

# FINANCIAL PERFORMANCE AND OPERATIONAL EFFICIENCY OF LEADING INDIAN PRIVATE-SECTOR BANKS: A COMPARATIVE LONGITUDINAL ANALYSIS OF HDFC BANK AND AXIS BANK

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## Abstract

This study comparatively evaluates the financial performance and operational efficiency of HDFC Bank and Axis Bank over 2015–2025 using a multidimensional framework. The analysis focuses on Return on Assets (ROA), Return on Equity (ROE), Net Interest Margin (NIM), Cost-to-Income Ratio (CIR), and CASA ratio, with Net Profit Margin (NPM) and Return on Capital Employed (ROCE) as supplementary indicators. Based on 22 bank-year observations, the findings indicate that HDFC Bank maintained greater consistency in profitability, efficiency and returns throughout most of the study period. In contrast, Axis Bank experienced significant deterioration in profitability during 2017–2021, followed by a strong recovery from 2022 onwards. In the recent period, Axis Bank recorded NIM and ROE levels comparable to or higher than HDFC Bank. Overall, HDFC Bank demonstrates sustained performance stability, whereas Axis Bank shows greater volatility but substantial recovery. The study contributes to comparative banking research by highlighting the distinction between performance stability and recovery.

**Keywords:** HDFC Bank; Axis Bank; ROA; ROE; NIM; CIR; CASA; Bank Performance; Indian Banking.

## 1. Introduction

Banks occupy a central position in financial intermediation by mobilising deposits, allocating credit and transforming financial resources into productive investment. Consequently, the assessment of bank performance requires consideration of profitability, efficiency and the quality of the bank's funding and intermediation activities. Traditional financial-ratio analysis frequently uses **Return on Assets (ROA)** and **Return on Equity (ROE)** as principal measures of bank profitability. ROA captures the ability of management to generate earnings from the asset base, while ROE reflects the return generated for shareholders. Contemporary banking research also employs Net Interest Margin (NIM) and Cost-to-Income Ratio (CIR) to capture core intermediation profitability and operating efficiency.

The importance of efficiency is particularly relevant in the Indian banking sector. Previous empirical research on Indian banks has demonstrated that cost, revenue and profit efficiency are associated with bank profitability, while recent research has continued to emphasise the importance of profitability and efficiency in explaining banking performance. Against this background, the present study compares HDFC Bank and Axis Bank, two major private-sector banking institutions, over an eleven-year period from 2015 to 2025. The study does not simply ask which bank generated higher profits. Instead, it addresses a broader question: Which bank demonstrated superior and more sustainable financial performance, and what role did profitability, interest margins, operating efficiency and deposit structure play in that performance? This distinction is important because a bank may report strong profitability in a particular year without demonstrating consistent operational performance over time.

## 2. Review of Literature

**Misra (2015)** examined the determinants of profitability of Indian banks using panel data for 121 banks during 2000–2011. The study found that asset quality, loan-to-total-assets ratio, NIM and non-interest income were important determinants of ROA and ROE. The findings highlight the importance of interest income and asset management in bank profitability.

**Almaqtari et al. (2019)** examined 69 Indian commercial banks during 2008–2017 using ROA and ROE as profitability measures. The study found that bank size, asset management, operating efficiency, leverage and asset quality significantly influence bank profitability.

**Sarkar and Rakshit (2023)** investigated the performance of Indian commercial banks using ROA, ROE and NIM. Their study found that both bank-specific and macroeconomic factors influence banking performance, demonstrating that profitability is affected by conditions beyond internal bank management.

**Rai et al. (2023)** examined the determinants of NIM, ROA and ROE using Indian banking data for 2005–2021. The study found that bank-specific factors were particularly important for NIM, while macroeconomic and policy factors were important for ROA and ROE.

**Sarma and Nikaido (2015)** investigated profitability and soundness among Indian banks and found differences in performance across ownership groups. Their findings suggest that profitability should be evaluated together with financial soundness rather than using a single profitability indicator.

**Assessing the effects of cost, revenue and profit efficiency on bank performance (2021)** examined 70 Indian commercial banks over 1997–2017. The study found that higher cost, revenue and profit efficiency significantly improve bank profitability. The results emphasise the importance of efficient resource utilisation in banking.

