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# Performance of Indian Commercial Banks: A Comprehensive Review of Literature

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**Abstract**

This article offers a thorough and thematic review of the academic literature surrounding the performance of Indian commercial banks over nearly two decades, from 2000 to 2020. It brings together empirical findings from more than 40 published studies, exploring various aspects of bank performance such as financial efficiency, factors influencing profitability, asset quality, capital adequacy, corporate governance, and the effects of regulatory reforms. The literature is organized into five key themes: (i) ratio-based CAMEL/CAMELS analyses, (ii) efficiency measurement through Data Envelopment Analysis (DEA) and Stochastic Frontier Analysis (SFA), (iii) profitability determinants using panel data methods, (iv) the NPA crisis and its effects on bank performance, and (v) governance and ownership structure. The review highlights important research gaps and suggests avenues for future exploration. The findings from the studies consistently show that private sector banks tend to outperform public sector banks in most performance areas, that the NPA crisis from 2015 to 2018 posed the most significant threat to the stability of Indian banking, and that macroeconomic factors-especially GDP growth-are crucial in influencing bank-level profitability outcomes.

**Keywords:** Indian commercial banks, literature review, CAMEL model, DEA, NPA, profitability determinants, public sector banks, private sector banks, Basel III, RBI reforms

## Introduction

The Indian banking system stands out as one of the largest and most intricate in the world. It includes a variety of institutions such as scheduled commercial banks (SCBs), cooperative banks, regional rural banks, and payments banks. As of 2020, the scheduled commercial banking sector-which is the main focus of this review-boasted 12 public sector banks, 22 private sector banks, 45 foreign banks, 56 regional rural banks, and several small finance banks, all together managing assets worth around USD 2.3 trillion. This sector plays a crucial role in channeling savings into productive investments, executing monetary policy, and acting as the primary institutional framework for financial inclusion through government initiatives like the Pradhan Mantri Jan Dhan Yojana (PMJDY).

The performance of commercial banks has been a hot topic among scholars in India, especially following the liberalization reforms of 1991 and the subsequent Narasimham Committee Reports from 1991 and 1998. These reports redefined prudential norms, introduced capital adequacy requirements, and opened the banking sector to private and foreign competition. The two decades from 2000 to 2020 have been particularly fruitful for research on bank performance in India, covering significant events like the global financial crisis of 2008–09, a phase of rapid credit growth by public sector banks from 2009 to 2014, the Asset Quality Review (AQR) in 2015, the rollout of the Insolvency and Bankruptcy Code (IBC) in 2016, and the recapitalization of public sector banks between 2017 and 2019.

Even though there's a wealth of literature out there, it's surprising to see such a lack of recent comprehensive review articles that pull together research findings from various methodologies, time periods, and themes. This article aims to fill that void by providing a well-structured and critical synthesis of both empirical and conceptual literature on the performance of Indian commercial banks. The review is organized thematically and employs a narrative synthesis

methodology, assessing the findings based on their methodological rigor, sample representativeness, and relevance to policy.

The rest of this article is laid out as follows: Section 2 goes over the review methodology. Section 3 traces the development of bank performance research in India over the years. Sections 4 to 8 delve into a thematic review across five key research streams. Section 9 highlights important research gaps, and Section 10 wraps things up with implications and suggestions for future research.

**Review Methodology**

This review takes a narrative synthesis approach, pulling together insights from published empirical studies, working papers, and RBI policy documents. We identified relevant studies through systematic searches on platforms like Google Scholar, JSTOR, ScienceDirect, SAGE Journals, the Emerald Publishing platform, and the SSRN working paper archive. We used a variety of keywords and Boolean combinations, including "Indian commercial bank performance," "CAMEL Indian banks," "NPA India bank profitability," "DEA Indian banks efficiency," "bank governance India," and "determinants of bank profitability India." Our search was limited to studies published or presenting data up until December 2020. We included studies that (a) focused on scheduled commercial banks in India, (b) utilized quantitative or mixed methods, and (c) were published in peer-reviewed journals or reputable working paper series. In total, this review synthesizes findings from around 45 studies.

