DOUBTFUL ASSETS ERODING SBI's PROFITABILITY & LIQUIDITY

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Abstract
In modern complex economic situation with Stiff competition management of Assets play a significant role behind the survival and growth of any organisation. Indian Banking Sector has been facing serious problems due to increase in Non- Performing Assets (NPAs). NPAs have direct impact on Banks profitability, Liquidity. It reflects the performance of a bank, in addition to posing threat on quality of asset and survival of banks. It indicates probability of credit defaults and so affects the Net-Worth of a bank and also erodes the value of its Assets as well as Market Cap. Profit depends upon NPA provisions hence, for a banker, NPA has become very significant. It ensures survival and growth and can eventually become the only parameter for performance evaluation. To improve the efficiency and profitability of banks NPA need to be reduced and controlled. In this paper, an effort has been made to evaluate the Non-Performance Assets of SBI, and its effect on Profitability and Liquidity, using accounting techniques of NPA analysis, statistical tools along with graphs and charts.

Keywords: Indian Banking Sector, Commercial Banks, Gross Npa; Net Npa; Advances; Roa; Performance Evaluation, Standard Deviation, Anova, T-Test.

I. Introduction
Indian Banking Sector has undergone a sea change after the first phase of economic liberalization in 1991 and hence credit management. While the primary function of banks is to lend funds as loans to various sectors such as agriculture, industry, personal loans, housing loans etc., in recent times the banks have become very cautious in extending loans. Post reform era has changed the whole structure of banking sector of India. The emerging competition has resulted in new challenges for the Indian banks. Hence, parameters for evaluating the performance of banks have also changed.

Non performing assets are an unavoidable burden for each banking industry. The success of banks depends upon methods of managing NPAs and keeping them within tolerance level. Hence, to change the curve of NPAs, there is only one technique that an effective monitoring and control policy should be planned and executed which is aided by proper legal reforms.

Non-Performing Assets (NPAs)
NPA is defined as a loan asset, which has ceased to generate any income for a bank whether in the form of interest or principal repayment. As per the prudential norms suggested by the Reserve Bank of India (RBI), a bank cannot book interest on an NPA on accrual basis. In other words, such interests can be booked only when it has been actually received. Therefore, this has become what is called as a 'critical performance are' of the banking sector as the level of NPAs affects the profitability of a bank.

NPA Parameters
Banking business is mainly that of borrowing from the public and lending it to the needy persons and business at a premium. Lending of money involves a credit risk. When the loans and advances made by banks or financial institutions turn out as non - productive, non- rewarding and non – remunerative, they become Non Performing Assets (NPA). According to SARFAESI 2002, NPA is an asset or account of a borrower, which is classified by a bank or financial institution as sub-standard asset, doubtful asset and loss asset.

Exhibit – I: NPA Parameters
1. **Term Loans:** Interest and/or Instalment of Principal overdue beyond 90 days
2. **Overdraft/Cash Credit:** Overdue beyond 90 days
3. **Bill Purchased/Discounted:** Overdue beyond 90 days

4. **Crop Loans (Short Duration):** Interest and/or Instalment of Principal overdue for 2 crop seasons
5. **Crop Loans (Long Duration):** Interest and/or Instalment of Principal overdue for 1 crop season
6. **Securitization Transactions:** Amount of liquidity facility outstanding beyond 90 days
7. **Derivative Transactions:** Overdue Receivables representing positive mark-to-market value of a derivative contract which remains unpaid beyond 90 days from specified due date for payment

Classifications of Assets

Non-performing assets are further classified into three categories based on the span for which the asset has remained non-performing and the recovery of the dues:

1. Substandard Assets

With effect from March 31, 2005, a substandard asset would be the one, which has remained as a non-performing asset for a period of less than or equal to 12 months. Substandard assets have credit weaknesses that jeopardise the liquidation of the debt and there are also possibility of incurring and sustaining some losses if the deficiencies are not corrected.

2. Doubtful Assets

With effect from March 31, 2005, an asset is classified as doubtful if it has remained as a sub-standard asset for a period of 12 months. A loan classified under the doubtful category has all the weakness characteristics as defined for the sub-standard assets; also it has added characteristics that the weakness makes full liquidation or collection, on the basis of the currently known conditions, facts, and values that are highly doubtful and questionable.

3.Loss Assets

A loss asset is one where loss has been identified by the bank's internal auditors and RBI's external auditors, but the amount has not been written off fully. These kinds of assets are also considered as uncollectible, and of little value that its continuance or maintenance as a bankable asset is not warranted or acceptable though there may be some salvage or recovery value

II. Objective of the Study

1. To analyse the NPA of State Bank of India and its effect on its profitability and Liquidity
2. The objective of the study is to find out whether difference lies in the NPA occurrence of SBI during the period of study.

