



Analyzing The Impact Of Return On Equity On Diluted Earnings Per Share In Pre-And Post-Merger Periods Of Major Public Sector Banks In India

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Abstract: T

Background:

Public sector bank mergers in India aimed at enhancing financial efficiency have sparked interest in examining financial performance indicators. Return on Equity (ROE) and Diluted Earnings Per Share (EPS) are critical metrics in assessing bank profitability and shareholder value.

Aim:

The study aimed to analyze the impact of ROE on Diluted EPS during the pre- and post-merger periods for five major Public Sector Banks (PSBs): Punjab National Bank, Canara Bank, Union Bank of India, Indian Bank, and Bank of Baroda.

Methodology:

This descriptive research utilized a quantitative approach, relying on secondary data sourced from annual financial reports. Regression analysis was conducted using SPSS (version 25) to examine the predictive relationship between ROE (independent variable) and EPS (dependent variable) across pre- and post-merger periods. Color-coded year markers distinguished timeframes for clarity.

Results:

Findings showed that for Punjab National Bank, ROE had a strong and statistically significant impact on EPS both before and after the merger. In contrast, for Canara Bank, Union Bank, Indian Bank, and Bank of Baroda, the significant pre-merger relationships diminished or became statistically insignificant post-merger. This suggests that mergers may have disrupted or weakened the predictive strength of ROE on EPS in these banks.

Conclusion:

ROE significantly influenced EPS in pre-merger periods across all five banks; however, this influence waned post-merger in four of them, indicating mixed outcomes of the consolidation process.

Implication:

The study highlights the need for policy adjustments and performance reviews post-merger to sustain financial health in PSBs.

Index Terms - Return on Equity, Earnings Per Share, Public Sector Banks, Bank Mergers, Financial Performance.

1.INTRODUCTION

The banking sector plays a pivotal role in the economic development of any country by mobilizing savings and channelizing them into productive investments. Public Sector Banks (PSBs) in India have traditionally been the backbone of the financial system, facilitating inclusive growth and financial stability. Over recent years, the Indian banking landscape has witnessed significant structural reforms, particularly mergers among PSBs, aimed at enhancing operational efficiency, capital adequacy, and competitiveness. Bank mergers are strategic decisions intended to create larger entities capable of managing risks better, achieving economies of scale, and improving profitability (DeYoung, Evanoff, & Molyneux, 2009). However, such corporate restructuring inevitably affects key financial indicators like Return on Equity (ROE) and Earnings Per Share (EPS), which reflect the performance and shareholder value of banks.

Return on Equity (ROE) is a critical profitability metric that measures a company's ability to generate profits from its shareholders' equity. It indicates how effectively management utilizes equity capital to create earnings. Diluted Earnings Per Share (EPS), on the other hand, reflects the net income available to each outstanding share, considering potential dilution from convertible securities, stock options, and warrants. Both ROE and EPS are closely monitored by investors, regulators, and analysts as indicators of financial health and performance (Penman, 2013). The relationship between ROE and EPS becomes particularly significant in the context of bank mergers, where post-merger integration can either strengthen or weaken financial outcomes depending on the synergy realization and management efficiency.

Mergers among Indian PSBs are a relatively recent phenomenon initiated by the Government of India and the Reserve Bank of India (RBI) as a strategic response to growing competition, mounting non-performing assets (NPAs), and the need for stronger capital bases. For instance, the amalgamation of Punjab National Bank, Canara Bank, Union Bank of India, Indian Bank, and Bank of Baroda was intended to create global-scale banks with enhanced financial resilience (Reserve Bank of India, 2021). Yet, while mergers can lead to improved financial performance in the long run, the transitional phase often presents challenges such as integration costs, cultural clashes, and operational inefficiencies that may impact profitability metrics like ROE and EPS in the short term (Altunbas, Evans, & Molyneux, 2011).

Studies in the global banking context have extensively analyzed the impact of mergers on financial performance. Altunbas et al. (2011) found that bank mergers typically improve cost efficiency and profitability, though the benefits often materialize gradually post-merger. Their study emphasized that the success of mergers hinges on the acquiring bank's ability to integrate assets and realize cost synergies effectively. DeYoung et al. (2009) reviewed numerous empirical studies and noted that while mergers can enhance market power and reduce costs, they can also lead to complexity and integration risks that sometimes negate expected gains. These findings underline the importance of examining the relationship between ROE and EPS pre- and post-merger to understand the financial implications of consolidation fully.

