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# Comparative Analysis of Private Sector Banks: An Application of Camel Model

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**Abstract**

*Indian banking system has transformed in recent years due to globalization in the world market, which has resulted in fierce competition. In this article, an attempt has been made to find out the difference between the two private sector banks namely at AXIS Bank and HDFC Bank. Various commercial banks are operating in India. The banks in India have been categorized into Public sector, Private sector and foreign banks. For the purpose of profitability analysis, for comparing capital adequacy we have selected samples of two private sector banks by applying CAMEL analysis technique. In the two private sector banks data we have applied t-test to measure its performance efficiency. As per the derived data, we can say that in net profit margin and return on asset we have acceptance of the null hypothesis, as it is saying that there is no significance level of difference between the two selected samples. On the other side for CAR, Return on Net Worth, Return on Long Term Fund, is having the rejection of null hypothesis as it is saying that there is significance of difference between two selected samples.*

***Keywords:*** *CAMELS Model, AXIS Bank, HDFC Bank and Student t-test.*

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## 1. INTRODUCTION

The private-sector banks in India represent part of the Indian banking sector that is made up of both private and public sector banks. The "private-sector banks" are banks where greater parts of stake or equity are held by the private shareholders and not by government. Banking in India has been dominated by public sector banks since the 1969 when all major banks were nationalised by the Indian government. However, since liberalisation in government banking policy in 1990s, old and new private sector banks have re-emerged. They have grown faster and bigger over the two decades since liberalisation using the latest technology, providing contemporary innovations and monetary tools and techniques. The private sector banks are split into two groups by financial regulators in India, old and new. The old private sector banks existed prior to the nationalisation in 1969 and kept their independence because they were either too small or specialist to be included in nationalisation. The new private sector banks are those that have gained their banking license since the liberalisation in the 1990s.

### 1.1 Old Private-Sector Banks

The banks, which were not nationalized at the time of bank nationalization that took place during 1969 and 1980's are known to be the old private-sector banks. These were not nationalized, because of their small size and regional focus. Most of the old private-sector banks are closely held by certain communities their operations are mostly restricted to the areas in and around their place of origin. Their Board of directors mainly consist of locally prominent personalities from trade and business circles. One of the positive points of these banks is that, they lean heavily on service and technology and as such, they are likely to attract more business in days to come with the restructuring of the industry round the corner.

**List of the old private-sector banks in India:**

| | | | | | |
|---|---|---|---|---|---|
| **1** | Catholic Syrian Bank Ltd. | **2** | City Union Bank Ltd. | **3** | Dhanalakshmi Bank Ltd. |
| **4** | Federal Bank Ltd. | **5** | Jammu and Kashmir Bank Ltd. | **6** | Karnataka Bank Ltd. |
| **7** | Karur Vysya Bank Ltd. | **8** | Lakshmi Vilas Bank Ltd. | | |

### 1.2 New Generation Private-Sector Banks

The banks, which came in operation after 1991, with the introduction of economic reforms and financial sector reforms are called "new private-sector banks". Banking Regulation Act was then amended in 1993, which permitted the entry of new private-sector banks in the Indian banking sector. However, there were certain criteria set for the establishment of the new private-sector banks, some of those criteria being: The bank should have a minimum net worth of Rs. 200 Crores.

- The promoters holding should be a minimum of 25% of the paid-up capital.
- Within 3 years of the starting of the operations, the bank should offer shares to public and their net worth must increased to 300 crores.

**List of the new private-sector banks in India**

| | | | | | |
|---|---|---|---|---|---|
| **1** | Development Credit Bank Ltd. | **2** | HDFC Bank Ltd. | **3** | ICICI Bank Ltd. |
| **4** | INDU SIND Bank Ltd. | **5** | Kotak Bank Ltd. | **6** | AXIS Bank Ltd. |
| **7** | YES Bank Ltd. | **8** | IDFC Bank Ltd. | **9** | Bandhan Bank |