**Impact of Bank Efficiency on the Profitability of the Banks in India (2022)** analysed 33 Indian banks using 527 bank-year observations. The study found that the Cost-to-Income Ratio has a significant negative effect on ROA and NIM. This finding directly supports the use of the Cost-to-Income Ratio as an important efficiency indicator in the present study.

**Rai et al. (2023)** further showed that non-performing assets and business per employee are important determinants across different dimensions of bank profitability. The study demonstrates that profitability depends on both asset quality and operational characteristics.

**Misra and Sahoo (2026)** examined 50 Indian commercial banks from 2005–2024 and compared conventional efficiency with dynamic growth efficiency. Their findings show that growth efficiency is a significant determinant of bank profitability and can provide additional information beyond conventional efficiency measures such as the Cost-to-Income Ratio.

### 3. Research Objectives

The study has five principal objectives:

1. To examine the long-term profitability trends of HDFC Bank and Axis Bank using ROA and ROE.
2. To compare the interest-margin performance of the two banks using NIM.
3. To evaluate operational efficiency using the Cost-to-Income Ratio.
4. To examine the role of CASA deposits in the banks' funding structure.
5. To determine whether HDFC Bank's performance advantage reflects persistent superiority or whether Axis Bank's recent recovery has reduced the historical performance gap.

### 4. Research Questions

**RQ1:** How did the profitability of HDFC Bank and Axis Bank evolve between 2015 and 2025?

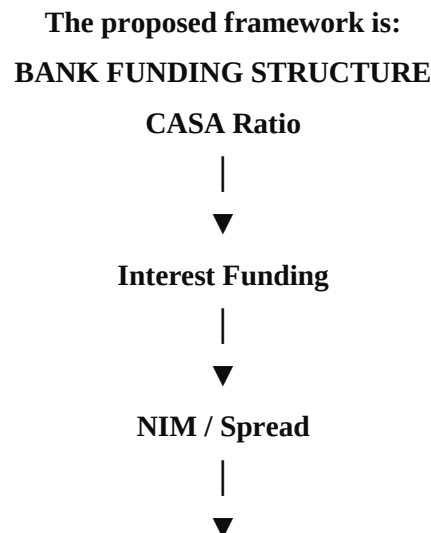
**RQ2:** Which bank demonstrated greater stability in ROA and ROE?

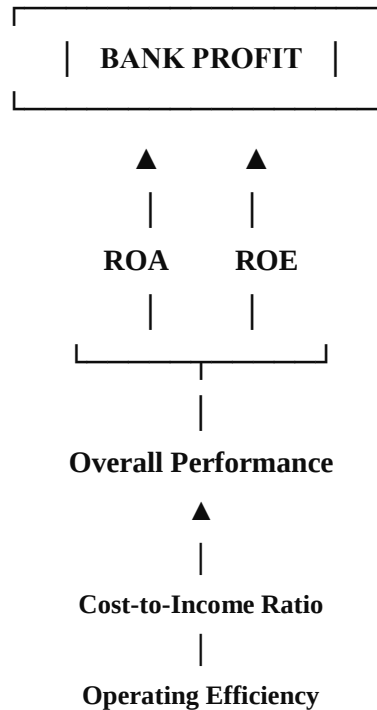
**RQ3:** How did NIM and Cost-to-Income Ratio contribute to differences in bank performance?

**RQ4:** Did Axis Bank's recent performance recovery materially narrow its historical gap with HDFC Bank?

**RQ5:** Which bank demonstrated superior overall performance when profitability, efficiency and funding structure are considered simultaneously?

### 5. Conceptual Framework





This framework is preferable to presenting a large number of unrelated ratios because it establishes a logical relationship between funding → intermediation → efficiency → profitability.

## 6. Selection of Variables

| Dimension                | Ratio             | Role in study | Interpretation                                                     |
|--------------------------|-------------------|---------------|--------------------------------------------------------------------|
| Profitability            | ROA               | Primary       | Higher = better                                                    |
| Profitability            | ROE               | Primary       | Higher = better                                                    |
| Intermediation           | NIM               | Primary       | Higher = better, subject to risk/asset-quality considerations      |
| Efficiency               | Cost-to-Income    | Primary       | Lower = better                                                     |
| Funding structure        | CASA              | Primary       | Higher generally indicates greater reliance on lower-cost deposits |
| Profitability robustness | Net Profit Margin | Supplementary | Higher = better                                                    |
| Capital efficiency       | ROCE              | Supplementary | Higher = better                                                    |

## 7. Research Methodology

### 7.1 Research design

The study uses a comparative longitudinal research design.