In the Indian context, the financial performance of PSBs has been under scrutiny due to persistent NPAs and the challenge of maintaining profitability amidst reforms (Reserve Bank of India, 2021). ROE has been a particularly important focus since it reflects the return generated for shareholders, which influences market valuation and investor confidence. EPS, as an indicator of shareholder value, complements this by showing earnings attributable to equity shares, factoring in dilution effects (Penman, 2013). Analyzing these indicators before and after mergers provides valuable insights into whether consolidation strategies are achieving their intended financial outcomes.

Additionally, the empirical relationship between ROE and EPS in the banking sector is vital for policymakers and financial managers. A strong positive correlation indicates that improvements in equity utilization translate directly into shareholder earnings, reinforcing the bank's attractiveness to investors. Conversely, a weakening or insignificant relationship post-merger may signal transitional inefficiencies or strategic misalignments requiring corrective action (Fama & French, 2004). Thus, understanding this dynamic, assists regulators like the RBI in framing policies that support sustainable banking sector consolidation and growth.

This study addresses this gap by analyzing the impact of ROE on diluted EPS for five major Indian PSBs during their pre-merger and post-merger periods. By focusing on Punjab National Bank, Canara Bank, Union Bank of India, Indian Bank, and Bank of Baroda, the study evaluates how mergers affect the linkage between capital efficiency and shareholder earnings. The findings are expected to offer important insights for bank management, investors, and regulators concerning merger outcomes and capital management strategies.

1.1 Objectives of the study:

1. To assess the impact of Return on Equity (ROE) on Diluted Earnings Per Share (EPS) during the pre-merger period for five major Public Sector Banks.
2. To evaluate the effect of Return on Equity (ROE) on Diluted Earnings Per Share (EPS) in the post-merger period for the same banks, comparing the differences with the pre-merger phase.

1.2 Need and Significance of the study

The consolidation of major Public Sector Banks (PSBs) in India through mergers represents a significant structural change aimed at creating stronger, more competitive financial institutions. However, such mergers often bring about uncertainties regarding the banks' operational efficiency and financial performance. This study is important because it examines how a key profitability metric, Return on Equity (ROE), influences Diluted Earnings Per Share (EPS), a critical indicator of shareholder value, during both pre-merger and post-merger periods. Understanding this relationship is crucial for stakeholders—including policymakers, investors, and bank management—to evaluate whether mergers have strengthened or weakened banks' financial health and capital utilization. By analyzing these dynamics across five major PSBs, the study provides insights into the effectiveness of merger strategies and integration processes, highlighting areas of stability or disruption. Consequently, the findings can guide future policy decisions and strategic planning for bank consolidation, ensuring that mergers achieve their intended goals of enhanced profitability and sustainable growth in India's banking sector.

2. LITERATURE REVIEW

The relationship between Return on Equity (ROE) and Earnings Per Share (EPS) has been widely studied in the financial literature, particularly in the context of banking institutions undergoing structural changes such as mergers. ROE, a key indicator of profitability, measures how effectively a company uses shareholders' equity to generate profits, while EPS reflects the profitability allocated to each outstanding share, often impacting investor decisions (Damodaran, 2012). The link between these two metrics provides important insights into a bank's financial performance and shareholder value creation.

Mergers and acquisitions (M&A) within the banking sector have been identified as strategic tools to improve operational efficiency, capitalize on economies of scale, and enhance shareholder returns (Altunbas et al., 2011; DeYoung et al., 2009). However, the impact of mergers on profitability ratios such as ROE and EPS varies significantly depending on integration success and market conditions (Harford, 2005; KPMG, 2017). Studies focused on Indian Public Sector Banks (PSBs) suggest that while mergers have potential to improve capital adequacy and operational scale, transitional inefficiencies often dampen expected financial gains in the short term (Bansal & Kumar, 2018; Singh & Kaur, 2020).

Several empirical studies globally have confirmed a positive association between ROE and EPS, reinforcing that higher returns on equity typically translate into increased earnings per share (Penman, 2013; Bhagat & Bolton, 2014). However, the strength of this relationship is contingent on internal management practices, market competition, and regulatory frameworks (Laeven & Levine, 2009). For banks, especially, managing credit risk, capital structure, and operational costs directly influence both ROE and EPS outcomes (Berger & Bouwman, 2013).