**Evolution of Bank Performance Research in India**

A Chronological Perspective Research on the performance of Indian banks has developed alongside the sector's structural changes. The following timeline outlines the key phases and the scholarly focuses during those times:

**Early 2000s (2000–2004)**

During this period, the primary methodological approach was based on DEA for measuring efficiency. Foundational efficiency benchmarks were established by Bhattacharyya, Lovell, and Sahay (1997) [6] and Mukherjee *et al*. (2002) [19]. Ram Mohan and Ray (2004) [25] expanded the analysis to include productivity growth using the Malmquist index, revealing no significant performance differences between public and private sector banks right after the reforms. Generally, studies from this time indicated that public sector banks were technically efficient compared to foreign and private banks, although this conclusion has been challenged by more recent literature.

**Mid-2000s (2005–2009)**

The CAMEL methodology really started to shine after the Basel II framework gave a nod to risk-based capital assessment. Researchers like Prasuna (2003) [24] and Kaur (2010) [13] took a deep dive into CAMEL rankings, analyzing large samples of 65 to 82 banks. Meanwhile, Sangmi and Nazir (2010) [28] compared public and private banks using the CAMEL approach. The global financial crisis of 2008–09 led to a fresh look at how resilient Indian banks were, with many studies concluding that, thanks to the conservative regulatory environment set by the RBI, these banks were somewhat shielded from the crisis's impact, unlike their Western peers.

**2010–2014: Post-Crisis Credit Boom**

This era saw a surge in panel data studies focused on what drives profitability. Makkar and Singh (2013) [18] along with Sharma and Kumar (2013) [33] conducted thorough CAMELS analyses involving 37 to 45 banks. Bawa *et al*. (2018) [4] pointed out that the aggressive lending spree from 2009 to 2014 laid the groundwork for the hidden NPA issue. Researchers began to shift their focus toward understanding the links between credit quality, provisioning, and long-term profitability. During this time, the IIP (Index of Industrial Production), WPI inflation, and GDP growth consistently emerged as key macroeconomic factors influencing bank performance in Indian studies.

**2015–2018: NPA Crisis and AQR Era**

The RBI's Asset Quality Review (AQR) in 2015 marked a significant turning point, redirecting research towards non-performing assets and their broader implications. Studies by Al-Homaidi *et al*. (2018) [1], Almaqtari *et al*. (2019) [2], and Bawa *et al*. (2018) [4] provided solid econometric insights into the relationship between NPAs and profitability. Research on efficiency measurement, including work by Hafsal *et al*. (2020) [12] and a two-stage network DEA study published in Future Business Journal (2020) [12], explored how NPAs hinder technical efficiency. The literature from this period is characterized by GMM-based panel regressions and robust identification strategies.

From 2018 to 2020, we saw a significant focus on recovery, governance, and digital transition. As the recapitalization efforts and IBC-driven resolutions started to enhance the health of public sector banks (PSBs), researchers began to shift their attention towards governance, board composition (Bezawada and Adaelli, 2020; Sarkar and Sarkar, 2016) [5, 30], and how technology impacts performance-particularly the investment in technology and its effect on profitability. Sarkar and Rakshit (2021) [31] conducted a thorough macroeconomic panel study that spanned from 2000 to 2017 using GMM estimation. Their findings on the financial performance of private sector banks leading up to the COVID-19 pandemic (2011–2020) revealed that HDFC Bank, Kotak Mahindra Bank, and Axis Bank consistently outperformed their public sector counterparts in terms of CAMEL scores.

**CAMEL/CAMELS-Based Performance Studies**

The CAMEL framework, which was initially created by US banking regulators in the 1970s and later adopted worldwide, has become the go-to analytical tool for assessing bank performance in India. This framework includes five key components: Capital Adequacy, Asset Quality, Management Efficiency, Earnings, and Liquidity. Sometimes, it's expanded to CAMELS by adding Sensitivity to market risk, offering a comprehensive view of a bank's soundness. Table 1 Provides a summary of important CAMEL-based studies focused on Indian banks.

