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FINANCIAL ANALYSIS OF STATE BANK OF INDIA

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ABSTRACT

As the top public sector bank in India, the State Bank of India (SBI) is essential to economic growth because of its extensive financial activities. In this study, SBI's financial performance is critically assessed throughout a ten-year period from 2015 to 2024 utilizing quantitative tools such trend evaluation using the Least Squares Method, correlation analysis, and financial ratio analysis. These techniques make it possible to fully comprehend SBI's profitability, asset quality, liquidity, and solvency—all of which are crucial indicators for evaluating the company's operational effectiveness and financial stability in a banking environment that is changing quickly.

The study uses information from RBI records, financial disclosures, SBI's audited annual reports, and other reliable secondary sources. Applying a linear trend model to the Net Profit data produced the following equation, which showed a substantial upward trend: y = 20,573.472 + 5,540.64x. The study's link between asset quality and profitability is a crucial component. A considerable negative association (r = -0.94) between Net NPA and ROE was shown using correlation analysis, highlighting the detrimental effect that growing NPAs have on shareholder returns. This result reaffirms the necessity of effective recovery plans and strong credit risk management.

Liquidity ratios and CAR were used to analyze liquidity and solvency. Better short-term obligation management and adherence to Basel III capital standards are indicated by the liquidity trend slope of 0.001086 and the CAR slope of 0.2333, which both show steady gains.

According to the report, SBI has experienced a noteworthy financial recovery overall, especially since 2019. This recovery has been fueled by increased profitability, improved capital strength, and operational enhancements. Regulatory requirements, credit risk, and general economic volatility continue to be obstacles, nevertheless. SBI must keep concentrating on digitization, cost reduction, and asset quality improvement if it is to maintain its growth.

1. INTRODUCTION

The country's banking system is crucial to its economy because an effective financial system is necessary for a nation to have a thriving economy. A nation should have a sound financial system that is convenient to navigate and sustains its economy.

In addition to serving as custodians of public deposits, banks also support other financial operations such as capital formation, credit expansion, and economic transformation. The Indian banking system has undergone several stages of change, moving from a traditional government-driven system to one that has been liberalized to integrate with technology. Therefore, when the financial system expands, it faces a number of intricate problems pertaining to its performance, expansion, and future.

Historical Perspective of Indian Banking

Indian banks have a long history that began before the country gained its independence. The first bank was called "Bank of Hindustan," and it was founded in 1770 in Calcutta, which was then the capital. However, the bank failed and was shut down in 1832. Of the more than 600 banks that were registered in the country before independence, only a small number managed to continue operating. Similar to the Bank of Hindustan, many other banks were established in India. During British rule in India, the East India Company established three banks—the Bank of Bengal, the Bank of Bombay, and the Bank of Madras—known as the Presidential Banks. These three financial organizations united to become the "Imperial Bank of India" in 1921. The State Bank of India, the largest bank in the public sector today, was formerly known as the Imperial Bank of India before it was nationalized in 1955.

The government was concerned as all of the major banks were privately run at the time of independence, and the majority of citizens continued to rely on private money lenders. The government of the time made the decision to nationalize the banks in an effort to address this issue. The Banking Regulation Act of 1949 led to the nationalization of these institutions. Which also led to the nationalization of Reserve Bank of India in 1949, The State Bank of India was established in 1955 as a result, and the remaining fourteen banks were nationalized between 1969 and 1991.

Structure of the Indian Banking system

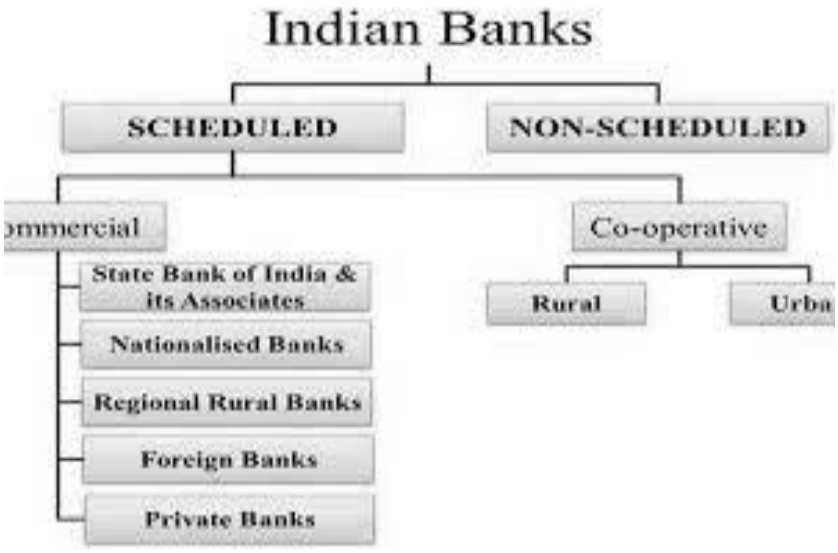
The Reserve Bank of India is primarily in charge of overseeing the multi-tiered Indian financial industry as the primary regulatory agency. Subsequently, the structure ought to be divided into two categories: schedule banks and non-scheduled banks.