In the Indian context, research by Gupta and Sharma (2019) highlighted that PSBs generally displayed a stronger ROE-EPS linkage pre-merger, while post-merger periods reflected volatility due to integration challenges. This echoes findings by Sahoo and Dash (2021) who found that merger-driven operational restructuring initially disrupts profitability metrics before realizing long-term synergy benefits. Similarly, Roy and Ghosh (2020) underscored that variations in post-merger ROE among Indian banks are linked to strategic realignments and changes in asset quality.

The role of regulatory reforms by the Reserve Bank of India (RBI) in facilitating successful mergers and their effect on profitability has been analyzed in multiple studies (RBI, 2019; Kumar & Rao, 2021). These reforms aim to improve capital adequacy and governance, which in turn affect the ROE and EPS metrics positively in the long run (Saxena & Mishra, 2020). However, the short-run effect often involves decreased performance indicators due to restructuring costs and integration complexities (Patel & Singh, 2018).

Globally, literature indicates that post-merger integration challenges like cultural differences, IT system compatibility, and workforce realignment affect financial performance (Vaara et al., 2012; Cartwright & Schoenberg, 2006). Banks that manage these factors effectively tend to sustain or improve their ROE and EPS post-merger (Berger & Humphrey, 1997; Laeven & Levine, 2007). Conversely, failure to address these leads to performance dips as seen in some Indian PSBs (Sundaram & Yadav, 2016).

Research by Chen et al. (2017) confirms that the magnitude of change in ROE significantly predicts shifts in

EPS, which makes ROE a critical indicator for investors to gauge post-merger financial health. Their study further emphasizes the necessity to differentiate between short-term post-merger disruptions and long-term performance trends, which often require longitudinal analysis (Ghosh & Maggi, 2018).

Empirical analyses on merger effects on Indian banks by Das and Singh (2019) reveal that while consolidated entities often report improved capital adequacy ratios, the immediate effect on EPS is mixed due to dilution effects and increased capital requirements. These findings align with studies by Reddy and Rajesh (2020), who argue that EPS variations depend on the timing of merger-related expenses and subsequent revenue recognition.

Other studies focus on specific banks involved in recent mergers, reporting varied impacts. For example, Bank of Baroda's merger showed an initial decrease in EPS despite improved ROE due to operational restructuring costs (Nair & Joseph, 2019). Meanwhile, Punjab National Bank demonstrated sustained ROE and EPS improvements post-merger, attributed to robust risk management and capital optimization (Verma & Gupta, 2020).

Several researchers have utilized regression and panel data models to analyze ROE-EPS relationships before and after mergers (Kumar & Patel, 2021; Sharma & Singh, 2022). These models often highlight that the explanatory power of ROE on EPS weakens immediately post-merger but strengthens over time as integration stabilizes (Joshi & Malhotra, 2023). This temporal dimension is critical for understanding performance metrics in merger evaluations.

Moreover, investor perceptions, driven by EPS trends, significantly influence stock performance and market capitalization post-merger (Baker & Wurgler, 2007). Studies by Mehta and Shah (2018) reveal that clear communication of merger benefits and capital restructuring positively affects investor confidence and hence the EPS trajectory.

The complex dynamics of bank mergers also entail risks related to credit quality, asset-liability mismatches, and governance issues that impact ROE and EPS (Allen & Carletti, 2013). Indian PSBs, due to their size and systemic importance, face unique challenges highlighted in the works of Balasubramanian and Verma (2021). In summary, the literature establishes a strong theoretical and empirical foundation for analyzing ROE's impact on EPS, particularly in the context of Indian PSBs undergoing mergers. It underscores the importance of contextual factors such as integration strategies, regulatory reforms, and market conditions in shaping the financial outcomes post-merger. This study aims to build upon these insights by providing a focused examination of pre- and post-merger periods for major PSBs in India.

3.Methodology

This study employed a descriptive research design to analyze the impact of Return on Equity (ROE) on diluted Earnings Per Share (EPS) across five merged banks: PNB, CB, UBI, IB, and BOB. The objective was to assess these effects in both pre- and post-merger periods. A quantitative approach was adopted, utilizing numerical data obtained from secondary sources, specifically financial reports available on the official websites of the selected banks. Regression analysis was conducted using SPSS.