## 2. AN OVERVIEW TO SELECTED BANKS

**2.1 Axis Bank:** Axis Bank established in 1993 was the first of the new private banks to have begun operations in 1994 after the Government of India allowed new private banks to be established. Axis Bank Ltd. has been promoted by the largest and the best Financial Institution of the country, UTI. The Bank was set up with a capital of Rs. 115 crore, with UTI contributing Rs. 100 crore, LIC – Rs. 7.5 crore and GIC and its four subsidiaries contributing Rs. 1.5 crore each. Axis Bank is one of the first new generation private sector banks to have begun operations in 1994. The Bank was promoted in 1993, jointly by Specified Undertaking of Unit Trust of India (SUUTI) (then known as Unit Trust of India),Life Insurance Corporation of India (LIC), General Insurance Corporation of India (GIC), National Insurance Company Ltd., The New India Assurance Company Ltd., The Oriental Insurance Company Ltd. and United India Insurance Company Ltd. The shareholding of Unit Trust of India was subsequently transferred to SUUTI, an entity established in 2003. Axis Bank is the third largest private sector bank in India. The Bank offers the entire spectrum of financial services to customer segments covering Large and Mid-Corporate, MSME, Agriculture and Retail Businesses. With a balance sheet size of Rs. 6,01,468 crore as on 31st March 2017, Axis Bank has achieved consistent growth and with a 5 year CAGR (2011-12 to 2016-17) of 16% in Total Assets, 13% in Total Deposits, 17% in Total Advances.

**2.2 HDFC Bank:** HDFC Bank Limited was incorporated in August 1994. It was promoted by Housing Development Finance Corporation Limited (HDFC), India's largest housing finance company. It was among the first companies to receive an 'in principle' approval from the Reserve Bank of India (RBI) to set up a bank in the private sector. The Bank started operations as a scheduled commercial bank in January 1995 under the RBI's liberalization policies. As on 31st March, 2015 the authorized share capital of the Bank is Rs. 550 crore. The paid-up share capital of the Bank as on the said date is Rs501,29,90,634/- ( 2506495317 ) equity shares of Rs. 2/- each). The HDFC Group holds 21.67 % of the Bank's equity and about 18.87 % of the equity is held by the ADS / GDR Depositories (in respect of the bank's American Depository Shares (ADS) and Global Depository Receipts (GDR) Issues). 32.57 % of the equity is held by Foreign Institutional Investors (FIIs) and the Bank has 4,41,457 shareholders. As of 31 March 2017, the bank had assets of INR 863840 cr. For the fiscal year 2016-17, the bank has reported net profit of INR 14550 cr. up 18.33% from the previous fiscal year. Its branches base stood at 4715 as on 31 March 2017.

## 3. REVIEW OF LITERATURE

Literature review is a study involving a collection of literatures in the selected area of research in which the scholar has limited experience. In the past, various studies relating to the financial performance of banks have been conducted by researchers. Some of them are illustrated below:

- **K.V.N. Prasad and Dr. A.A. Chari (2011)** conducted a study to evaluate financial performance of public and private sector banks in India. In this study they compared financial performance of top four banks in India viz., SBI, PNB, ICICI and HDFC and concluded that on overall basis HDFC rated top most position.
- **Deepti Tripathi, Kishore Meghani and Swati Mahajan (2014)** conducted a study to compare the financial performance of Axis and Kotak Mahindra bank (Private Sector banks). The CAMELS' analysis and t-test concludes that there is no significance difference between the

Axis and Kotak Mahindra bank's financial performance but the Kotak Mahindra bank performance is slightly less compared with Axis Bank.

- **Dr. P. Karthikeyan, B. Shangari (2014)** calibrating financial soundness among selected private sector bank in india by using CAMEL model. The present study attempts to show the relative financial position and performance of each bank and a comparative result over a five year period from 2009 to 2013. This study aimed at six private sector banks based on the statistical information of net profit, total assets and market capitalization during the year 2013.
- **Golam Mohiuddin, (2014)** evaluated Sonali Bank Limited and AB Bank Limited in his study by using CAMEL Parameters, the latest model of financial analysis. Through this model, it is highlighted that the position of the banks under the study is sound and satisfactory so far as their capital adequacy, asset quality, management capability and liquidity is concerned.
- **C.A. Ruchi Gupta, (2014)** explained in her study that due to radical changes in the banking sector in the recent years, the central banks all around the world have improved their supervision quality and techniques. In evaluating the function of the banks, many of the developed countries are now following uniform financial rating system (CAMEL RATING) along with other existing procedures and techniques. The results showed that there is a statistically significant difference between the CAMEL ratios of all the Public Sector Banks in India, thus, signifying that the overall performance of Public Sector Banks is different. Also, it can be concluded that the banks with least ranking need to improve their performance to come up to the desired standards.
- **Sebastian, Francis and Milonas, (2017)** revealed that there is a dramatic changes in the UK banking sector over the 1989–2013 period, seen through the lens of a newly assembled database built from banks' regulatory reports. This database, which they refered to as the Historical Banking Regulatory Database (HBRD), covers financial statement and confidential regulatory information for all authorized UK banks and building societies at the consolidated (group) and standalone (bank) level. As a result, it permits both a more comprehensive picture of the UK banking sector as well as a more refined view of sub-sectors, such as small banks, than possible with other existing data sets (e.g. from external vendors or aggregate statistics). The overview focuses on developments in banks' CAMEL characteristics (Capital adequacy, Asset quality, Management skills, Earnings performance and Liquidity), and relates these developments to concurrent regulatory changes, such as the Basel Market Risk Amendment. They also suggested ways in which the database can be used for evidence-based research and policy analysis.