Review of Literature

NPA is a burning topic for the banking sector and many authors tried to study the reasons of NPA, the problems created by NPA and the impact of NPA on the banking sector, and moreover came to a solution or remedies of the growing problem of NPA. A number of papers have been written and gone through, and this part of this paper is attempting to present a review of all those are available in the same area of non-performing assets of the public sector banks, private sector banks and other banks. This survey has conducted a study on the existing papers, articles, journals, and reports provided by different authors, groups and committees from time to time.

1. Dutta. A (2014): This paper studied the growth of NPA in the public and private sector banks in India, and analysed sector wise non-performing assets of the commercial banks. For the purpose of the study data has been collected from secondary sources such as report on Trend and Progress of Banking in India, RBI, Report on Currency and Finance, RBI Economic Surveys of India.
2. Ahmad, Z., Jegadeeshwaran, M. (2013): This paper was written on the NPA, and causes for NPA. Secondary data was collected for a period of five years and analysed by mean, CAGR, ANOVA and ranking banks. The banks were ranked as per their performance in managing the NPAs. The efficiency in managing the NPA by the nationalised banks was tested.
3. Ranjan, R., Dhal, S.C. (2013): This paper explores an empirical approach to the analysis of the Indian commercial banks' nonperforming loans by regression analysis. The empirical analysis evaluates as to

how the NPLs are influenced by three major sets of economic and financial factors, i.e., terms of credit, bank size induced risk preferences and macroeconomic shocks.

4. Patidar, S.,Kataria, A. (2012): The study analysed the percentage share of NPA as components of priority sector lending, the comparative study was conducted between SBI and Associates, Old Private Banks and New Private Banks and Nationalized Banks of the benchmark category, to find out the significant difference of the NPA and also find out the significant impact of Priority Sector Lending on the Total NPA of Banks using statistical tools like regression analysis and ratio analysis.

5. Arora, N., Ostwal, N. (2014): The present paper analyses the classification and comparison of loan assets of public and private sector banks. The study concluded that NPAs are still a threat for the banks and financial institutions and public sector banks have higher level of NPAs in comparison to Private sector banks.

6. Kumar, M.,Singh, G. (2012): This paper focuses on the most significant factors, which contribute towards the non-performing assets problem from the view point of the top bankers of public sector banks and, some foreign banks in India and the measures required for managing the NPAs

7. Rajput, N.,Arora, A.P., Kaur, B. (2011): This study attempts to trace the movement of the NPAs presence in public sector banks of India, by analyzing the financial performance in managing NPA.

8. Tripathi, L. K., Parashar, A., Mishra, S. (2014): The present study, with the help of multiple regression model attempts to investigate the impact of priority sector advances, unsecured advances and advances made to sensitive sectors by banks like SBI group and other nationalised banks on Gross NPAs of banks.

9. Chaudhary, K., Sharma, M. (2011): This paper has made an attempt to analyses how efficiently Public and Private sector banks have been managing NPA. A statistical tool for projection of trend was used for analysis.

III. Scope of Study
The study shows the impact of NPA on SBI's profitability and Liquidity position. This is the process of comparing income to output and determining how much profit was made during a specific time period. A properly conducted profitability analysis provides invaluable evidence concerning the earnings potential of a company and the effectiveness of management

Period of Study: The study covers a period of 7 years from 2010 to 2016 is taken for the study.

Methodology
Sources of Data: The study is based on secondary data. Information required for the study has been collected from the Annual Reports of State Bank of India and different books, journal, magazines, and data collected from various banks websites.

Tools Applied: In this study various tools: Financial Tools – Ratio Analysis and Statistical Tools (i.e.) Mean and T- test have been used for data analysis.

Mean: Sum of variable/N

Correlation Coefficient (r): It measures the strength and direction of a linear relationship between two variables on a scatter plot. The value of r is always between +1 and –1.

R^2**:** It shows how close the data are to the fitted regression line

t-Test (Two-Sample Assuming Unequal Variances): t-test assesses whether the means of two groups are statistically different from each other.

If t Stat value lies between - t Critical two tail and + t Critical two test we don't reject Null

Hypothesis: An ANOVA is statistical hypothesis in which the sampling distribution of test statistic when null hypotheses is true. Null hypotheses have been set and adopted for the analysis of data. The null hypotheses are represented by H_0. It is a negative statement which avoids personal bias of investigator during data collection as well as the time of drawing conclusion

Limitation of the Study
1. The study is related to a period of 7 years.
2. This study is concentration on one particular company, not inter firm comparison.
3. Data has been collected from the published annual reports.
4. Lack of availability to certain data due to confidentially of information.