Scheduled banks are those that are included in the RBI Act of 1934's second schedule. This banks are eligible for loans from RBI at the bank rate and must fulfil the requirement set such as maintaining SLR, CRR and similar. .

The schedule can be further separated into two broad groups.

- Co-operative Banks
- Commercial Banks.

Figure 1: Visual Representation of Indian Banks Division



Situational Analysis

The largest and most significant bank in the nation continues to be the State Bank of India (SBI), which was founded in 1955 after the Imperial Bank of India was nationalized. SBI serves both corporate and retail banking needs and is a key player in India's financial ecosystem because to its extensive network of more than 22,000 branches and varied clientele. Its strong involvement in government-led projects including financial inclusion, rural development, and digital banking transformation serves to further bolster its strategic significance. With its wide reach and integrated financial services, SBI is much more than just a traditional commercial bank; it is a pillar of the Indian economy, fostering the prosperity of the country.

SBI has successfully negotiated a swiftly changing financial environment during the past ten years, characterized by notable technical advancements, regulatory changes, and competition from both public and private sector banks. SBI's operational strategy and financial results have been impacted by the implementation of Basel III standards, digital payment systems, and improved risk management procedures in the post-2010 era.

SBI's profitability and asset quality have been impacted by macroeconomic issues such as shifting consumer behaviour, rising non-performing assets (NPAs), and fluctuating interest rates. The epidemic put the bank's resilience to the test once more, highlighting the necessity of strong liquidity management and flexible financial planning.

A thorough financial study of SBI during the last 10 years is necessary to assess the bank's asset, liability, profitability, and liquidity management in light of these complications. Trends in financial health, strengths, and weaknesses can all be found through this research, which also offers data-driven insights for upcoming strategic choices. By adding a prediction element to the evaluation, the Least Squares Method's use to analyze trend patterns enhances conventional ratio analysis.

This two-pronged strategy, which combines ratio-based analysis and quantitative trend forecasting, guarantees a comprehensive grasp of SBI's place in the Indian banking market and provides researchers, investors, and policymakers with useful information.

2. LITERATURE REVIEW

- **Dr. Mohi-ud-Din Sangmi** et.al suggested that In addition to providing a guarantee to its depositors, a bank's sound financial standing is also important for its shareholders, staff, and the whole economy. In keeping with this adage, attempts have occasionally been made to assess each bank's financial standing and administer it effectively. An attempt has been made to assess the financial performance of the two main banks that operate in northern India in this study. The most recent financial analysis model, CAMEL Parameters, was used to conduct this review. This model makes clear that the banks in question are in a sound and satisfying situation in terms of their capital adequacy, asset quality, management capacity, and liquidity.

- **Kumbi Mabwe** et.al., suggested that the performance of South Africa's commercial banking industry from 2005 to 2009 is examined in this research. Five sizable commercial banks with headquarters in South Africa are evaluated for profitability, liquidity, and credit quality using financial parameters. According to the survey, the first two years of the analysis saw a significant improvement in the overall performance of banks. The start

of the global financial crisis in 2007 marked a dramatic shift in trend, which peaked in 2008–2009. As a result, the banking industry in South Africa saw declining profitability, poor liquidity, and declining loan quality.