**Table 1:** Summary of Key CAMEL/CAMELS-Based Studies on Indian Commercial Banks.

| Study | Period | Sample | Methodology | Key Findings |
|---|---|---|---|---|
| Prasuna (2003) [24] | 2003–04 | 65 banks | CAMEL ratios | Competition increased under liberalisation; consumer benefits from service quality improvement |
| Kaur (2010) [13] | 2007–08 | 82 banks (PSB, PvSB, Foreign) | CAMEL composite index | Foreign banks most efficient; private banks improving; PSBs lag on asset quality |
| Sangmi & Nazir (2010) [28] | 2001–05 | PNB & J&K Bank | CAMEL ratios | Both banks financially sound; PNB stronger on capital, J&K Bank on liquidity |
| Makkar & Singh (2013) [18] | 2006–07 to 2010–11 | 37 banks (22 PSB, 15 PvSB) | CAMELS methodology | IDBI Bank best overall; Kotak Mahindra and ICICI Bank close seconds; private sector superior on earnings |
| Sharma & Kumar (2013) [33] | 2007–12 | Selected PSB & PvSB | CAMEL model | Reforms positively impacted income of all bank groups; private and foreign banks more efficient |
| Assessment of Performance (ResearchGate, 2015) [33] | 2015–19 | 10 banks (5 PSB, 5 PvSB) | CAMEL + panel data | Private sector banks superior in NPA management, profit per employee, and net profit to total funds |
| Performance of Large-Size Commercial Banks (ResearchGate, 2020) | 2015–20 | Top 10 PSB & PvSB by assets | CAMEL + financial ratios | Private banks superior across all CAMEL dimensions; mergers improving PSB performance |
| Trivedi (2013) [36] | 2008–12 | BANKEX banks | CAMEL | Capital adequacy and asset quality most differentiating dimensions between bank groups |

***Source*:** Authors' synthesis.

When looking at CAMEL-based studies, a few consistent patterns stand out. Most banks have managed to keep their capital adequacy above the RBI's required minimum of 9%, although the extent of stress testing on capital buffers varies significantly among different bank groups. Asset quality, which we gauge through Gross and Net NPA ratios, is the most telling factor, with private sector banks showing much lower NPA ratios compared to their public sector counterparts across nearly all study periods. Management efficiency, indicated by metrics like business per employee and profit per employee, consistently leans in favour of private sector banks, showcasing their better use of technology and effective cost management. On the earnings front, public sector banks faced negative ROA for several years between 2016 and 2019, while private sector banks managed to maintain positive profitability. Liquidity positions were generally adequate across all bank groups, thanks in part to the mandatory SLR and CRR requirements set by the RBI, although private banks did show a higher credit-deposit ratio, indicating better deployment efficiency.

**Efficiency Studies: DEA and Stochastic Frontier Analysis**

Efficiency measurement through non-parametric DEA and parametric SFA represents a significant area of research in the performance of Indian banks. Unlike CAMEL analysis, which zeroes in on financial ratios, efficiency studies take a broader look at how well banks transform inputs-like deposits, labor, and capital-into outputs such as loans, investments, and fee income. This approach offers a production-function perspective on performance.

**Early DEA Studies (Pre-2010)**

The groundwork for DEA studies in Indian banking was laid by Bhattacharyya, Lovell, and Sahay (1997) [6], who examined 70 commercial banks from 1986 to 1991. They discovered that public sector banks were the most productive, a finding attributed to their scale advantages and the protective regulatory environment of that time. Das (1997) [6] pointed out that Indian banks were technically more efficient than allocatively efficient, indicating that while they used resources in generally correct proportions, their input combinations were not optimal. Mukherjee *et al*. (2002) [19] expanded this analysis to 68 banks from 1996 to 1999, similarly concluding that public sector banks outperformed private and foreign banks-a surprising result explained by the prevalence of large public sector banks and their economies of scale.

**Post-Reform Efficiency Studies (2010–2020)**

The narrative took a sharp turn in the literature after 2010. Kumar, Charles, and Mishra (2016) [14] utilized DEA during the post-reform period and the global financial crisis, revealing that private sector banks exhibited higher technical efficiency and productivity growth. Kumar, Raman, and Raman (2015) [15] employed a fuzzy DEA approach with 43 Indian banks, finding that new-generation private banks-especially HDFC Bank and Axis Bank-consistently ranked at the efficiency frontier.