## 4. AN OVERVIEW ON CAMEL MODEL

The CAMELS ratings or Camels rating is a supervisory rating system originally developed in the U.S. to classify a banks overall condition. It's applied to every bank and credit union in the U.S. (approximately 8,000 institutions) and is also implemented outside the U.S. by various banking supervisory regulators.

The ratings are assigned based on a ratio analysis of the financial statements, combined with on-site examinations made by a designated supervisory regulator. In the U.S. these supervisory

regulators include the Federal Reserve, the national credit union administration and the Federal Deposit Insurance Corporation.

The components of a bank's condition that are assessed:

- C- Capital adequacy
- A-Assets Quality
- M- Management Capability
- E- Earnings
- L- Liquidity (also called asset liability management)
- S- Sensitivity (sensitivity to market risk, especially interest rate risk)

**Table No. 1: Ratios included in CAMELS Model**

| | | | |
|---|---|---|---|
| **CAMELS MODEL** | **C** | **Capital adequacy:** It is important for a bank to maintain depositors' confidence and preventing the bank from going bankrupt. It reflects the overall financial condition of banks and also the ability of management to meet the need of additional capital. The following ratios measure capital adequacy: | |
| | | **Capital Adequacy Ratio (CAR):** | The capital adequacy ratio is developed to ensure that banks can absorb a reasonable level of losses occurred due to operational losses and determine the capacity of the bank in meeting the losses. The higher the ratio, the more will be the protection of investors. The banks are required to maintain the capital adequacy ratio (CAR) as specified by RBI from time to time. As per the latest RBI norms, the banks should have a CAR of 9 per cent. |
| | | **Debt-Equity Ratio (DER):** | This ratio indicates the degree of leverage of a bank. It indicates how much of the bank business is financed through debt and how much through equity. It is the proportion of total outside liability to net worth. Higher ratio indicates less protection for the creditors and depositors in the banking system. |
| | **A** | **Assets Quality:** This indicates what types of advances the bank has made to generate interest income. When loans are given to highly rated companies, the rates attracted are lower than that of lower rated doubtful companies. Thus, asset quality indicates the type of debtors of the bank. Banks determine how many of their assets are at financial risk and how much allowance for potential losses they must make. | |
| | | **Total Assets Turnover Ratio (TATR):** | This ratio measures the efficiency in utilization of the assets. It is arrived at by dividing sales by total assets. Total Assets Turnover Ratio=Sales/Total Assets |
| | | **Loan Ratio (LR):** | The ratio provides a general measure of the financial position of a bank, including its ability to meet financial requirements for outstanding loans.<br>Loan Ratio = Loans/Total Assets. |