- **Kajal Chaudhary et.al** suggested that India's economic reforms began in the early 1990s, but their results are now apparent. It was only after liberalization, globalization, and privatization that significant changes occurred in the way Indian banks operated. It is now absolutely necessary to research and compare the services provided by public and private sector banks.
  Public sector banks in India are fiercely competing with private and foreign banks due to a number of factors, including increased competition, new information technologies that lower processing costs, the blurring of product and geographic boundaries, and laxer government regulations. This essay aims to evaluate the effectiveness of public and private sector banks' NPA management. We have projected trends using statistical approaches.
- **Nagarajan dt.al** suggested that An important factor in the growth of the Indian economy is the banking industry. A vast branch network, dynamic financial products and services, and user-friendly technology for the convenience and advancement of the populace and the country are characteristics of the banking industry. One of the top public sector banks in India is the State Bank of India, or SBI as it is more commonly known. SBI has 57 zonal offices and 14 local head offices spread across the nation's major cities. The second-biggest and most prominent private sector bank in India is ICICI Bank. The study's goal is to evaluate the financial results of SBI and ICICI Bank, which are in the public and private sectors, respectively.

- **Parmod Singhal** et.al suggested that The core of any economy's financial system is its banking sector. Therefore, a strong and thriving economy depends on the financial industry being sound. The banking industry is now fully integrated with the Indian economy's financial system. The financial system as a whole will implode if the banking sector experiences a crisis. Therefore, it is essential to assess and gauge the banking sector's strength in order to ensure that our economy grows effectively. An effort has been made in this study to rate public sector banks based on their performance and financial status.

- **Kanagavalli G.** et.al suggested that This essay makes an effort to evaluate State Bank of India's financial performance. It is a significant component of India's entire financial system. SBI is the biggest commercial bank in India in terms of personnel, deposits, and assets. The secondary data included in this study spans the years 2013–2018. The following metrics are computed for performance analysis: mean, standard deviation (SD), coefficient of variance (CV), multiple regression, two-way ANOVA, and spread.

- Gulshan Kumar, et.al suggested that With a significant market share, Public Sector Banks (PSB) dominate the Indian banking sector. Using financial statistics for the years 2016–17 through 2020–21, the current analysis compares SBI's financial performance to industry averages. It was discovered that SBI's solvency and asset utilization are much superior to those of the industry and other banks. SBI's use of shareholder capital and CASA is superior to those of other banks and the sector.

3. RESEARCH METHODOLOGY

Problem Statement

Over the past ten years, SBI, the biggest public sector bank in India, has had to contend with a number of significant issues, such as mounting non-performing assets and erratic profitability. Its financial success must be evaluated using trustworthy, data-driven techniques. A long-term, trend-based assessment of SBI's primary

financial metrics is frequently absent from previous research. This study uses forecasting and ratio analysis to close that gap.

Objective of the Study

- To examine the financial trajectory of SBI over the last 10 years to understand performance consistency and growth trends.
- To identify linear trends in profitability indicators using the Least Squares Method
- To explore the relationship between asset quality (e.g., NPAs) and profitability ratios like ROE.
- To provide actionable financial insights that can guide SBI's strategic decisions.

Research Design:

There are three types of research design used:

- Exploratory Research Design
- Descriptive Research Design
- Causal Research Design

Data Collections Methods

The primary method for the collection of data for the study conducted is secondary data, considering the objective is to evaluate financial performance of the bank.

Secondary data collection medium

- Annual reports of banks
- Government portals and research articles
- Google scholar

Kind of scale used

- Ratio Scale: The majority of financial data, including profit, assets, liabilities, equity, and financial ratios like ROA, ROE, and debt-to-equity ratio, are evaluated on a ratio scale. This feature enables mathematical computation and understandable comparison.
- Interval Scale: To analyse trends using the Least Squares Method, time-series data spanning the ten-year period (2015–2024) can be categorized under an interval scale.

Sampling Design and Plan:

Target Population

All financial information related to the State Bank of India's (SBI) performance during a specified period of time is included in the target population for this study. In particular, it includes equity, liabilities, earnings, and other financial metrics that show SBI's overall success.

Sampling Frame:

SBI's audited financial statements (balance sheets and profit and loss accounts) from the previous 10 fiscal years (2015–2024) provide the basis of the sampling frame. The Reserve Bank of India's databases and SBI's official website both make these reports accessible to the general public.

Sample Unit Used:

- **Secondary Data units:** The study considers annual financial data entries such as net profit, total revenue, total assets, liabilities, and financial ratios for each of the ten years.

Methods for selecting sample

- **Purposive sampling:** Purposive sampling is a non-probability technique used in this study, only the most recent ten-year period was selected because the study focuses on SBI's long-term financial performance in order to guarantee data availability, consistency, and relevance.