Table No.3.1

PNB	CB	IB	UBI	BOB
2016-17	2016-17	2016-17	2016-17	2016-17
2017-18	2017-18	2017-18	2017-18	2017-18
2018-19	2018-19	2018-19	2018-19	2018-19
2019-20	2019-20	2019-20	2019-20	2019-20
2020-21	2020-21	2020-21	2020-21	2020-21
2021-22	2021-22	2021-22	2021-22	2021-22
2022-23	2022-23	2022-23	2022-23	2022-23
2023-24	2023-24	2023-24	2023-24	2023-24

4. Data Analysis & Interpretation

Regression Analysis: Impact of Return on Equity Ratio (%) (Independent Variable) on Diluted EPS (Dependent Variable) in pre-merger and post-merger period in case of Punjab National Bank, Canara Bank, Union Bank of India, Indian Bank & Bank of Baroda

- **H0 1:** There is no significant Impact of Return on Equity Ratio (%) (Independent Variable) on Diluted EPS (Dependent Variable) in pre-merger period in case of Punjab National Bank, Canara Bank, Union Bank of India, Indian Bank & Bank of Baroda.
- **H0 2:** There is no significant Impact of Return on Equity Ratio (%) (Independent Variable) on Diluted EPS (Dependent Variable) in post-merger period in case of Punjab National Bank, Canara Bank, Union Bank of India, Indian Bank & Bank of Baroda.

Table 4. 1: Model Summary & ANOVA Statistics (All Banks)

Bank	Period	R Square	F-Value	Sig. Value
Punjab National Bank	Pre-Merger	0.975	79.333	0.012
	Post-Merger	0.999	722.765	0.024
Canara Bank	Pre-Merger	0.991	217.638	0.005
	Post-Merger	0.697	2.298	0.371
Union Bank of India	Pre-Merger	0.928	25.902	0.037
	Post-Merger	0.732	2.727	0.347
Indian Bank	Pre-Merger	0.989	117.770	0.006
	Post-Merger	0.986	70.372	0.076
Bank of Baroda	Pre-Merger	1.000	146919.865	0.002
	Post-Merger	832	9.937	0.88
*Denotes significant model				

Interpretation- The model summary and ANOVA statistics reveal how well Return on Equity (ROE) explains the variance in Diluted Earnings Per Share (EPS) across both pre-merger and post-merger periods for each bank.

1. In the case of **Punjab National Bank**, the pre-merger model demonstrated a very high explanatory power with an R^2 of 0.975 and an F-value of 79.333, with a significant p-value of 0.012, indicating a good model fit. Post-merger, the model further improved with an R^2 of 0.999 and a significantly high F-value of 722.765, and a p-value of 0.024, suggesting that ROE continued to strongly predict EPS even after the merger.
2. For **Canara Bank**, the pre-merger R^2 was also high at 0.991 with a significant F-value of 217.638 ($p = 0.005$), confirming a reliable model fit. However, post-merger, the R^2 dropped to 0.697, and the F-value to 2.298, with a non-significant p-value of 0.371, indicating the model no longer significantly explained variations in EPS.
3. **Union Bank of India** showed a good pre-merger model fit ($R^2 = 0.928$, $F = 25.902$, $p = 0.037$), but post-merger the explanatory power weakened ($R^2 = 0.732$, $F = 2.727$) and the model was not statistically significant ($p = 0.347$), reflecting reduced influence of ROE on EPS.
4. In the case of **Indian Bank**, the pre-merger model was strong with an R^2 of 0.989 and F-value of 117.770 ($p = 0.006$). Although the post-merger R^2 remained high at 0.986 and the F-value was 70.372, the significance level dropped to 0.076, making the model statistically insignificant.
5. Lastly, **Bank of Baroda** had a perfect pre-merger model fit with an R^2 of 1.000 and a massive F-value of 146,919.865 ($p = 0.002$). However, the post-merger model sharply deteriorated with an extremely high but uninterpretable F-value of 832 and an insignificant p-value of 0.880, indicating that the model could no longer explain the EPS based on ROE.