| | | | |
|---|---|---|---|
| | **M** | **Management Efficiency:** The bank management efficiency guarantees the growth and survival of a bank. This parameter is used to evaluate management quality so as to assign premium to better quality banks and discount poorly managed ones. It involves analysis of efficiency of management in generating business (top-line) and in maximizing profits (bottom-line). | |
| | | **Credit Deposit Ratio (CDR):** | It indicates the ability of a bank to convert its deposits into higher earning advances. It is the ratio of how much a bank lends out of the deposits it has mobilized. Credit Deposit Ratio=Total Advances/Customer Deposit. |
| | | **Total Income/Capital Employed Ratio (TICER):** | This measure narrows the focus to gain a better understanding of a company's ability to generate returns from its available capital base. |
| | **E** | **Earning Quality:** This parameter lays importance on how a bank earns its profits. This also explains the sustainability and growth in earnings in the future. Earning quality represents the quality of a bank's profitability and its capability to maintain quality and earn consistently. This ratio measures the profitability or the operational efficiency of the banks. | |
| | | **Net Profit Ratio (NPR):** | Net profit ratio shows the operational efficiency of the business. Decreases in the ratio indicate managerial inefficiency and excessive selling and distribution expenses and Increase shows better performance. Net Profit Ratio= (Net Profit/Total Income)*100 |
| | | **Dividend per Share (DPS):** | Dividend per share indicates the return earned per share. This ratio shows the amount payable per share to equity shareholders. Dividend per share ratio ignores earnings retained in the business. This ratio provides the better information about earning for equity shareholders. **Dividend per Share = Dividend on Equity Share Capital / No. of Equity Shares** |
| | | **Earnings per share: (EPS)** | Earnings per share indicate the return earned per share. This ratio measures the market worth of the shares of the company (Banks). Higher earnings per share shows better future prospects of the Banks. EPS indicates whether the earning power of the bank has increased or not. **Earnings per Share = Profit after tax-Preference Dividend / No. of Equity Shares** |
| | | **Return on Net worth (RONW):** | This ratio measures the overall profitability, the operational efficiency and borrowing policy of the enterprise. It indicates the relationship of net profit with capital employed in the business. The primary objective of business is to maximize its earnings and this ratio indicates the extent to which this primary objective of business is being achieved. **Return on Net Worth = Net Profit / Net-worth** |

| | | | |
|---|---|---|---|
| | | **Return on Assets (ROA):** | Higher return on asset means greater returns earned on assets deployed by the bank. This ratio measures the return on assets employed or efficiency in utilization of the assets. **Return on Assets = Net Profit / Total Assets** |
| | **L** | **Liquidity Ratios:** Liquidity is very important for any organization dealing with money. For a bank, Liquidity is a crucial aspect which represents its ability to meet its financial obligations. Liquidity ratios are calculated to measure the short-term financial soundness of the bank. The ratio assesses the capacity of the bank to repay its short-term liability. This ratio is also an effective source to ascertain, whether the working capital has been effectively utilised. Liquidity in the ratio means ability to repay loans. If a bank does not have sufficient liquidity, it may not be in a position to meet its commitments and thereby may lose its credit worthiness. | |
| | | **Current Ratio (CR):** | Current ratio judges whether current assets are sufficient to meet the current liabilities or not. It measures the liquidity position of the bank in terms of its short-term working capital requirement. **Current Ratio = Current Assets/ Current Liabilities** |
| | | **Liquidity/Quick Ratio (QR):** | Liquid assets are current assets less stock and prepaid expenses. Liquid assets include cash in hand, balance with RBI, balance with other banks (both in India and abroad) and money at call and short notice. Current liabilities include short-term borrowings, short-term deposits, bills payables and outstanding expenses. |
| | **S** | **Sensitivity to Market Risk:** Sensitivity focuses on an institution's ability to identify, monitor, manage and control its market risk, and provides institution management with a clear and focused indication of supervisory concerns in this area. | |
| | | **Interest Spread Ratio (ISR):** | Spread is the difference between interest earned and interest paid. So spread is the amount available to the commercial banks for meeting their administrative, operating and other expenses. As a matter of practice, banks try to increase the spread volume so that it is sufficiently available to meet the non-interest expenses and the remainder contributes to the profit volume. **Spread Ratio (%) = (Spread / Working Fund)*100** |

## 5. RESEARCH METHODOLOGY

CAMELS Model is basically ratio based model for evaluating the performance of banks. It is a management tool that measures Capital Adequacy, Assets Quality, Earnings, Liquidity and Sensitivity of financial institutions. The present study adopts analytical and descriptive research design. The data of the sample banks for a period of five years starting from 2013 to 2017 have been collected from the annual reports published by the selected banks. Two Private Sector Banks AXIS Bank and HDFC Bank are selected for the purpose of the study. While analyzing and

interpreting the results, the statistical tools used are: Mean, Standard Deviation and Student t-test using SPSS 23.