Sample Size

Ten units make up the sample size, each of which represents a fiscal year from 2015 to 2024. This period is long enough to record financial patterns, conduct a useful least squares analysis, and evaluate the bank's financial development.

Limitation of the study

- Only secondary data is used in the study; main source insights are not included.
- It may not represent long-term trends because it only spans a 10-year span.
- The results' limited generalizability stems from their exclusive reliance on SBI.
- The analysis excluded external macroeconomic and policy influences.
- Because of the methodological scope, no significance testing (such as p-values) was carried out.
- The accuracy of ratios may be impacted by variations in financial data over time.

4. DATA ANALYSIS AND INTERPRETATION

i. To Analyse The Net Earning Of The Bank For The Year 2015-2024 And To Forecast For The Year 2025 Using Least Square Method

The following are the Bank's data of profit and loss account for the past Ten year i.e., 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023 and 2024.

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Profit/Loss (in lakhs)	13101.57	9950.65	10484.10	(6547.45)	862.23	14488.11	20410.46	31675.98	50232.45	61076.62

NOTE: Profit is before tax interest, depreciation and amortization.

Obtain:

1. Trend line
2. To find the Profit/ Loss for the year 2025

By using LEAST SQUARE METHOD

SOLUTION

Let the straight line trend be

$$Y = a + b + X \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (1)$$

Where a and b are constant to be determined by the method of Least Square.

Accordingly we have,

$$\sum y = na + b\sum x \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (2)$$

$$\sum xy = a\sum x + b\sum x2 \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (3)$$

Solving equation (2) and (3) for obtaining a and b and putting this in equation (1) we get the required straight line trend.

Let y be denoted as Profit/Loss amount and n be the number of years.

Year t	Profit/Loss y (in crore)	X= t-2019.5	X^2	XY
2015	13101.57	-4.5	20.25	-58957.1
2016	9950.65	-3.5	12.25	-34827.3
2017	10484.10	-2.5	6.25	-26210.3
2018	-6547.45	-1.5	2.25	9821.175
2019	862.23	-0.5	0.25	-431.115
2020	14488.11	0.5	0.25	7244.055
s2021	20410.46	1.5	2.25	30615.69
2022	31675.98	2.5	6.25	79189.95
2023	50232.45	3.5	12.25	175813.6
2024	61076.62	4.5	20.25	274844.8
Total	**205734.72**	**0**	**82.5**	**457103.5**

Table 1: Net Profit data calculation from 2015 - 2024

From equation……. (2)

$$\sum y = na + b\sum x$$

205734.72 = 10× a + b×0

a = 205734.72 ÷ 10

a = 20573.472

From equation ……. (3)

$$\sum xy = a\sum x + \sum x$$

457103.5 = a × 0 + b× 82.5

b = 457103.5 ÷ 82.5

b = 5540.64

Putting equation (2) and (3) in equation (1)

We have, $Y = a + bx$

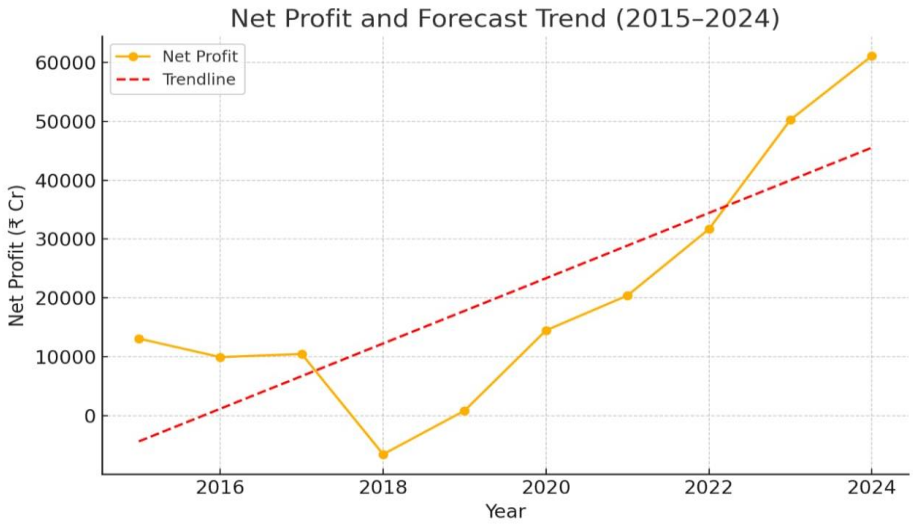
Y = 20573.472 +5540.64 x

Required Profit/ Loss for the year 2025

Y =20573.472 +5540.64 x Here, x= t-2019.5

Y = 20573.472 +5540.64 x 5.5 x= 2025-2019.5

Y= 51046.992 (in cr) x=5.5



Graph 1: Graphical representation of Net Profit over ten years.