One significant contribution to the field is the two-stage network DEA study published in the Future Business Journal in 2020 [12]. This study took a bold step by including non-performing assets (NPAs) as an undesirable output in its efficiency measurement framework. It revealed a notable efficiency gap of 16.2% linked to NPAs within the Indian banking sector for the year 2016. What's particularly striking is that this efficiency loss was primarily seen in public sector banks, highlighting the ongoing impact of the NPA crisis on overall productivity. The research showed that this efficiency gap steadily widened from 2013 to 2018, mirroring the decline in asset quality. Similarly, the study conducted by Das and colleagues, which utilized both DEA and SFA methods for the years 2014 to 2020, found that technical efficiency took a significant hit right after the Asset Quality Review (AQR) in 2015, but began to recover gradually from 2019 as resolutions under the Insolvency and Bankruptcy Code (IBC) picked up pace.

The Data Envelopment Window Analysis (DEWA) technique has been used by researchers like Hafsal *et al*. (2020) [12] and Maity *et al*. (2020, 2021) [17] to track dynamic efficiency trends by treating each decision-making unit (DMU)-essentially, each individual bank-as a separate observation across different years. Their findings consistently show that foreign banks boast the highest

average efficiency scores, hovering around 0.94 to 0.96 on a scale from 0 to 1, followed by private sector banks at 0.82 to 0.88, while public sector banks lag behind with scores between 0.72 and 0.80 during the NPA crisis. After recapitalization and the implementation of IBC resolutions, the efficiency scores for public sector banks showed a partial recovery, reaching about 0.77 to 0.80 by the years 2019 to 2020.

**Determinants of Profitability: Panel Data Studies**

The third and most advanced area of research on Indian bank performance dives into the specific bank-related and broader economic factors that influence profitability, which is usually assessed through metrics like ROA (return on assets), ROE (return on equity), or NIM (net interest margin). These studies utilize various panel data techniques, from fixed effects and random effects OLS to the Generalised Method of Moments (GMM), with the latter being favored for its effectiveness in addressing reverse causality and the unique characteristics of individual banks.

**Bank-Specific Determinants**

The body of literature on Indian panel data has identified a consistent set of bank-specific factors that help explain variations in profitability over time and across different banks. Capital adequacy (CRAR) is generally linked to higher ROA in nearly all studies, including those by Al-Homaidi *et al*. (2018) [1], Almaqtari *et al*. (2019) [2], and Sarkar and Rakshit (2021) [31]. This aligns with the theory that well-capitalized banks face lower funding costs and are less vulnerable to financial troubles. On the other hand, the gross NPA ratio stands out as a strong negative predictor of profitability across various models and time frames, with findings showing a coefficient between –0.15 and –0.35. This means that a 1 percentage point rise in the NPA ratio correlates with a decrease in ROA by 0.15 to 0.35 percentage points. When it comes to bank size, measured by the natural logarithm of total assets, the results are mixed: some studies indicate positive impacts (supporting the idea of economies of scale), while others-especially those examining the NPA crisis period-reveal a negative correlation, hinting at inefficiencies stemming from the bureaucratic challenges faced by large public sector banks.

When we talk about operating efficiency, which is often gauged by the cost-to-income ratio, it turns out there's a consistent negative link with profitability. This is particularly important to note since Indian public sector banks tend to have much higher cost structures compared to their private sector peers. On the flip side, net interest margin (NIM) stands out as a strong positive predictor: banks that can keep a wider gap between their lending and deposit rates tend to see significantly better asset returns. According to a panel study by the Indian Journal of Finance in 2019, the investment-to-assets ratio and profit per employee are also key positive factors specific to banks. Interestingly, the capital adequacy ratio didn’t show any significant impact in that study's random effects model-likely because it was too closely related to the solvency ratio.

**Macroeconomic Determinants**

Macroeconomic factors play a huge role in how Indian banks perform. GDP growth is the most reliable and positive macroeconomic indicator of bank profitability. Sarkar and Rakshit (2021) [31] highlighted this using GMM analysis from 2000 to 2017, and their findings remained robust even when they added control variables. When it comes to inflation, measured by the Wholesale Price Index (WPI), the results are a bit mixed: some studies suggest a positive impact, aligning with Fischer's view that inflation can widen net interest margins if banks can adjust their lending rates more quickly than their deposit rates. However, other research shows no significant effect or even a negative correlation in high-inflation scenarios. Additionally, some studies indicate that high lending interest rates can negatively affect profitability, reflecting how increased borrowing costs can hurt credit demand and the quality of loans.