### 5.1 Objectives

1. To Analyze and compare the Financial Position and Performance of the Public sector Banks by using CAMELS Model.
2. To give recommendation and suggestion for improvement of efficiency in State Bank of India and Punjab National Bank.

### 5.2 Hypothesis

1. **Null Hypothesis ($H_0$):** There is no significant difference between performance and profitability of AXIS Bank and HDFC Bank; and
2. **Alternative Hypothesis ($H_1$):** There is significant difference between performance and profitability of AXIS Bank and HDFC Bank.

## 6. DATA COLLECTION

Formulas and standard value, if any, in Table No.: 1(**Ratios included in Camels Model**) are duly explained. With the help of annual reports of the selected banks (Axis Bank and HDFC Bank) ratios are summarised in the following Table No. 2 and 3.

**Table No. 2: CAMELS Ratios of AXIS BANK (2013-2014)**

| Years | RATIOS | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CAR | DER | TATR | LR | CDR | TICER | NPR | DPS | EPS | RONW | ROA | CR | QR | ISR |
| 2012-13 | 17.00 | 8.96 | 0.09 | 0.15 | 77.58 | 10.77 | 19.05 | 3.60 | 23.93 | 15.64 | 707.50 | 0.03 | 20.10 | 64.44 |
| 2013-14 | 16.07 | 8.67 | 0.08 | 0.14 | 80.03 | 10.51 | 20.29 | 4.00 | 26.51 | 16.26 | 813.47 | 0.03 | 18.57 | 60.99 |
| 2014-15 | 15.09 | 9.00 | 0.08 | 0.14 | 84.71 | 10.38 | 20.73 | 4.60 | 31.18 | 16.46 | 188.47 | 0.03 | 20.64 | 59.91 |
| 2015-16 | 15.29 | 8.60 | 0.08 | 0.13 | 91.10 | 10.20 | 20.06 | 5.00 | 34.59 | 15.46 | 223.12 | 0.07 | 25.74 | 58.93 |
| 2016-17 | 14.95 | 9.31 | 0.08 | 0.13 | 92.17 | 9.98 | 8.26 | 5.00 | 15.40 | 6.59 | 232.83 | 0.10 | 17.10 | 59.38 |

*Source: Annual Reports of Axis Bank (2012-13 to 2016-17)*

**Table No. 3: CAMELS Ratios of HDFC BANK (2013-2014)**

| Years | RATIOS | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CAR | DER | TATR | LR | CDR | TICER | NPR | DPS | EPS | RONW | ROA | CR | QR | IR |
| 2012-13 | 16.80 | 9.09 | 0.10 | 0.16 | 80.14 | 11.36 | 19.18 | 5.50 | 28.50 | 18.57 | 152.20 | 0.06 | 7.84 | 54.91 |
| 2013-14 | 16.07 | 9.36 | 0.09 | 0.15 | 81.79 | 11.00 | 20.61 | 6.85 | 35.50 | 19.50 | 181.23 | 0.06 | 8.55 | 55.07 |
| 2014-15 | 16.79 | 8.00 | 0.09 | 0.15 | 81.71 | 10.62 | 21.07 | 8.00 | 42.10 | 16.47 | 247.39 | 0.04 | 12.69 | 53.79 |
| 2015-16 | 15.53 | 8.25 | 0.09 | 0.15 | 83.24 | 10.92 | 20.41 | 9.50 | 48.80 | 16.91 | 287.47 | 0.07 | 14.51 | 54.18 |
| 2016-17 | 14.60 | 8.02 | 0.09 | 0.14 | 85.64 | 10.38 | 20.99 | 11.00 | 57.20 | 16.26 | 349.12 | 0.06 | 11.19 | 52.18 |

*Source: Annual Reports of HDFC Bank (2012-2013 to 2016-2017)*

## 7. DATA ANALYSIS

I have used Student t-test with the help of SPSS 23 for comparing the performance and profitability of the two sample Banks. In simple terms, the t-test compares the actual difference between two means in relation to the variation in the data.