Table 4.2: Regression Coefficients (All Banks)

Bank	Period	Std. Coeff. (Beta)	Sig. Value
Punjab National Bank	Pre-Merger	0.988	0.012*
	Post-Merger	0.999	0.024*
Canara Bank	Pre-Merger	0.995	0.005*
	Post-Merger	0.835	0.371
Union Bank of India	Pre-Merger	0.963	0.037*
	Post-Merger	0.855	0.347
Indian Bank	Pre-Merger	0.994	0.006*
	Post-Merger	0.993	0.076
Bank of Baroda	Pre-Merger	1.000	0.002*
	Post-Merger	.912	0.880
*Denotes significant impact			

Interpretation- The regression coefficients in Table 2 provide insights into the strength and direction of the linear relationship between **Return on Equity (ROE)** and **Diluted Earnings Per Share (EPS)**, while also indicating whether the observed effects are statistically significant.

1. For **Punjab National Bank**, the **pre-merger standardized coefficient (β)** was **0.988** with a **p-value of 0.012**, indicating a very strong and statistically significant positive relationship between ROE and EPS. This means that a **one-unit increase in ROE was associated with a 0.988 unit increase in EPS**, suggesting ROE was a nearly perfect predictor of EPS in the pre-merger period. Similarly, in the **post-merger period**, the β value further increased to **0.999** with a p-value of **0.024**, reaffirming the strength of the relationship and its statistical significance. Thus, both **H₀₁** and **H₀₂** are rejected for Punjab National Bank, confirming that ROE had a **significant and substantial impact on EPS** both before and after the merger.
2. In the case of **Canara Bank**, the **pre-merger β coefficient** was **0.995** with a **p-value of 0.005**, which also points to a very strong and significant positive effect of ROE on EPS. Hence, **H₀₁ is rejected**. However, in the **post-merger period**, although the β coefficient remained moderately high at **0.835**, the **p-value rose to 0.371**, rendering the relationship statistically insignificant. This indicates that while the direction of the relationship was still positive, the variability in EPS could not be reliably explained by ROE post-merger. Thus, **H₀₂ is accepted**, suggesting that ROE **did not have a significant impact on EPS after the merger**.
3. For **Union Bank of India**, the **pre-merger $\beta = 0.963$** with a **p-value of 0.037**, again indicating a **strong and statistically significant positive effect**. A unit increase in ROE corresponded to a 0.963 unit increase in EPS, and **H₀₁ is rejected**. Post-merger, although the β value was **0.855**, the **p-value was 0.347**, which is not statistically significant at the 5% level. Therefore, **H₀₂ is accepted**, indicating **no significant influence of ROE on EPS post-merger**.
4. In the case of **Indian Bank**, the **pre-merger standardized β coefficient** was **0.994**, with a **p-value of 0.006**, signifying a **strong and significant** relationship between ROE and EPS. Thus, **H₀₁ is rejected**. In the **post-merger period**, the β coefficient remained high at **0.993**, but the **p-value increased to 0.076**, exceeding the typical 0.05 significance threshold. As a result, **H₀₂ is accepted**, showing that the **relationship, although strong in magnitude, was not statistically significant after the merger**.
5. Lastly, for **Bank of Baroda**, the **pre-merger β was a perfect 1.000**, and the **p-value was 0.002**, indicating an **exact and statistically significant relationship**. In other words, a unit increase in ROE corresponded precisely to a unit increase in EPS, and **H₀₁ is strongly rejected**. However, in the **post-merger period**, the β was **0.912**, but the **p-value soared to 0.880**, indicating that the relationship was **not statistically significant**. Therefore, **H₀₂ is accepted**, and it can be inferred that the **post-merger changes in ROE had no reliable predictive effect on EPS** in this case.

Table 4.3- Summary of Hypothesis Testing

Bank	Pre-Merger (H_{01})	Post-Merger (H_{02})
Punjab National Bank	Rejected	Rejected
Canara Bank	Rejected	Accepted
Union Bank of India	Rejected	Accepted
Indian Bank	Rejected	Accepted
Bank of Baroda	Rejected	Accepted

5. Conclusion and Suggestions

The regression analysis conducted to evaluate the impact of Return on Equity (ROE) on Diluted Earnings Per Share (EPS) across both pre-merger and post-merger periods for five major Public Sector Banks—namely, Punjab National Bank, Canara Bank, Union Bank of India, Indian Bank, and Bank of Baroda—revealed divergent patterns, reflecting varying degrees of financial adaptability and merger integration efficiency.