State Bank of India
SBI is an Indian multinational, public sector banking and financial services company. It is a government-owned corporation with its headquarters in Mumbai, Maharashtra. The bank traces its ancestry to British India, through the Imperial Bank of India, to the founding, in 1806, of the Bank of Calcutta, making it the oldest commercial bank in the Indian subcontinent. Bank of Madras merged into the other two "presidency banks" in British India, Bank of Calcutta and Bank of Bombay, to form the Imperial Bank of India, which in turn became the State Bank of India in 1955. As of 2016-17, it had assets of Rs 30.72 trillion (US$460 billion) and more than 14,000 branches, including 191 foreign offices spread across 36 countries, making it the largest banking and financial services company in India by assets.

Gross NPA: Gross NPA is the amount outstanding in the borrower account, in books of the bank other than the interest which has been recorded and not debited to the borrower account.

Exhibit – II: Gross NPA

In Millions	2010	2011	2012	2013	2014	2015	2016
Opening Balance	15,714.00	19,534.89	25,326.29	39,676.46	51,189.39	61,605.35	56,725.34
Add: Fresh NPAs	11,842.84	18,145.70	24,712.22	31,993.35	41,216.67	29,435.02	64,198.49
Total	27,556.84	37,680.59	50,038.51	71,669.81	92,406.06	91,040.37	1,20,923.83
Less:Reductions due to							
Up Gradations	3,972.37	4,499.10	5,458.36	10,119.35	10,183.27	3,776.15	2,598.59
Recoveries	2,059.10	3,848.35	4,159.35	4,766.30	7,734.94	9,235.42	4,389.18
Write-Offs	1,990.48	4,006.85	744.34	5594.77	12,882.50	21,303.46	15,763.26
Total	8,021.95	12,354.30	10,362.05	20,480.42	30,800.71	34,315.03	22,751.03
Closing Balance	19,534.89	25,326.29	39,676.46	51,189.39	61,605.35	56,725.34	98,172.80

Exhibit-II depicts that Gross NPA of SBI has increased over the years from Rs 19,534.89 millions in 2010 to Rs 98,172.80 millions in 2016. The Compounded Annual Growth Rate is 30.88%.

Net NPA: Net NPA is the amount of Gross NPA less (1) interest debited to borrower and not recovered and not recognized as income and kept in interest suspense (2) amount of provisions held in respect of NPA and (3) amount of claim received and not appropriated.

Exhibit – III: Net NPA

In Millions	2010	2011	2012	2013	2014	2015	2016
Opening Balance	9,677.42	10,870.17	12,346.90	15,818.85	21,956.48	31,096.07	27,590.58
Additions during the year	6,135.24	6,815.83	10,948.96	17,825.95	22,293.57	9,504.61	36,192.76
Reductions during the year	4,942.49	5,339.10	7,477.01	11,688.32	13,153.98	13,010.10	7,976.32
Closing Balance	10,870.17	12,346.90	15,818.85	21,956.48	31,096.07	27,590.58	55,807.02

Exhibit-III depicts that Net NPA of SBI has increased over the years from Rs 10,870.17 millions in 2010 to Rs 55,807.02 millions in 2016. The Compounded Annual Growth Rate is 31.34%.

Exhibit – IV: NPA Ratios

Year	Gross NPA to Advances (%)	Net NPA to Advances (%)	ROTA (%)	ROCE (%)	RONW (%)	EPS
2010	3.09	1.72	0.87	1.88	13.9	144.37
2011	3.35	1.63	0.68	2.27	12.72	130.16
2012	4.56	1.82	0.88	2.52	13.95	184.31
2013	4.9	2.1	0.9	2.15	10.91	210.06
2014	5.09	2.57	0.61	1.85	7.15	15.68
2015	4.36	2.12	0.64	2.07	10.2	17.55
2016	6.71	3.81	0.44	2.06	6.9	12.98
Mean	4.58	2.253	0.717	2.114	10.819	102.159
SD	1.203	0.756	0.173	0.231	2.947	85.193
COV	0.263	0.335	0.241	0.109	0.272	0.834
CAGR	13.80%	14.17%	-10.74%	1.54%	-11.02%	-33.07%

Exhibit-IV depicts the different ratios relating to NPA and Return of SBI from 2010 to 2016. For Gross NPA to Advances the Mean, SD and CAGR are 4.58, 1.203 and 13.8% respectively.