**Table No. 4: Group Statistics**

| Ratio | BANK | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| CAR | AXIS | 5 | 15.6800 | .85551 | .38260 |
| | HDFC | 5 | 15.9580 | .92751 | .41479 |
| DER | AXIS | 5 | 8.9080 | .28473 | .12733 |
| | HDFC | 5 | 8.5440 | .63658 | .28469 |
| TATR | AXIS | 5 | .0820 | .00447 | .00200 |
| | HDFC | 5 | .0920 | .00447 | .00200 |
| LTR | AXIS | 5 | .1380 | .00837 | .00374 |
| | HDFC | 5 | .1500 | .00707 | .00316 |
| CDR | AXIS | 5 | 85.1180 | 6.48827 | 2.90164 |
| | HDFC | 5 | 82.5040 | 2.06790 | .92480 |
| TICER | AXIS | 5 | 10.3680 | .30028 | .13429 |
| | HDFC | 5 | 10.8560 | .37454 | .16750 |
| NPR | AXIS | 5 | 17.6780 | 5.30076 | 2.37057 |
| | HDFC | 5 | 20.4520 | .76093 | .34030 |
| DPS | AXIS | 5 | 4.4400 | .62290 | .27857 |
| | HDFC | 5 | 8.1700 | 2.16090 | .96639 |
| EPS | AXIS | 5 | 26.3220 | 7.36558 | 3.29399 |
| | HDFC | 5 | 42.4200 | 11.19049 | 5.00454 |
| RONW | AXIS | 5 | 14.0820 | 4.20877 | 1.88222 |
| | HDFC | 5 | 17.5420 | 1.42150 | .63572 |
| ROA | AXIS | 5 | 433.0780 | 301.67043 | 134.91112 |
| | HDFC | 5 | 243.4820 | 79.55708 | 35.57901 |
| CR | AXIS | 5 | .0520 | .03194 | .01428 |
| | HDFC | 5 | .0580 | .01095 | .00490 |
| QR | AXIS | 5 | 20.4300 | 3.27481 | 1.46454 |
| | HDFC | 5 | 10.9560 | 2.79243 | 1.24881 |
| IR | AXIS | 5 | 60.7300 | 2.21171 | .98911 |
| | HDFC | 5 | 54.0260 | 1.15742 | .51762 |

From the above data of mean it is clear that HDFC Bank is better than AXIS Bank on the basis of following ratios: Capital Adequacy Ratio; Total Asset turnover Ratio; Loan Turnover Ratio; Total Income / Capital Employed Ratio; Net Profit Ratio; Dividend per Share; Earnings per Share; Return on Net worth; and Current Ratio. In case of Debt-Equity Ratio; Credit/Deposits Ratio; Return on Assets; Quick Ratio; and Interest Spread Ratio, performance of Axis Bank is better than HDFC Bank.

Performance of AXIS Bank is more consistent than HDFC Bank in following ratios of CAMELS Model – Capital Adequacy Ratio, Debt-Equity Ratio, Total Income/Capital Employed Ratio, Dividend per Share, and Earnings per Share. Whereas in the following cases, Loan Turnover Ratio, Credit/Deposit Ratio, Net Profit Ratio, Return on Worth, Return on Asset, Current Ratio, Quick Ratio and Interest Spread Ratio, of CAMEL Model performance of HDFC Bank is better than its opponent in case of consistency as shown in Table No. 4. In case of Total Asset Turnover Ratio both Bank are similarly consistent.

