interpreted separately from income diversification and cost management.

The bank-specific variable results findings provide a deeper explanation of the main results. The significantly higher NPL in South Asia indicates greater credit-risk pressure. This condition may be related to differences in borrower quality, credit monitoring, financial inclusion challenges, and macro-financial vulnerability. High NPL can reduce interest income, increase loan-loss provisions, and weaken long-term profitability. Therefore, the higher ROE in South Asia may be partly explained by higher risk exposure rather than purely superior banking efficiency.

The insignificant differences in LDR and CIR indicate that liquidity intermediation and operating efficiency are not the main sources of regional performance differences. Both regions appear to have comparable loan-to-funding structures and cost-to-income profiles. This supports the argument that the main regional differences lie in capital structure, asset quality, and scale rather than liquidity or cost efficiency.

Overall, the results show that ROA, ROE, and NIM should not be treated as interchangeable measures of bank performance. ROA captures asset productivity, ROE captures shareholder return and capital structure, while NIM captures interest-margin efficiency. The finding that only ROE differs significantly highlights the importance of analyzing bank performance through multiple indicators. A bank or region may appear stronger from an equity-return perspective but not necessarily from asset-quality or capital-resilience perspectives.

The differences in banking performance between Southeast Asia and South Asia may also be influenced by broader macroeconomic conditions. Variables such as GDP growth, inflation, interest rates, exchange rate stability, and overall financial market development can affect bank profitability, lending behavior, asset quality, and interest margins. For example, higher economic growth may support loan demand and repayment capacity, while high inflation and interest rate volatility may increase credit risk and affect banks' funding costs. Therefore, the observed differences in ROA, ROE, and NIM should not be interpreted solely as the result of bank-specific characteristics, but also as outcomes that may reflect different macroeconomic environments across the two regions.

These findings suggest that regional banking performance should be interpreted through a risk-adjusted perspective. Higher profitability indicators, particularly ROE, do not always represent stronger banking fundamentals when they are accompanied by higher credit risk and lower capital adequacy. Conversely, lower ROE may reflect a more conservative capital structure and stronger regulatory discipline. Therefore, cross-regional banking performance comparison should consider profitability, risk, capital strength, and institutional context simultaneously.

7. Conclusion

This study concludes that bank performance differences between Southeast Asia and South Asia during 2016–2025 are evident only in ROE. ROA does not differ significantly, indicating that asset productivity is relatively similar between the two regions. NIM also does not differ significantly, suggesting that interest-margin efficiency is broadly comparable. However, ROE is significantly higher in South Asian banks, indicating stronger shareholder returns.

The interpretation of ROE must be linked to risk and capital structure. South Asian banks have significantly higher NPL, while Southeast Asian banks have significantly higher Tier 1 Ratio and bank size. Thus, the higher ROE in South Asia may reflect greater risk exposure and lower capital buffers, while Southeast Asian banks appear more capitalized and larger in scale.

This study contributes to the banking literature by showing that regional differences in bank performance are indicator-specific. Theoretically, it supports the relevance of financial intermediation theory, risk-return trade-off theory, and the CAMELS framework in explaining cross-regional banking performance. Empirically, it provides comparative evidence that ROE is more sensitive to regional differences than ROA and NIM.

8. Implications

Theoretically, this study strengthens the argument that bank performance is multidimensional. ROA, ROE, and NIM capture different dimensions of profitability and should be analyzed together. The results also show that risk and capital structure are essential for interpreting profitability. High ROE without strong asset quality and capital adequacy may not reflect sustainable performance.

Practically, the findings are relevant for bank management, investors, and regulators. Bank management should balance profitability targets with credit-risk control and capital resilience. Investors should not evaluate bank performance only from ROE, but also consider NPL, Tier 1 Ratio, and bank size. Regulators should strengthen credit-risk supervision, especially in banking systems with high NPL, while maintaining adequate capital buffers to support financial stability.

From a policy perspective, the results suggest that South Asian banking systems need stronger asset-quality management, while Southeast Asian banks need strategies to improve equity returns without weakening capital resilience. Regional banking policy

should therefore focus not only on profitability enhancement but also on risk-adjusted performance.

9. Limitations and Future Research

This study has several limitations. First, it uses an independent-samples t-test, so it identifies differences between regions but does not explain causal relationships among variables. Second, the analysis uses average values for 2016–2025, which may reduce the visibility of annual dynamics before, during, and after the pandemic period. Although this study provides visual trend analysis to complement the t-test, the main statistical test remains based on average values per bank. Third, the analysis does not include macroeconomic control variables such as GDP growth, inflation, interest rates, exchange rates, financial market development, or regulatory quality. These variables may influence bank profitability and may partly explain regional differences in ROA, ROE, and NIM.

Future research should use panel regression, dynamic panel models, or difference-in-differences approaches to examine the determinants of ROA, ROE, and NIM more deeply. Further studies may compare pre-pandemic, pandemic, and post-pandemic periods separately and incorporate macroeconomic, governance, digital banking, ownership structure, and regulatory variables to provide a more comprehensive explanation of regional banking performance differences.

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