The sample consists of:

- HDFC Bank
- Axis Bank

The observation period is 2015–2025.

The dataset therefore contains 22 bank-year observations.

### 7.2 Data source

The empirical analysis is based on the financial-ratio dataset collected annual reports and recognized financial database.

**Table 01. Average performance HDFC and AXIS bank during the year 2015 to 2025**

| Indicator         | HDFC Bank | Axis Bank | Relative assessment |
|-------------------|-----------|-----------|---------------------|
| ROA               | 1.72%     | 0.89%     | HDFC superior       |
| ROE               | 15.39%    | 9.46%     | HDFC superior       |
| NIM               | 3.60%     | 3.01%     | HDFC superior       |
| Cost-to-Income    | 37.61%    | 44.83%    | HDFC more efficient |
| CASA*             | 43.46%    | 45.58%    | Axis higher         |
| Net Profit Margin | 23.12%    | 13.38%    | HDFC superior       |
| ROCE              | 3.12%     | 2.58%     | HDFC superior       |

HDFC Bank leads Axis Bank on **ROA, ROE, NIM, Cost-to-Income, NPM and ROCE** over the full study period. Axis Bank's principal advantages in e its **higher average CASA ratio**.

## 9. Empirical Results

### 9.1 Return on Assets

ROA is arguably the most important starting point for comparing bank profitability because it evaluates how effectively a bank converts its asset base into earnings.

**Table 02. ROA comparison of HDFC and AXIS bank during the year 2015 to 2025**

| Period | HDFC Bank | Axis Bank |
|--------|-----------|-----------|
| 2015   | 1.73      | 1.59      |
| 2016   | 1.73      | 1.56      |
| 2017   | 1.68      | 0.61      |

| Period | HDFC Bank | Axis Bank |
|--------|-----------|-----------|
| 2018   | 1.64      | 0.03      |
| 2019   | 1.69      | 0.58      |
| 2020   | 1.71      | 0.17      |
| 2021   | 1.78      | 0.66      |
| 2022   | 1.78      | 1.10      |
| 2023   | 1.78      | 0.72      |
| 2024   | 1.68      | 1.68      |
| 2025   | 1.72      | 1.63      |

HDFC Bank's ROA remained within a narrow range of approximately 1.64% to 1.78%. This stability indicates that the bank consistently generated returns from its asset base despite changes in the banking environment. Axis Bank followed a fundamentally different trajectory. Its ROA declined from 1.59% in 2015 to only 0.03% in 2018. It remained substantially below HDFC Bank until the later recovery period.

The convergence in 2024 is particularly noteworthy, when both banks recorded 1.68%. In 2025, HDFC Bank remained slightly ahead at 1.72% compared with Axis Bank's 1.63%.

The evidence strongly supports the argument that HDFC Bank's principal advantage was stability rather than merely a higher level of profitability.

## 9.2. Return on Equity

**Table 03. ROE comparison of HDFC and AXIS bank during the year 2015 to 2025**

| Year | HDFC  | Axis  |
|------|-------|-------|
| 2015 | 16.47 | 16.46 |
| 2016 | 16.91 | 15.46 |
| 2017 | 16.26 | 6.59  |
| 2018 | 16.45 | 0.43  |
| 2019 | 14.12 | 7.01  |
| 2020 | 15.35 | 1.91  |
| 2021 | 15.27 | 6.48  |
| 2022 | 15.39 | 11.30 |
| 2023 | 15.74 | 7.63  |
| 2024 | 13.89 | 16.54 |

| Year | HDFC  | Axis  |
|------|-------|-------|
| 2025 | 13.43 | 14.67 |

The banks were almost identical in 2015, with HDFC Bank recording 16.47% and Axis Bank 16.46%. The subsequent divergence is substantial. Axis Bank's ROE fell to 0.43% in 2018 and 1.91% in 2020, whereas HDFC Bank maintained ROE above 14% throughout the period. The later recovery is equally significant. Axis Bank reached 16.54% in 2024, exceeding HDFC Bank's 13.89%.

### 9.3. Net Interest Margin

NIM represents the core earnings spread generated through banking intermediation.