Among the five banks, **Punjab National Bank** stood out for demonstrating a highly consistent and statistically significant relationship between ROE and EPS in both periods. The pre-merger phase showcased a strong explanatory power ($R^2 = 0.975$, $\beta = 0.988$, $p = 0.012$), which was further strengthened in the post-merger phase ($R^2 = 0.999$, $\beta = 0.999$, $p = 0.024$). This continuity suggests that the bank effectively preserved its internal capital efficiency and profitability dynamics, despite undergoing significant organizational changes. The findings imply that Punjab National Bank had a resilient financial strategy and operational stability, ensuring that shareholder returns continued to predict earnings outcomes reliably. Such robustness points toward efficient post-merger integration, strong leadership, and continuity in performance monitoring and control systems.

In contrast, the remaining four banks—**Canara Bank**, **Union Bank of India**, **Indian Bank**, and **Bank of Baroda**—reflected a common trajectory: a robust and statistically significant relationship between ROE and EPS during the pre-merger period, which diminished or lost significance in the post-merger phase. This trend may indicate that these banks encountered transitional inefficiencies, operational disruptions, or a time lag in achieving expected synergies post-merger.

For **Canara Bank**, the pre-merger model ($R^2 = 0.991$, $\beta = 0.995$, $p = 0.005$) was statistically significant and indicated strong financial alignment. However, the post-merger period showed a marked decline in explanatory power ($R^2 = 0.697$, $\beta = 0.835$) and statistical insignificance ($p = 0.371$), hinting at challenges such as increased risk, altered cost structures, or difficulty in capital deployment effectiveness. This may reflect internal integration difficulties or strategic mismatches between merging entities.

Similarly, **Union Bank of India** displayed a meaningful pre-merger relationship ($R^2 = 0.928$, $\beta = 0.963$, $p = 0.037$), which turned statistically insignificant post-merger ($R^2 = 0.732$, $\beta = 0.855$, $p = 0.347$). The decline suggests that the ability of ROE to explain variations in EPS diminished, possibly due to revenue volatility, operational misalignments, or external market pressures affecting earnings.

Indian Bank followed a comparable path, with a strong pre-merger association ($R^2 = 0.989$, $\beta = 0.994$, $p = 0.006$) that weakened in significance post-merger ($R^2 = 0.986$, $\beta = 0.993$, $p = 0.076$). Despite the high β value persisting, the statistical insignificance suggests that external factors or internal realignments may have disrupted the direct financial relationship between ROE and EPS.

Bank of Baroda showed the most pronounced shift. Its pre-merger model was nearly perfect ($R^2 = 1.000$, $\beta = 1.000$, $p = 0.002$), indicating ideal financial coherence. However, the post-merger results ($R^2 = 0.832$, $\beta = 0.912$, $p = 0.880$) suggested a severe breakdown in the predictive capacity of ROE on EPS. This could be due to extensive restructuring, inconsistent financial practices, or ineffective post-merger performance management, which may have decoupled profitability from shareholder equity utilization.

5.1 Suggestions

1. **Strengthen Post-Merger Integration:** Banks that showed diminished relationships post-merger should focus on enhancing integration frameworks. This includes aligning operational processes, management cultures, and performance metrics to avoid disruptions that weaken financial predictability.
2. **Monitor Capital Efficiency Metrics:** Continuous tracking and evaluation of capital utilization indicators like ROE and their correlation with profitability metrics (like EPS) can help diagnose early signs of inefficiencies post-merger.
3. **Implement Phased Synergy Realization Plans:** Since post-merger benefits often materialize over time, banks should adopt phased approaches with measurable synergy benchmarks to track whether mergers are yielding anticipated financial outcomes.
4. **Focus on Strategic Alignment:** The divergence in post-merger outcomes across banks suggests that uniform merger policies may not be sufficient. Tailored financial and operational strategies that consider the unique challenges of each merging entity are necessary.
5. **Enhance Transparency and Communication:** Clearly communicating post-merger financial strategies and ensuring stakeholder involvement may improve market confidence and internal alignment, leading to stronger post-merger financial linkages.
6. **Conduct Periodic Regression Audits:** Periodic evaluations using regression and other diagnostic tools can help banks assess the ongoing relevance of financial indicators like ROE and realign them with evolving strategic priorities.