Interpretation:

The trend equation for net earnings was obtained using the Least Squares Method and is as follows: y = 5,540.64x + 20,573.472

This upward trend suggests a steady rise of ₹5,540.64 crores year. The anticipated 2025 profit is:₹51,046.99 {crores} = y_{2025}

The trend is unmistakably positive, indicating robust and expanding profitability.

ii. **To Analyse The ROA and ROE Of The Bank For The Year 2015-2024**

Year X	ROA Y	ROE Z	X^2	XY	XZ
1	0.64	10.2	1	0.64	10.2
2	0.44	6.90	4	0.88	13.8
3	0.39	5.57	9	1.17	16.71
4	-0.19	-2.99	16	-0.76	-11.96
5	0.02	0.38	25	0.1	1.9
6	0.37	5.55	36	2.22	33.3
7	0.45	7.16	49	3.15	50.12
8	0.64	9.60	64	5.12	76.8
9	0.91	13.36	81	8.19	120.24
10	0.99	14.09	100	9.9	140.9
55	**4.99**	**69.82**	**385**	**30.61**	**452.01**

Table 2: ROA and ROE calculation for the year 2015-2024

ROA = a + b X

Where,

- ROA is Return on Asset
- X is the years
- a is the intercept
- b is the slope- this tells how much ROA change in a years

$$b = n\sum XY - (\sum X)(\sum Y) \div n\sum X2 - (\sum X)2$$

$$b = 10 \times 30.61 - 55 \times 4.99 \div 10 \times 385 - (55)2$$

$$b = 0.0602$$

ROE = a + b X

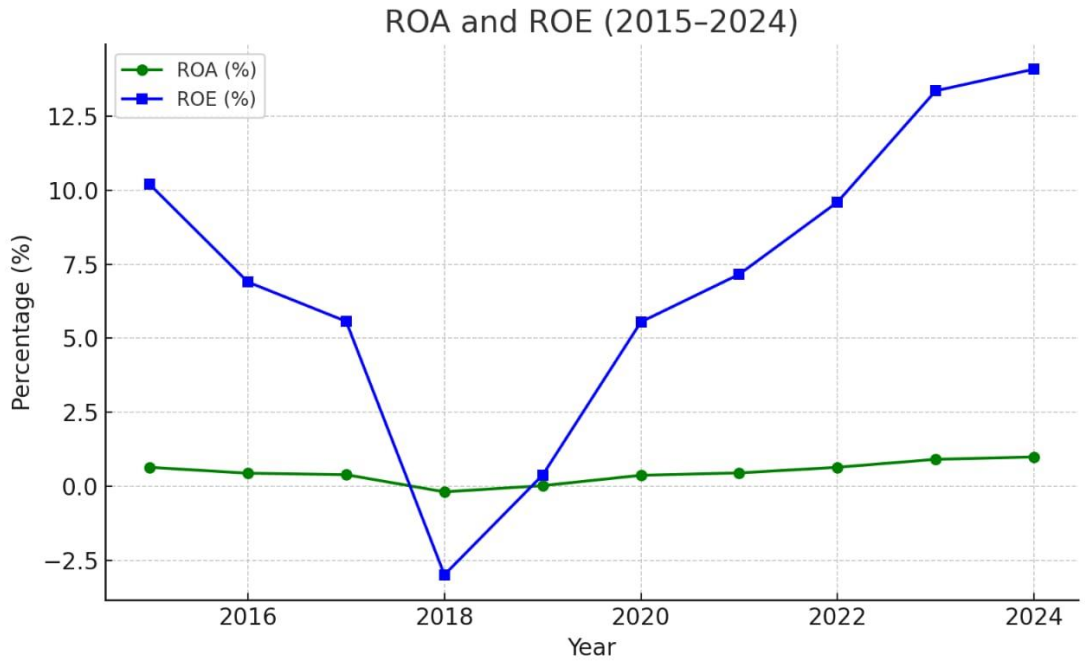
Where,

- ROE is Return on Equity
- X is the years
- a is the intercept
- b is the slope- this tells how much ROE change in a years

$$b = n\sum XY - (\sum X)(\sum Y) \div n\sum X2 - (\sum X)2$$

$$b = 10 \times 452.01 - 55 \times 69.82 \div 10 \times 385 - (55)2$$

$$b = 0.8242$$



Graph 2: Graphical representation ROA and ROE

Interpretation:

- The ROA Regression Slope is 0.0602, meaning that ROA rises by 0.0602% annually.
- The ROE Regression Slope is 0.8242, meaning that ROE rises by 0.82% annually.

An upward trend is indicated by a positive slope.
The increase in recent years is clear and consistent.
After a steep decline in 2018, ROA gradually rebounded and almost doubled between 2021 and 2024.
After turning negative in 2018, ROE increased yearly.
Thus, throughout the past five years (2020–2024), both ROA and ROE have increased. Despite the decline in 2018 and 2019, the overall trend from 2015 to 2024 is positive.

iii. To Analyse The Relationship Between Asset Quality And Profitability.

Year	Net NPA	ROE
2015	19256	10.2
2016	55807	6.9
2017	58277	5.57
2018	110854	-2.99
2019	65826	0.38
2020	51087	5.55
2021	38412	7.16
2022	27891	9.6
2023	21742	13.36
2024	17895	14.09

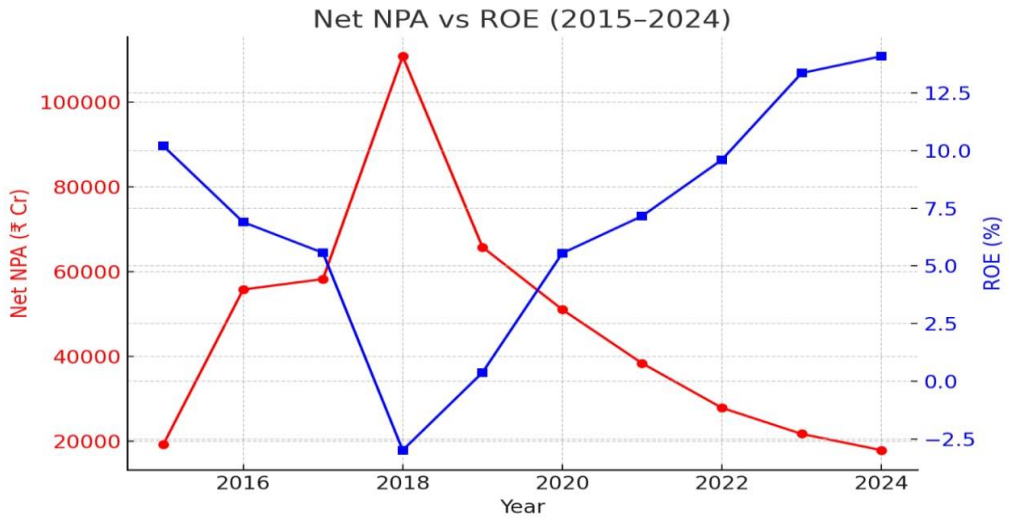
Table 3: Relationship between Net NPA and ROE

Calculation Using Excel,

$$Correlation\ (r)\ =\ -0.94$$

Meaning,

- A very strong negative relationship
- When Net NPA increases, ROE decreases sharply
- When Net NPA decreases, ROE increases



Graph 3: Graphical representation of Net NPA verses ROE

Interpretation:

ROE vs. Gross NPA Correlation Coefficient: -0.94

When Net NPA was high in 2018 (₹1.1 lakh crore), the Return on Equity (ROE) was negative at -2.99%.

As Net NPA consistently declined over the years, ROE steadily improved:

- 2020: Net NPA = ₹51,000 crore → ROE = 5.5%
- 2023: Net NPA = ₹21,000 crore → ROE = 13.36%
- 2024: Net NPA = ₹18,000 crore → ROE = 14.09%

This highlights a clear inverse relationship between Net NPA and ROE.