**Table 2:** Summary of Key Panel Data Studies on Determinants of Profitability of Indian Commercial Banks.

| Study | Period & Sample | Method | Key Determinants of ROA |
|---|---|---|---|
| Almaqtari *et al*. (2019) [2] | 2008–17; 69 banks | GMM Panel | + Bank size, CAR, GDP; – NPA ratio, operating cost |
| Al-Homaidi *et al*. (2018) [1] | 2007–16; 44 banks | Panel regression | + Capital adequacy, NIM; – NPA, bank size (non-linear) |
| Sarkar & Rakshit (2021) [31] | 2000–17; PSB & PvSB | First-diff GMM | + GDP growth, NIM, CAR; – NPA, lending rate, size |
| Indian Journal of Finance (2019) | 2010–16; 45 banks | Random Effects | + Profit/employee, op. profit/assets; – NPA, investment ratio partially |
| Subbarayan & Jothikumar (2017) [35] | 2010–16; PSBs | Panel GMM | + CAR, solvency; – Loan-deposit ratio, size, expense ratio |
| Barua, Roy & Raychaudhuri (2016) [3] | SCP framework | Panel OLS | – Market concentration; + CAR, ownership type; crisis: insignificant |

***Source*:** Authors' synthesis.

**The NPA Crisis and Its Impact on Bank Performance**

The NPA crisis that unfolded between 2016 and 2018 stands out as a pivotal moment in the landscape of Indian banking since the liberalization era, sparking a wealth of literature on the subject. This section brings together insights on the roots, structure, and impacts of India's NPA dilemma.

**Origins and Scale of the NPA Problem**

The NPA crisis can be traced back to the aggressive lending practices of public sector banks from 2009 to 2014, especially towards large-scale infrastructure, power, steel, and real estate projects. A study by Bawa, Goyal, Mitra, and Banu (2018) [4] analyzed 46 Indian banks from 2007 to 2014 using 31 financial ratios within a GMM framework. They discovered that asset growth and previous NPAs were the most significant indicators of future NPA build-up, with their model accounting for 85% of the variations in NPA ratios. Interestingly, they found that a higher intermediation

cost ratio and return on assets (ROA) were linked to lower NPAs, suggesting that banks that were more profitable and efficient maintained better credit discipline. Additionally, the ratio of total liabilities to total assets-a measure of leverage-was positively correlated with NPAs, underscoring how funding pressures can lead to riskier lending behaviors.
According to RBI data referenced in government reports, the total gross advances of Scheduled Commercial Banks surged from ₹23.34 lakh crore in March 2008 to ₹61.01 lakh crore by March 2014. During this time, restructured standard loans made up 5.7% of the loan portfolio, even before the Asset Quality Review (AQR) took effect. When the AQR required these restructured loans to be reclassified, the true extent of credit losses came to light. By March 2018, the Gross NPA ratio for Public Sector Banks hit a staggering 14.58%, indicating that nearly one in seven rupees lent by these banks was non-performing-a figure that signals a crisis by any global standard.

**Performance Consequences of NPAs**

The financial fallout from high levels of non-performing assets (NPAs) was both severe and complex. To start, profitability took a major hit: public sector banks saw their overall return on assets (ROA) drop to a negative –0.22% in 2017–18, while return on equity (ROE) plummeted to –2.74%, as the need for provisions ate into their operating profits. Many public sector banks found themselves under the Reserve Bank of India's Prompt Corrective Action (PCA) framework, which imposed restrictions on lending, branch growth, and dividend payouts. On top of that, capital adequacy took a hit as provisions diminished retained earnings and simultaneously inflated the denominator in risk-weighted asset calculations. Moreover, as highlighted in efficiency studies, technical efficiency for public sector banks took a significant downturn during this time-the two-stage Data Envelopment Analysis (DEA) revealed that NPAs were responsible for a 16.2% efficiency gap compared to the efficiency frontier. Lastly, the NPA crisis had broader implications: credit growth for public sector banks plummeted to nearly zero in 2016–17, which stifled economic activity and contributed to a slowdown in GDP growth.
Research into NPA resolution strategies-like the SARFAESI Act, Lok Adalats, Debt Recovery Tribunals (DRTs), and the Insolvency and Bankruptcy Code (IBC)-shows that the IBC has emerged as the most effective method for resolving these issues, particularly in terms of recovery rates and the speed of resolution. While Lok Adalats managed a high volume of cases, the recovery amounts were relatively modest. DRTs, however, have shown improved performance since the introduction of the IBC, as the looming threat of insolvency has strengthened the bargaining power of creditors.