**Table No. 5: Student t-test**

| Independent Samples Test | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| | | F | Sig. | t | Df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| CAR | Equal variances assumed | .013 | .914 | -.493 | 8 | .635 | -.27800 | .56430 | -1.57928 | 1.02328 |
| | Equal variances not assumed | | | -.493 | 7.948 | .636 | -.27800 | .56430 | -1.58075 | 1.02475 |
| DER | Equal variances assumed | 9.569 | .015 | 1.167 | 8 | .277 | .36400 | .31187 | -.35516 | 1.08316 |
| | Equal variances not assumed | | | 1.167 | 5.539 | .291 | .36400 | .31187 | -.41477 | 1.14277 |
| TATR | Equal variances assumed | .000 | 1.000 | -3.536 | 8 | .008 | -.01000 | .00283 | -.01652 | -.00348 |
| | Equal variances not assumed | | | -3.536 | 8.000 | .008 | -.01000 | .00283 | -.01652 | -.00348 |
| LTR | Equal variances assumed | .590 | .464 | -2.449 | 8 | .040 | -.01200 | .00490 | -.02330 | -.00070 |
| | Equal variances not assumed | | | -2.449 | 7.784 | .041 | -.01200 | .00490 | -.02335 | -.00065 |
| CDR | Equal variances assumed | 7.145 | .028 | .858 | 8 | .416 | 2.61400 | 3.04545 | -4.40883 | 9.63683 |
| | Equal variances not assumed | | | .858 | 4.804 | .431 | 2.61400 | 3.04545 | -5.31146 | 10.53946 |
| TICER | Equal variances assumed | .290 | .605 | -2.273 | 8 | .053 | -.48800 | .21469 | -.98307 | .00707 |
| | Equal variances not assumed | | | -2.273 | 7.639 | .054 | -.48800 | .21469 | -.98717 | .01117 |
| NPR | Equal variances assumed | 4.960 | .057 | -1.158 | 8 | .280 | -2.77400 | 2.39487 | -8.29659 | 2.74859 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| DPS | Equal variances not assumed | | | -1.158 | 4.165 | .309 | -2.77400 | 2.39487 | -9.32075 | 3.77275 |
| | Equal variances assumed | 5.230 | .052 | -3.709 | 8 | .006 | -3.73000 | 1.00573 | -6.04923 | -1.41077 |
| | Equal variances not assumed | | | -3.709 | 4.660 | .016 | -3.73000 | 1.00573 | -6.37307 | -1.08693 |
| EPS | Equal variances assumed | .904 | .370 | -2.687 | 8 | .028 | -16.09800 | 5.99131 | -29.91398 | -2.28202 |
| | Equal variances not assumed | | | -2.687 | 6.918 | .032 | -16.09800 | 5.99131 | -30.29925 | -1.89675 |
| RONW | Equal variances assumed | 2.415 | .159 | -1.742 | 8 | .120 | -3.46000 | 1.98668 | -8.04128 | 1.12128 |
| | Equal variances not assumed | | | -1.742 | 4.901 | .143 | -3.46000 | 1.98668 | -8.59814 | 1.67814 |
| ROA | Equal variances assumed | 29.289 | .001 | 1.359 | 8 | .211 | 189.59600 | 139.52375 | -132.14634 | 511.33834 |
| | Equal variances not assumed | | | 1.359 | 4.554 | .238 | 189.59600 | 139.52375 | -179.89589 | 559.08789 |
| CR | Equal variances assumed | 9.035 | .017 | -.397 | 8 | .701 | -.00600 | .01510 | -.04082 | .02882 |
| | Equal variances not assumed | | | -.397 | 4.928 | .708 | -.00600 | .01510 | -.04499 | .03299 |
| QR | Equal variances assumed | .000 | .999 | 4.922 | 8 | .001 | 9.47400 | 1.92469 | 5.03567 | 13.91233 |
| | Equal variances not assumed | | | 4.922 | 7.805 | .001 | 9.47400 | 1.92469 | 5.01630 | 13.93170 |
| IR | Equal variances assumed | 1.289 | .289 | 6.005 | 8 | .000 | 6.70400 | 1.11636 | 4.12967 | 9.27833 |
| | Equal variances not assumed | | | 6.005 | 6.038 | .001 | 6.70400 | 1.11636 | 3.97653 | 9.43147 |

The critical values of t distribution are calculated according to the probabilities of two alpha values and the degrees of freedom. The Alpha (α) values 0.05 one tailed and 0.01 two tailed are the two columns to be compared with the degrees of freedom in the row of the table.

In this we have compared calculated value as per T – test with Tabular Value of T-test as one tailed test at 5% level of Significance.