For Net NPA to Advances the Mean, SD and CAGR are 2.253, 0.756 and 14.17% respectively.
For Return on Total Assets (ROTA) the Mean, SD and CAGR are 0.717, 0.173 and   -10.74% respectively.
For Return on Capital Employed (ROCE) the Mean, SD and CAGR are 2.114, 0.231 and 1.54% respectively.
For Return on Net Worth (RONW) the Mean, SD and CAGR are 10.819, 2.947 and -11.02% respectively
For Earnings per Share (EPS) the Mean, SD and CAGR are 102.159, 85.193 and -33.07% respectively.

Gross NPA/Advances: Gross NPA is the sum of all loan assets that are classified as NPA as per RBI guidelines. Gross NPA Ratio is the ratio of Gross NPA to the Total Advances by SBI. The Gross NPA of SBI has increased over the years.
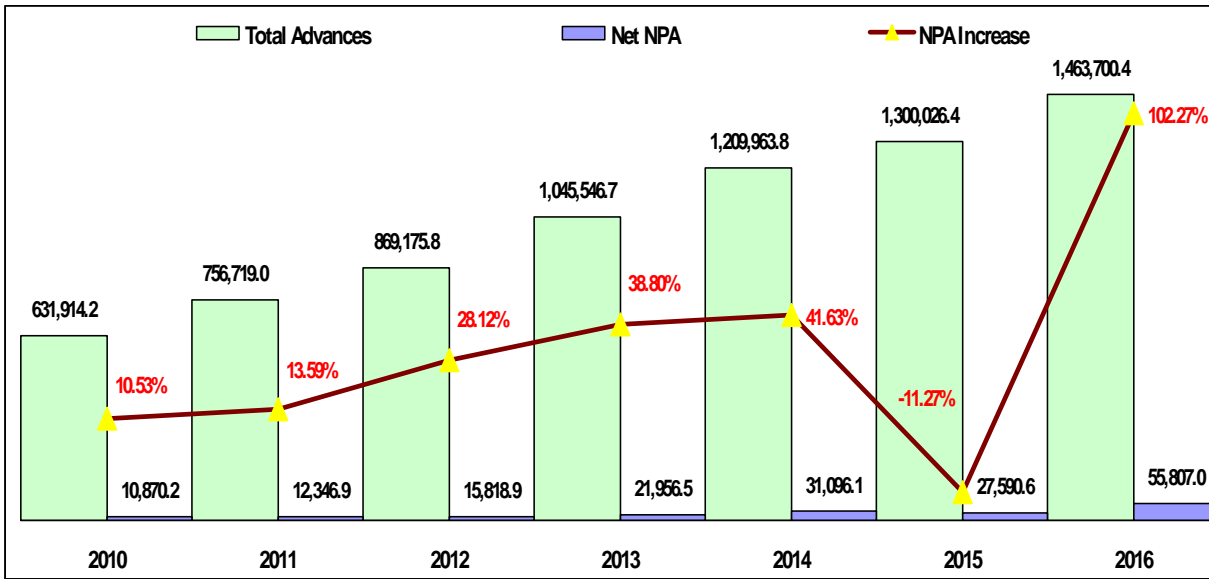
Exhibit –V: Movement In Gross NPA
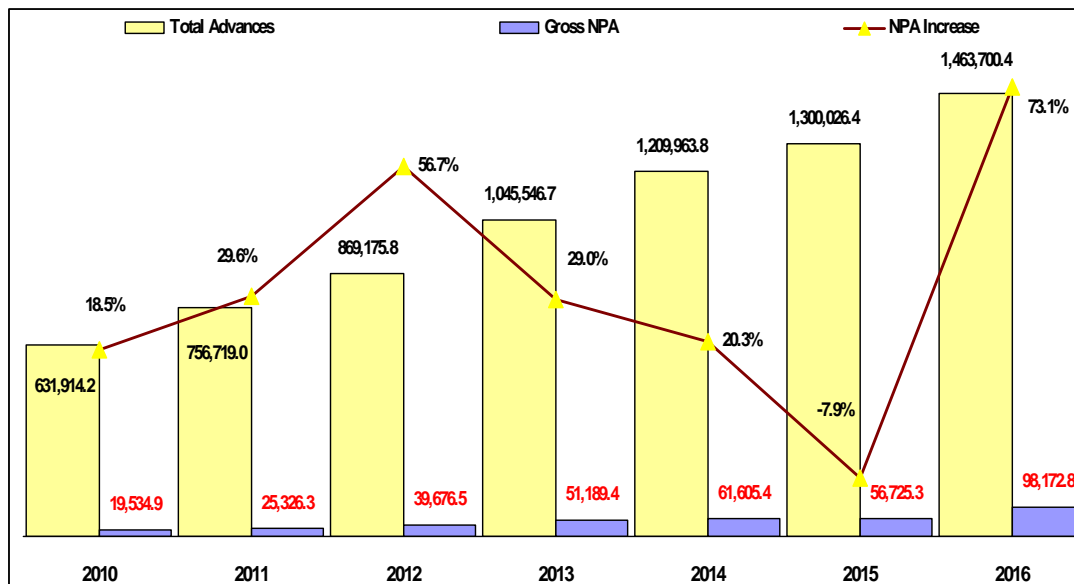
Exhibit-V depicts the movement in Gross NPA and Total Advances from 2010 to 2016. It also shows the Y-O-Y movement in Gross NPA. Total Advances reported a CAGR of 15.03% which increased from Rs 6,31,914.2 millions in 2010 to Rs 14,63,700.4 millions in 2016. Gross NPA have increased from Rs 19,534.9 millions to Rs 98,172.8 millions at a CAGR of 30.88%.
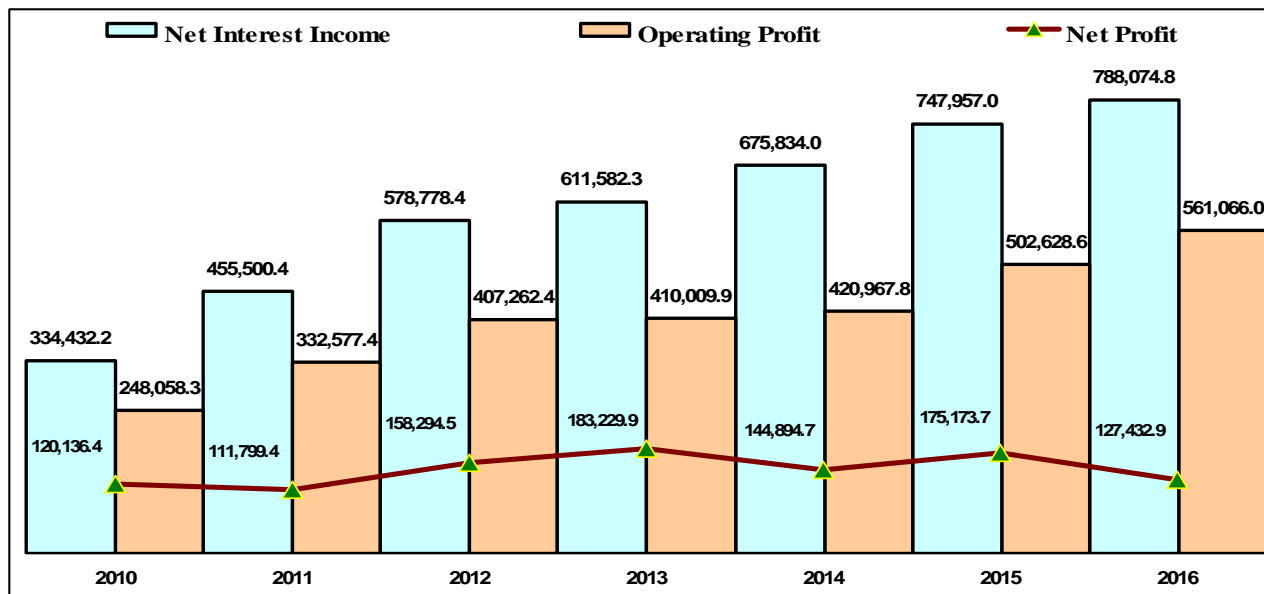
Net NPA/Advances: Net NPAs are calculated by deducting provisions from gross NPAs. Net NPA Ratio shows the Net NPA as a percentage of Advances.