**Table 04. NIM comparison of HDFC and AXIS bank during the year 2015 to 2025**

| Year | HDFC | Axis |
|------|------|------|
| 2015 | 3.79 | 3.07 |
| 2016 | 3.89 | 3.20 |
| 2017 | 3.83 | 3.00 |
| 2018 | 3.76 | 2.69 |
| 2019 | 3.87 | 2.71 |
| 2020 | 3.67 | 2.75 |
| 2021 | 3.71 | 2.93 |
| 2022 | 3.48 | 2.81 |
| 2023 | 3.52 | 3.26 |
| 2024 | 3.00 | 3.37 |
| 2025 | 3.13 | 3.37 |

HDFC Bank maintained a clear NIM advantage from 2015 through 2023.

Its highest NIM was 3.89% in 2016. Axis Bank's NIM was considerably weaker during the 2017–2020 period but subsequently improved. The most important recent finding is that Axis Bank's NIM reached 3.37% in both 2024 and 2025, exceeding HDFC Bank's 3.00% and 3.13%, respectively. This suggests that the Axis Bank recovery involved not only improved bottom-line profitability but also an improvement in its core interest-margin performance.

## 9.4. Operating Efficiency

**Table 05. Cost-to-Income Ratio of HDFC and AXIS bank during the year 2015 to 2025**

| Year | HDFC  | Axis  |
|------|-------|-------|
| 2015 | 36.84 | 34.74 |
| 2016 | 36.69 | 35.70 |
| 2017 | 37.84 | 46.42 |
| 2018 | 39.62 | 51.64 |
| 2019 | 38.41 | 44.28 |
| 2020 | 38.52 | 50.03 |
| 2021 | 40.37 | 47.76 |
| 2022 | 41.05 | 48.83 |
| 2023 | 38.35 | 66.70 |
| 2024 | 31.52 | 36.01 |
| 2025 | 40.50 | 47.10 |

The Cost-to-Income trajectory provides strong evidence of differences in operating efficiency.

Axis Bank initially performed slightly better than HDFC Bank in 2015 and 2016. However, this advantage disappeared after 2016. The Axis Bank ratio reached 51.64% in 2018 and an exceptionally high 66.70% in 2023. HDFC Bank also experienced some deterioration, but its ratio remained considerably more stable. The 2024 decline in HDFC Bank's ratio to 31.52% indicates a substantial improvement in operating efficiency during that year.

## 9.5. CASA and Funding Structure

CASA is included as a strategic funding variable rather than as a direct profitability measure.

**Table 06. CASA comparison of HDFC and AXIS bank during the year 2015 to 2025**

| Year | HDFC  | Axis  |
|------|-------|-------|
| 2015 | 44.03 | 44.78 |
| 2016 | 43.24 | 47.33 |
| 2017 | 48.03 | 51.41 |
| 2018 | 43.49 | 53.75 |
| 2019 | 42.37 | 44.37 |
| 2020 | 42.23 | 41.19 |

| Year | HDFC  | Axis  |
|------|-------|-------|
| 2021 | 46.11 | 44.92 |
| 2022 | 48.16 | 44.99 |
| 2023 | 44.38 | 47.15 |
| 2024 | 42.3  | 45.6  |
| 2025 | 34.79 | 40.76 |

Axis Bank generally recorded a higher CASA ratio than HDFC Bank during the earlier years. Its highest reported value was 53.75% in 2018. However, the CASA evidence also demonstrates why individual ratios should not be interpreted in isolation. Despite Axis Bank's relatively strong CASA position, its profitability deteriorated substantially during the same period. therefore, a high CASA ratio does not automatically translate into superior ROA or ROE. The effectiveness with which low-cost funding is transformed into profitable assets, together with credit quality and operating efficiency, is also important. The 2024 CASA value of zero for both banks in the supplied dataset should not be interpreted as an actual zero CASA ratio. It should be validated against the original source before publication.