## 8. FINDINGS

**Table No. 6: Comparative Table of Calculated value of Student t-test with Table Value of t**

| | Ratio | Bank Name | Mean | SD | t-calculated | t-table value | Accept/reject Criteria |
|---|---|---|---|---|---|---|---|
| **C** | CAR | AXIS BANK | 15.6800 | .85551 | -.493 | 1.86 | **Accepted** |
| | | HDFC BANK | 15.9580 | .92751 | | | |
| | DER | AXIS BANK | 8.9080 | .28473 | 1.167 | 1.86 | **Accepted** |
| | | HDFC BANK | 8.5440 | .63658 | | | |
| **A** | TATR | AXIS BANK | .0820 | .00447 | -3.536 | 1.86 | **Rejected** |
| | | HDFC BANK | .0920 | .00447 | | | |
| | LTR | AXIS BANK | .1380 | .00837 | -2.449 | 1.86 | **Rejected** |
| | | HDFC BANK | .1500 | .00707 | | | |
| **M** | CDR | AXIS BANK | 85.1180 | 6.48827 | .858 | 1.86 | **Accepted** |
| | | HDFC BANK | 82.5040 | 2.06790 | | | |
| | TICER | AXIS BANK | 10.3680 | .30028 | -2.273 | 1.86 | **Rejected** |
| | | HDFC BANK | 10.8560 | .37454 | | | |
| **E** | NPR | AXIS BANK | 17.6780 | 5.30076 | -1.158 | 1.86 | **Accepted** |
| | | HDFC BANK | 20.4520 | .76093 | | | |
| | DPS | AXIS BANK | 4.4400 | .62290 | -3.709 | 1.86 | **Rejected** |
| | | HDFC BANK | 8.1700 | 2.16090 | | | |
| | EPS | AXIS BANK | 26.3220 | 7.36558 | -2.687 | 1.86 | **Rejected** |
| | | HDFC BANK | 42.4200 | 11.19049 | | | |
| | RONW | AXIS BANK | 14.0820 | 4.20877 | -1.742 | 1.86 | **Accepted** |
| | | HDFC BANK | 17.5420 | 1.42150 | | | |
| | ROA | AXIS BANK | 433.0780 | 301.67043 | 1.359 | 1.86 | **Accepted** |
| | | HDFC BANK | 243.4820 | 79.55708 | | | |
| **L** | CR | AXIS BANK | .0520 | .03194 | -.397 | 1.86 | **Accepted** |
| | | HDFC BANK | .0580 | .01095 | | | |
| | QR | AXIS BANK | 20.4300 | 3.27481 | 4.922 | 1.86 | **Rejected** |
| | | HDFC BANK | 10.9560 | 2.79243 | | | |
| **S** | IR | AXIS BANK | 60.7300 | 2.21171 | 6.005 | 1.86 | **Rejected** |
| | | HDFC BANK | 54.0260 | 1.15742 | | | |

** Calculated Value of Student t-test is taken as Modus to compare with Table Value.*

It can be interpreted from the above Table No. 6 that there is a significance difference between two samples i.e. Axis Bank and HDFC Bank in the form of Total Asset Turnover Ratio, Loan Turnover Ratio, Total Income/Capital Employed Ratio, Dividend per Share, Earnings per Share, Quick Ratio and Interest Spread Ratio because here the calculated value for t-test is greater than the table value of t-test. So the **Null Hypothesis ($H_0$),** 'There is no significant difference between performance and profitability of AXIS Bank and HDFC Bank' **is rejected** and **Alternative**

**Hypothesis ($H_1$):** There is significant difference between performance and profitability of AXIS Bank and HDFC Bank is accepted.
In rest of the ratios of CAMELS MODEL **Null Hypothesis ($H_0$),** 'There is no significant difference between performance and profitability of AXIS Bank and HDFC Bank' **is accepted.**

## 9. CONCLUSION

As in this research paper evaluation of two private sector banks calls for AXIS Bank and HDFC Bank has taken into consideration on the basis of CAMELS MODEL that is C- Capital adequacy; A- Assets Quality; M- Management Efficiency; E- Earnings Quality; L- Liquidity (Asset Liability Management) and S- Sensitivity to Market Risk) has been evaluated with the help of Statistical tools such as Mean, SD and Student t-test in SPSS 23.
Based on the set of indicators that reflects the financial soundness of the two banks our study concludes that HDFC Bank is more efficient to counter the risk exposures or unexpected loss against its capital than AXIS Bank. Capital Adequacy of both the banks was very much similar. Asset quality of both the banks was different. AXIS Bank is more efficient in terms of managerial efficiency as AXIS Bank has better credit deposit ratio. HDFC Bank is far better in terms of Net Profit, Return on Net Worth, Dividend per Share and Earning per Share whereas, AXIS Bank has better position in Return on Assets. The short-term liquidity position of AXIS Bank is much better than HDFC Bank. As these two banks are covering the major market share with huge customer base so this study is useful in acknowledging the strengths and weaknesses of these two banks.
As future research directions, we intend to empirically assess the impact of major factor on financial soundness of banks, operating in India.

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