These findings highlight the complexity of post-merger transitions in the banking sector and underline the importance of maintaining financial discipline, operational consistency, and strategic clarity to preserve the predictive power of key performance indicators like ROE.

In summary, while mergers aim to enhance operational scale and financial strength, the findings suggest that these benefits do not automatically translate into consistent post-merger profitability unless backed by robust internal strategies and operational coherence. Punjab National Bank serves as a model case of effective merger handling, while others may need strategic recalibration to strengthen the linkage between equity returns and shareholder earnings.

6. Policy Implications

Based on the regression results examining the relationship between Return on Equity (ROE) and Diluted Earnings Per Share (EPS) in pre- and post-merger periods for selected Public Sector Banks (Punjab National Bank, Canara Bank, Union Bank of India, Indian Bank, and Bank of Baroda), the following **policy implications** can be drawn:

1. **Strengthen Post-Merger Integration Policies**
The decline in the significance of the ROE–EPS relationship in most banks post-merger suggests inefficiencies in merger execution. **Policy frameworks should mandate structured post-merger integration plans**, with timelines and accountability for operational alignment, cultural assimilation, and system integration to ensure continuity in financial performance.
2. **Mandate Financial Monitoring and Evaluation**
Given that only Punjab National Bank maintained a significant relationship between ROE and EPS post-merger, **regulatory bodies such as the RBI and Ministry of Finance should require regular post-merger financial audits**. These should assess capital efficiency, profitability, and risk exposure, using indicators such as ROE, EPS, and R^2 values from regression analyses.
3. **Encourage Performance-Based Incentives Linked to Integration Outcomes**
The weakening of ROE–EPS linkages post-merger points to delayed synergy realization. **Policymakers should design incentive structures for management based on post-merger performance metrics**, including restoration of pre-merger financial efficiency and realization of projected synergies within a defined timeframe.
4. **Develop a Risk Mitigation Framework for Mergers**
Since mergers may introduce volatility and operational disruptions, **a policy framework should be instituted to assess risk before and after mergers**, including stress testing the potential impact on shareholder returns and profitability. This will help banks build resilience into their merger strategies.

5. Promote Bank-Specific Merger Readiness Assessments

The variation in post-merger performance among banks implies that a one-size-fits-all approach may not be effective. **The government and regulatory agencies should develop a standardized merger readiness assessment tool**, evaluating operational capacity, technological readiness, human resources integration potential, and historical financial performance prior to approving future mergers.

6. Enhance Transparency and Stakeholder Communication

The decline in financial predictability post-merger may also reflect market uncertainty. **Policies should emphasize transparent disclosure of post-merger plans, financial targets, and integration timelines**, helping rebuild investor confidence and internal alignment across merging institutions.

7. Institutionalize Post-Merger Review Committees

To track post-merger outcomes and ensure corrective actions where needed, **banks should be required to form internal review committees** reporting quarterly to regulatory bodies on post-merger integration progress, financial performance, and deviations from merger objectives.

8. Build Capacity for Data-Driven Financial Strategy

Since regression analysis offers valuable insights into capital utilization and profitability linkages, **policies should promote data-driven decision-making** within banks. Training programs and analytical capacity building should be prioritized for senior management to interpret financial models and adjust strategies accordingly.

These policy recommendations aim to improve the effectiveness of mergers in the public banking sector, preserve financial performance linkages, and ensure that mergers lead to sustainable value creation for shareholders and the broader economy.

7. Limitations and Future scope of the study

While this study employed a rigorous regression-based quantitative methodology using secondary data to evaluate the impact of Return on Equity (ROE) on Diluted Earnings Per Share (EPS) for five merged public sector banks during pre- and post-merger periods, certain limitations constrain the generalizability and depth of its findings. The analysis was restricted to a small sample of five banks and relied solely on ROE as the independent predictor, excluding other critical financial and operational variables like Return on Assets, Net Interest Margin, or non-performing assets that may also influence EPS. For future studies, expanding the sample size to include private sector and regional rural banks, incorporating a broader set of financial indicators, and applying advanced statistical or machine learning models could provide more comprehensive and robust insights. Longitudinal studies examining the long-term impact of mergers, supported by qualitative data from stakeholder interviews, would further enhance the understanding of post-merger financial performance in the Indian banking sector.

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