## 10. Integrated Performance Matrix

**Table 07. Comparative performance of HDFC and AXIS bank during the year 2015 to 2025**

| Indicator       | HDFC Bank         | Axis Bank                | Evidence                         |
|-----------------|-------------------|--------------------------|----------------------------------|
| ROA             | Strong            | Volatile → recovery      | HDFC                             |
| ROE             | Strong and stable | Sharp decline → recovery | HDFC historically                |
| NIM             | Strong            | Improving strongly       | HDFC historically; Axis recently |
| Cost-to-Income  | Lower             | Higher and volatile      | HDFC                             |
| CASA            | Strong            | Generally higher         | Axis                             |
| NPM             | Strong            | Volatile → recovery      | HDFC                             |
| ROCE            | Stable            | Volatile                 | HDFC                             |
| Recent momentum | Moderate          | Strong                   | Axis                             |

## 11. Period-Based Analysis

**Table 08. Phase-wise comparison of HDFC and AXIS bank during the year 2015 to 2025**

| Period    | HDFC Bank  | Axis Bank            | Dominant interpretation |
|-----------|------------|----------------------|-------------------------|
| 2015–2016 | Strong     | Strong               | Comparable              |
| 2017–2020 | Stable     | Severe deterioration | HDFC dominance          |
| 2021–2022 | Strong     | Recovery begins      | HDFC advantage narrows  |
| 2023      | Strong     | Efficiency stress    | HDFC advantage          |
| 2024–2025 | Moderating | Strong recovery      | Convergence             |

## 12. Discussion

The empirical evidence indicates that the competitive positions of the two banks cannot be adequately understood using a single financial ratio. HDFC Bank's performance is characterised by persistent profitability and relatively low volatility. Its ROA remained close to 1.7% across the entire period, while ROE remained consistently positive and comparatively high. Its NIM was also stronger than Axis Bank's for most of the period. In addition, its lower average Cost-to-Income Ratio suggests superior operating efficiency.

Axis Bank presents a fundamentally different trajectory. The bank experienced a substantial deterioration in profitability during 2017–2020. The decline in ROA and ROE was particularly severe, suggesting that the deterioration was not merely an isolated change in one accounting indicator. However, the post-2021 period demonstrates substantial recovery. The most important evidence is the convergence in profitability during 2024–2025. Axis Bank achieved:

- ROA of 1.68% in 2024;
- ROE of 16.54% in 2024;
- NIM of 3.37% in 2024 and 2025;
- Net Profit Margin of 22.73% in 2024.

This suggests that Axis Bank's competitive position improved substantially during the latter part of the sample.

The results therefore point toward a distinction between performance level and performance resilience.

HDFC Bank has the stronger resilience profile.

Axis Bank has the stronger recovery profile.

## 13. Theoretical Implications

The findings have several implications for banking-performance research.

First, profitability should not be assessed using a single indicator. ROA, ROE and NIM capture different dimensions of banking performance, while Cost-to-Income provides an efficiency perspective. Recent empirical literature similarly employs multiple accounting-based performance indicators rather than relying exclusively on one measure. Second, efficiency appears to be an important component of sustained profitability. Prior Indian evidence indicates that cost, revenue and profit efficiency can significantly influence bank profitability.

Third, the findings suggest that dynamic performance analysis is more informative than cross-sectional ranking. A bank that ranks lower in one period may undergo substantial restructuring and become much more competitive later.

## 14. Managerial Implications

For HDFC Bank, the findings suggest that maintaining its historical advantages in NIM, ROA and operating efficiency is more important than simply maximising short-term profitability.

For Axis Bank, the findings highlight the success of its recent recovery but also indicate the need to ensure that improved profitability is sustainable. In particular, management should focus on:

- Maintaining NIM
- Controlling operating expenses
- Preserving CASA funding
- Sustaining ROA and ROE
- Preventing renewed deterioration in Cost-to-Income;
- Converting recent recovery into long-term stability.

## 15. Conclusion

This study comparatively examined HDFC Bank and Axis Bank over 2015–2025 using five principal banking-performance indicators: ROA, ROE, NIM, Cost-to-Income Ratio and CASA, supplemented by NPM and ROCE. The evidence demonstrates that HDFC Bank was the more consistent performer across the full period. Its ROA remained remarkably stable, its ROE remained comparatively high, and its NIM was superior to Axis Bank for most of the study period. Its operating efficiency was also generally stronger. Axis Bank experienced a substantial deterioration in performance during 2017–2021. The decline in ROA, ROE and NPM was particularly pronounced. Nevertheless, the bank subsequently achieved a strong recovery. The most significant finding is the convergence during 2024–2025. Axis Bank's NIM exceeded HDFC Bank's, its ROE exceeded HDFC Bank's in 2024, and its ROA approached HDFC Bank's level.

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