**Corporate Governance, Ownership, and Bank Performance**

The impact of ownership structure and corporate governance on the performance of Indian banks has attracted considerable academic interest, especially after the P.J. Nayak Committee Report (2014) [22] highlighted the need for governance reforms in public sector banks.

**Ownership and Performance**

The structure-conduct-performance (SCP) literature concerning Indian banks, as reviewed by Barua, Roy, and Raychaudhuri (2016) [3], highlights that government ownership of public sector banks (PSBs) significantly negatively impacts profitability. This happens through various channels, including political interference in how credit is allocated, restrictions on management's ability to make decisions, civil service pay structures that make it hard to attract top talent, and weaker accountability systems. Sanyal and Shankar (2011) [29] showed that both ownership and competition play a crucial role in determining bank productivity after the reforms, with privately-owned banks being more responsive to competitive pressures.
That said, the relationship between ownership and performance isn't always a negative one for PSBs. Many studies point out that PSBs have successfully met important social goals-like priority sector lending, promoting financial inclusion, and supporting rural banking-that private banks might shy away from. Additionally, the government's implicit backing of PSB liabilities has historically helped lower their funding costs. Therefore, when discussing the privatization of PSBs, it's essential to balance potential efficiency improvements against possible social impacts and stability concerns.

**Board Composition and Performance**

Bezawada and Adaelli (2020) [5] took a close look at 34 scheduled commercial banks from 2009 to 2018 and discovered that having a larger board and a higher percentage of independent directors positively influences return on assets (ROA). On the flip side, they found that a greater proportion of executive directors tends to hurt profitability. The makeup of the board also plays a role in asset quality: boards that are bigger and have more independent directors are linked to lower Net NPA ratios, indicating that better governance can help reduce credit risk. Supporting this, Sarkar and Sarkar (2016) [30] confirmed these results with a wider sample while accounting for bank-level fixed effects. Similarly, the study by Dong, Girardone, and Kuo (2017) [9] on Chinese banks, which used comparable methods, yielded similar findings, hinting that the relationship between governance and performance in emerging market banks tends to follow common trends. Liu *et al*. (2015) [16] and Francis *et al*. (2013) [10] also highlighted in their cross-country studies that board independence is particularly crucial in settings with weaker external monitoring-exactly the situation for Indian public sector banks (PSBs), where regulatory oversight often fills in for market discipline. These insights are highly relevant to the current discussions about the governance reforms needed to boost PSB performance.

**Critical Research Gaps**

The review of existing literature highlights several key gaps that future research needs to tackle:
**Gap 1 - Digital banking and FinTech:** Before 2020, there was hardly any thorough study looking into how the adoption of digital banking-like mobile banking usage, UPI transaction volumes, and branch rationalization-affects the cost efficiency and profitability of Indian commercial banks.

This is a significant oversight, especially considering the rapid digital transformation spurred by demonetization in 2016 and the introduction of the India Stack (Aadhaar, UPI, eKYC).

**Gap 2 - Small Finance Banks and Payments Banks:** Most of the literature focuses solely on scheduled commercial banks. The performance of the newly established small finance banks (SFBs) and payments banks, which cater to unique market segments such as microfinance, migrant workers, and rural communities, has been largely overlooked, even though they are becoming increasingly important in the financial system.

**Gap 3 - Gender diversity on bank boards:** Research on corporate governance and bank performance has largely ignored the impact of gender diversity in Indian bank boardrooms. International studies indicate that having more women on boards can enhance risk management and help reduce non-performing assets (NPAs)-a finding that is especially relevant to the ongoing reforms in India's banking governance.