There is a strong negative correlation between NPAs and ROE. The closer the correlation is to -1, the stronger the inverse relationship.

iv. Analyse Of The Stability And Progression In Liquidity And Solvency Ratio.

a) Liquidity Ratio

Year X	Liquid Ratio Y	X^2	XY
1	0.110897	1	0.110897
2	0.096762	4	0.193523
3	0.084104	9	0.252312
4	0.070907	16	0.283628
5	0.076421	25	0.382103
6	0.077152	36	0.462911
7	0.095047	49	0.66533
8	0.097383	64	0.779068
9	0.111647	81	1.004819
10	0.103835	100	1.038349
55	**0.924154**	**385**	**5.172939**

Table 6 : Liquidity ratio calculations for the year 2015-2025.

$$b = n\sum XY - (\sum X)(\sum Y) \div n\sum X2 - (\sum X)2$$

$$b = 10 \times 5.1722 - 55 \times 0.9241 \div 10 \times 385 - (55)2$$

$$b = 0.001086$$

b) **Capital Adequacy Ratio**

Year	CAR	X^2	XY
1	12.9	1	12.9
2	13.1	4	26.2
3	13.3	9	39.9
4	12.6	16	50.4
5	13.0	25	65
6	13.5	36	81
7	13.9	49	97.3
8	14.2	64	113.6
9	14.5	81	130.5
10	15.1	100	151
55	**136.1**	**385**	**767.8**

Table 7: CAR calculations for the year 2015-2025

$$b = n\sum XY - (\sum X)(\sum Y) \div n\sum X2 - (\sum X)2$$

$$b = 10 \times 767.8 - 55 \times 136.1 \div 10 \times 385 - (55)2$$

$$b = 0.233333$$

Interpretation:

- The Liquidity Ratio increases by ~0.001087 each year on average.
  This small positive slope shows a stable trend with slight improvement in SBI's short-term liquidity position over the decade.

- The slope b = 0.23333 means:
  SBI's Capital Adequacy Ratio increased by ~0.23% every year on average.
  This indicates consistent strengthening of SBI's solvency over the past decade.

5. RECOMMENDATION

1**. Improve NPA Monitoring and Resolution:** SBI should fortify its loan recovery procedures and step up its monitoring of high-risk loan categories. Future slippages can be decreased with the aid of early warning systems, digital credit rating, and stronger pre-sanction checks.

2. Increase Digital and Retail Banking for Asset Efficiency: SBI has demonstrated its ability to create value through growing ROA and ROE. In order to sustain this, management should keep funding digitization, mobile banking, and low-cost service channels in order to increase clientele and lower operating expenses.

3. Connect Internal KPIs with Financial Ratios: By coordinating internal performance indicators (at the branch and zonal levels) with ratios such as ROE, ROA, and NPA recovery rates, SBI can enhance performance and accountability.

4 Continue to Maintain Capital Adequacy Vigilance: SBI needs to keep improving its capital structure, getting ready for stressful situations, and adhering to Basel standards as solvency improves.

6. CONCLUSION

A thorough examination of SBI's financial data from 2015 to 2024 yields a number of significant findings with both theoretical and applied applications.
Profit Growth and Prospects: Over the last ten years, SBI's net profit has been steadily increasing, with the exception of a brief decline in FY 2018 brought on by high NPA provisioning. A distinct linear growth pattern was found using the Least Squares Method. The equation that was derived:

$$y = 20{,}573.472 + 5{,}540.64x$$

An increase in profitability Ratios: A consistent improvement year over year is indicated by the computed slopes for ROA (0.0602%) and ROE (0.8242%). FY 2024 saw the highest levels of ROA and ROE, which were indicative of improved asset utilization and higher shareholder returns.

Asset Quality vs. Profitability: There is a clear inverse association between ROE and gross non-performing assets (NPAs), as indicated by the correlation value of -0.94. Profitability (ROE) decreased as NPAs rose, and vice versa. This emphasizes how crucial it is to keep asset quality good in order to preserve bank performance.

Trends in Liquidity and Solvency: SBI is continuously fulfilling its regulatory responsibilities and fortifying its capital base, as evidenced by the liquidity and solvency ratios (e.g., liquidity slope: 0.001086; CAR slope: 0.23333), which show financial stability and steady improvement.

Management Implications:
The findings show that SBI's financial performance is improving as a consequence of enhanced operational efficiency, NPA control, and disciplined capital utilization. NPA control must continue to be a strategic priority, nevertheless, because profitability is still susceptible to credit quality. SBI has the confidence to pursue new growth opportunities, particularly in digital banking and underserved markets, because to its expanding capital base and better solvency ratios.

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