Exhibit –VI: Movement In Net NPA

Exhibit-VI depicts the movement in Net NPA and Total Advances from 2010 to 2016. It also shows the Y-O-Y movement in Net NPA. Total Advances reported a CAGR of 15.03% which increased from Rs 6,31,914.2 millions in 2010 to Rs 14,63,700.4 millions in 2016. Net NPA have increased from Rs 10,870.2 millions to Rs 55,807 millions at a CAGR of 31.34%.

Exhibit –VII: Movement In Net Interest Income & Profit

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Exhibit-VII depicts the movement in Net Interest Income & Operating and Net Profit from 2010 to 2016. Net Interest Income reported a CAGR of 15.36% which increased from Rs 334,432.2 millions to Rs 788,074.80 millions, while Operating reported a CAGR of 14.57% which increased from Rs 248,058.3 millions to Rs 561,066 millions and CAGR in Net Profit has been 0.99%, it increased from Rs 120,136.4 millions in 2010 to Rs 127,432.9 millions in 2016.

Exhibit –VIII: Income & Cost To Net Income

Year	Net Interest Income to Net Income (%)	Other Income to Net Income (%)	Cost to Net Income (%)	Interest Expenses to Interest Income (%)
2010	49.76	50.24	63.09	66.58
2011	57.11	42.89	58.30	59.92
2012	66.09	33.91	53.49	60.68
2013	65.24	34.76	56.26	63.59
2014	64.08	35.92	60.08	64.25
2015	60.27	39.73	59.50	64.04
2016	60.70	39.30	56.78	64.48
Mean	60.46	39.54	58.22	63.36
SD	5.680338	5.680338	3.0858734	2.3091815
COV	0.093945	0.143677	0.0530064	0.0364439
CAGR	3.37%	-4.01%	-1.74%	-0.53%

Exhibit-VIII depicts the movement in Net Interest Income, Other Income, Cost and Interest Expenses as a percentage of Net Income between 2010 and 2016.

Net Interest Income to Net Income: It increased from 49.76% in 2010 to 60.7% in 2016 which reported a CAGR of 3.37% and Mean of 60.46%.

Other Income to Net Income: It declined from 50.24% in 2010 to 39.3% in 2016 indicating a Negative CAGR of (4.01%) and Mean of 39.54%.

Cost to Net Income: It declined from 63.09% in 2010 to 56.78% in 2016 indicating a Negative CAGR of (1.74%) and Mean of 58.22%.

Interest Expenses to Interest Income: It declined from 66.58% in 2010 to 64.48% in 2016 indicating a Negative CAGR of (0.53%) and Mean of 63.36%.

Expenses & Income Ratios Hypothesis
H$_0$: $\mu_1=\mu_2=\mu_3=\mu_4$ (There is no significant relationship between Expense & Income Ratios of SBI)
H$_1$: μ_1 μ_2 μ_3 μ_4 (There is significant relationship between Expense & Income Ratios of SBI)

Exhibit –IX: Composite Expense & Income: Anova
Anova: Single Factor

Groups	Count	Sum	Average	Variance
Net Interest Income / Net Income	7	423.25	60.4643	32.242629
Other Income / Net Income	7	276.75	39.5357	32.242629
Cost / Net Income	7	407.5	58.2143	9.5181952
Interest Expenses / Interest Income	7	443.54	63.3629	5.3243571

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Anova: Variation

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	2440.548029	3	813.516	41.02047	1.3E-09	3.00879
Within Groups	475.9668571	24	19.832			
Total	2916.514886	27				

Above analysis shows that the F value (41.02047) is more than F Critical value of 3.00879, therefore null hypothesis is rejected. Therefore it is concluded that there is significant relationship between the Expenses & Income Ratios of SBI.

For any Bank liquidity is the prime factor. Among assets, Cash & Investments are the most important Liquid Assets. An adequate liquidity position refers to a situation, where institution can obtain sufficient funds, either by increasing liabilities or by converting its assets quickly at a reasonable cost. Risk of liquidity is curse to the image of bank. Banks have to take a proper care to hedge the liquidity risk.

Exhibit –X: Liquidity Ratios

Year	Liquid Asset to Total Asset	Cash to Deposit Ratio	Investment to Deposit Ratio	Deposits to Total Liabilities	Demand Deposits to Total Deposits
2010	8.18	7.62	36.78	76.33	47.26
2011	10.04	10.11	31.65	76.32	49.42
2012	7.28	5.18	29.91	78.15	44.81
2013	7.33	5.47	29.17	76.79	44.82
2014	7.39	6.09	28.60	77.78	42.91
2015	7.56	7.35	30.55	76.99	41.34
2016	7.41	7.49	27.57	76.61	42.62
Mean	7.88	7.05	30.61	77.00	44.74
SD	0.9989	1.6759	3.0292	0.7097	2.8174
COV	0.1267	0.2379	0.0990	0.0092	0.0630
CAGR	-1.63%	-0.29%	-4.69%	0.06%	-1.71%

Exhibit-IX depicts the movement in Liquid Asset to Total Asset, Cash to Deposit Ratio, Investment to Deposit Ratio, Deposits to Total Liabilities and Demand Deposits to Total Deposits between 2010 and 2016.