**Gap 4 - Environmental, Social, and Governance (ESG) performance:** None of the studies reviewed have looked into the ESG performance of Indian banks or how it relates to their financial performance. As the Reserve Bank of India (RBI) updates its mandates to include green finance guidelines and climate risk disclosures, this gap is set to become even more significant.

**Gap 5 - Cross-country comparative benchmarking:** There aren't many studies that compare the performance of Indian banks with their BRICS counterparts (Brazil, Russia, China, South Africa) or ASEAN economies using a unified framework. Such comparisons could really help to frame the challenges and reforms in Indian banking within the larger context of emerging market trends.

**Gap 6 - Bank mergers and consolidation:** The consolidation of Public Sector Banks (PSBs) in India, which saw a drop from 27 PSBs in 2017 to just 12 in 2020 through various mergers, has been touched upon in some initial research by Maity *et al*. (2020) [17]. However, a thorough analysis of the efficiency and profitability of these mergers-especially the significant SBI associate bank mergers from 2017 and the multi-bank amalgamations that took place between 2019 and 2020-has yet to be fully explored in the existing literature.

**Thematic Synthesis: Key Findings across Strands**

**Table 3:** Thematic Synthesis of Key Findings from Reviewed Literature. Source: Authors' compilation.

| Research Strand | Consensus Finding | Level of Evidence | Key Caveats |
|---|---|---|---|
| CAMEL analysis | Private sector banks outperform PSBs on all CAMEL dimensions, especially earnings and asset quality | Strong | CAMEL rankings are static; do not control for bank-level characteristics or macroeconomic conditions |
| DEA efficiency | Foreign banks most efficient; private banks improving; PSBs least efficient (post-2014); NPAs reduce efficiency by ~16% | Strong | Results sensitive to input-output specification and returns-to-scale assumptions |
| Profitability determinants | CAR (+), NPA ratio (–), NIM (+), GDP growth (+) are the most robust determinants of ROA; bank size effects are non-linear | Strong | Some studies find CAR insignificant; results vary by estimation method |
| NPA crisis | NPA crisis 2015–18 was the primary driver of PSB profitability collapse; IBC most effective resolution mechanism | Strong | Long-run equilibrium effects of IBC on credit culture not yet established |
| Governance/ ownership | Board independence and private ownership improve ROA; government ownership associated with weaker performance due to political economy constraints | Moderate | Endogeneity between governance quality and performance is incompletely addressed in most studies |
| Macroeconomic effects | GDP growth is the strongest, most consistent macroeconomic driver; inflation effects are context-dependent | Strong | Most studies cover up to 2017; pandemic-period effects not covered |

**Conclusion**

This review article brings together around 45 studies on the performance of Indian commercial banks from 2000 to 2020, neatly organized into five key themes. The findings weave a clear and well-supported story about how Indian banks have evolved over the past two decades. The liberalization reforms of 1991 fundamentally changed the competitive and regulatory environment, paving the way for private sector banks that have consistently outperformed their peers in terms of efficiency, profitability, and asset quality. The NPA crisis from 2015 to 2018 marked a significant downturn, particularly affecting public sector banks, stemming from the aggressive credit expansion seen between 2009 and 2014.

Key factors influencing the profitability of Indian banks include capital adequacy, asset quality (measured by the NPA ratio), net interest margin, and GDP growth. The quality of corporate governance-especially the independence of the board-plays a crucial role in both profitability and managing credit risk. The evolution of research methods in this field has been noteworthy, moving from basic ratio analysis to more sophisticated approaches like CAMEL rankings, DEA efficiency frontier analysis, and GMM-based dynamic panel models that effectively tackle endogeneity issues. However, there are still significant gaps in research concerning digital banking, ESG performance, small finance banks, gender diversity in governance, and efficiency analysis post-merger.

Looking ahead, future studies should consider using quasi-experimental designs that take advantage of regulatory changes, such as the AQR of 2015 or the IBC of 2016, as natural experiments. This approach could help uncover causal relationships rather than just correlations regarding what drives performance in Indian banks. The next decade,

influenced by digital transformation, green finance initiatives, and recovery from the pandemic, promises exciting opportunities for a new wave of research on banking performance in India.

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