Liquid Asset to Total Asset: It declined from 8.18% in 2010 to 7.41% in 2016 indicating a Negative CAGR of (1.63%) and Mean of 7.88%.

Cash to Deposit Ratio: It declined from 7.62% in 2010 to 7.49% in 2016 indicating a Negative CAGR of (0.29%) and Mean of 7.05%.

Investment to Deposit Ratio: It declined from 36.78% in 2010 to 27.57% in 2016 indicating a Negative CAGR of (4.69%) and Mean of 30.61%.

Deposits to Total Liabilities: It increased from 76.33% in 2010 to 76.61% in 2016 which reported a CAGR of 0.06% and Mean of 77%.

Demand Deposits to Total Deposits: It declined from 47.26% in 2010 to 42.62% in 2016 indicating a Negative CAGR of (1.71%) and Mean of 44.74%.

Liquidity Ratios Hypothesis:
H_0: $\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5$ (There is no significant relationship between Liquidity Ratios of SBI)
H_1: μ_1 μ_2 μ_3 μ_4 μ_5 (There is significant relationship between Liquidity Ratios of SBI)

Exhibit –XI: Composite Liquidity: Anova
Anova: Single Factor

Groups	Count	Sum	Average	Variance
Liquid Asset / Total Asset	7	55.1921	7.88458	0.9977991
Cash - Deposit Ratio	7	49.3161	7.04516	2.8085588
Investment - Deposit Ratio	7	214.242	30.606	9.1761487
Deposits / Total Liabilities	7	538.973	76.9961	0.5037298
Demand Deposits / Total Deposits	7	313.177	44.7395	7.9377082

Anova: Variation

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	23678.27092	4	5919.57	1381.5308	1.5E-33	2.68963
Within Groups	128.5436684	30	4.28479			
Total	**23806.81459**	**34**				

Above analysis shows that the F value (1381.5308) is more than F Critical value of 2.68963, therefore null hypothesis is rejected. Therefore it is concluded that there is significant relationship between the Composite Liquidity ratios of SBI.

Descriptive Analysis

This research is based on Easton and Harris (1991) formal valuation model, which has been used by the majority of researchers who contacted similar studies (Biddle, Bowen and Wallace, 1997; Chen and Dodd, 1997 and 2001. The model links stock returns to earnings levels and earnings changes. Relative information content is assessed by comparing R^2 from four separate regressions (1 to 5), one for each performance measure, ROTA, ROCE, RONW, EPS and NPA.

Exhibit – XII: Co-Relation With Gross NPA

Year	GROSS NPA	ROTA (%)	ROCE (%)	RONW (%)	EPS
2010	19,534.89	0.87	1.88	13.9	144.37
2011	25,326.29	0.68	2.27	12.72	130.16
2012	39,676.46	0.88	2.52	13.95	184.31
2013	51,189.39	0.9	2.15	10.91	210.06
2014	61,605.35	0.61	1.85	7.15	15.68
2015	56,725.34	0.64	2.07	10.2	17.55
2016	98,172.80	0.44	2.06	6.9	12.98
RSQ (R^2)		0.556563	0.035202	0.772510	0.406463

The Exhibit depicts a positive Co-relation between ROTA, ROCE, RONW, EPS and Gross NPA. The correlation between Gross NPA and ROTA is 0.556563, while that with ROCE, RONW are EPS 0.035202, 0.772510 and 0.406463 respectively.

Exhibit – XIII: Co-Relation With Net NPA

Year	NET NPA	ROTA (%)	ROCE (%)	RONW (%)	EPS
2010	10,870.17	0.87	1.88	13.9	144.37
2011	12,346.90	0.68	2.27	12.72	130.16

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2012	15,818.85	0.88	2.52	13.95	184.31
2013	21,956.48	0.9	2.15	10.91	210.06
2014	31,096.07	0.61	1.85	7.15	15.68
2015	27,590.58	0.64	2.07	10.2	17.55
2016	55,807.02	0.44	2.06	6.9	12.98
RSQ = r2	0.666422	0.075059	0.772528	0.485059	

The Exhibit depicts a positive Co-relation between ROTA, ROCE, RONW, EPS and Net NPA. The correlation between NET NPA and ROTA is 0.666422, while that with ROCE, RONW are EPS 0.075059, 0.772528 and 0.485059 respectively.

T-Test: It is used to test the null hypothesis that the variances of two populations are not equal. If t Stat value lies between - t Critical two tail and + t Critical two test we don't reject Null Hypothesis.

Exhibit – XIV: T-Test: Two-Sample Assuming Unequal Variances

	Net NPA to Advances	EPS	ROTA	Total Advances	Net NPA
Mean	2.25384	102.15857	0.71576	1039578.03807	25069.43857
Variance	0.57187	7257.9052	0.02979	92002678182.448	241036911.368
Observations	7	7	7	7	7
Hypothesized Mean Difference	0	0	0	0	
df	6	6	6	6	
t Stat	-4.27182	-4.25473	-4.27208	8.83764	
P(T<=t) one-tail	0.00263	0.00268	0.00263	0.00006	
t Critical one-tail	1.94318	1.94318	1.94318	1.94318	
P(T<=t) two-tail	0.00525	0.00535	0.00525	0.00012	
t Critical two-tail	2.44691	2.44691	2.44691	2.44691	

Net NPA to Advances & Net NPA
H_0: $\mu_1^2 = \mu_2^2$ (There is significant relationship between Net NPA to Advances & Net NPA, Variance are not Equal)
H_1: μ_1^2 μ_2^2 (There is significant no relationship between Net NPA to Advances & Net NPA, Variance is Equal)
Here the t Stat value don't line between - 2.446911846 & + 2.446911846. Therefore, we accept the null hypothesis stating that the variances are unequal.

EPS & Net NPA
H_0: $\mu_1^2 = \mu_2^2$ (There is significant relationship between EPS & Net NPA, Variance are not Equal)
H_1: μ_1^2 μ_2^2 (There is significant no relationship between EPS & Net NPA, Variance is Equal)
Here the t Stat value don't line between - 2.446911846 & + 2.446911846. Therefore, we accept the null hypothesis stating that the variances are unequal.

ROTA & Net NPA
H_0: $\mu_1^2 = \mu_2^2$ (There is significant relationship between ROTA & Net NPA, Variance are not Equal)
H_1: μ_1^2 μ_2^2 (There is significant no relationship between ROTA & Net NPA, Variance is Equal)
Here the t Stat value don't line between - 2.446911846 & + 2.446911846. Therefore, we accept the null hypothesis stating that the variances are unequal.

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Total Advances & Net NPA
H_0: $\mu_1^2 = \mu_2^2$ (There is significant relationship between Total Advances & Net NPA, Variance are not Equal)
H_1: $\mu_1^2 \neq \mu_2^2$ (There is significant no relationship between Total Advances & Net NPA, Variance is Equal)
Here the t Stat value don't line between - 2.446911846 & + 2.446911846. Therefore, we accept the null hypothesis stating that the variances are unequal.

Conclusion
Since Nationalisation, Commercial Banks have played a pivotal role behind the growth and development of the Indian Economy. Banks provide a greater amount of facility for the financial adjustment of the economic activity. Recovery of loans granted has become a challenging issue for Banks. The current study on NPA analysis has been conducted to examine the Profitability, Liquidity and sustainability of SBI, the Largest Indian Commercial Bank during the period 2010 to 2016 (seven years). There has been Substandard Assets, Doubtful Assets and Loss Assets of SBI which have made a negative impact on its Margin, Rate of Return as well as Liquidity Ratios over the years.

The study reveals that
1. Gross NPA of SBI has increased over the years at a CAGR of 30.88%
2. Gross NPA to Advances has increased over the years at a CAGR of 13.8%
3. Net NPA of SBI has increased over the years at a CAGR of 31.34%
4. Net NPA to Advances has increased over the years at a CAGR of 14.17%
5. Net Interest Income to Net Income has increased over the years at a CAGR of 3.37%
6. Other Income to Net Income indicated a Negative CAGR of (4.01%)
7. Interest Expenses as a percentage of Interest Income ratios also indicated a Negative CAGR of (0.53%)
8. Liquid Asset to Total Asset, Cash to Deposit, Investment to Deposit, Demand Deposits to Total Deposits ratios all indicated a Negative CAGR of (1.63%), (0.29%), (4.69%) and (1.71%) respectively. Only Deposits as a percentage of Total Liabilities increased at a CAGR of 0.06%
9. **ANOVA: Single Factor Test revealed**
   a. There is significant relationship between the Expenses & Income Ratios of SBI.
   b. There is significant relationship between the Composite Liquidity ratios of SBI.
10. There has been a positive Co-relation between ROTA, ROCE, RONW, EPS and Gross NPA as well as Net NPA of SBI.
11. **T-Test conducted revealed that**
   a. There is significant relationship between Net NPA to Advances & Net NPA
   b. There is significant relationship between EPS & Net NPA
   c. There is significant relationship between ROTA & Net NPA
   d. There is significant relationship between Total Advances & Net NPA

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