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Long Term Solvency Position of Select Public Sector Banks: An Analysis

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ABSTRACT

Solvency is the ability of a firm to meet its long-term financial obligations. It is essential to staying in business as it asserts a company's ability to continue operations into the foreseeable future. While a company also needs liquidity to thrive, liquidity should not be confused with solvency. A company that is insolvent must often enter bankruptcy.The current study attempts to know the long term solvency capacity of public sector banks. For analysis the data have been collected from six public sector banks such as PNB, ANDHRA BANK, SYNDICATE BANK, UNION BANK and SBI, from 2011 to 2015.In this study mean, standard deviation, co efficient of variation and regression analysis have applied. However, the analysis reveals that banks should maintain adequate capital as per capital adequacy norms, which were setup on International standards of Basel norms(I,II,III).So that public sector banks can acquire the solvency capacity and can reduce NPA.

Keywords: Bankruptcy, Capital Adequacy, Liquidity, Solvency.

INTRODUCTION:

Solvency in finance or business is the degree to which the current assets of an individual or entity exceed the current liabilities of that individual or entity. Solvency can also be describedas the ability of a corporation to meet its long term fixed expenses and to accomplish long term expansion and growth. Solvency is an essential to staying in business. Solvency generally refers to the capacity or ability of the business to meet its short-term and long term obligations.

Banking regulation act 1949 section 5 (b) "A bank is a financial institutions and a financial intermediary that accepts deposits and channels those deposits into lending activities, either directly by loaning or indirectly through capital markets. A bank links together customers that have capital deficits and customers with capital surpluses". Without a sound and effective banking system in India it cannot have a healthy economy. The banking system in India should not only be hassle free but it should be able to meet new challenges posed by technology and any other external and internal factors. Private Banking is all about personal service and a relationship built around you. It is about delivering sophisticated solutions to complex financial problems, seeing your affairs in totality and offering individual advice and tailored solutions. "One claiming to be a banker must profess himself to be one, and the public must accept him as such, his main business must be that of banking, from which generally he should be able to earn his living".

NEED OF THE STUDY:

Solvency is a measure of the long-term financial viability of a business which means its ability to pay off its long-term obligations such as bank loans, bonds payable, etc. Information about solvency is critical for banks, employees, owners, bond holders, institutional investors, government, etc., Thus long-term financial soundness (or solvency) of any business is examined by calculating ratios popularly, known as leverage of capital structure ratios. These ratios help us the interpreting repays long-term debt as per instalments stipulated in the contract. Long term solvency refers to the ability of the business concern to pay its liabilities in the long period. A Firm is

said to be solvent when total asset are greater than the total liabilities payable to outsiders

REVIEW OF LITERATURE:

El Mehdi Ferrouhi, Mohammed V (2014) they reviewed the international regulatory framework for financial risk management and presented the main contributions of Basel Committee on Banking Supervision in ensuring banks' solvency and liquidity risk management. They remark that liquidity risk has never been taken into account in rules and recommendations proposed by Basel Committee on Banking Supervision and only solvency ratios were considered.

Brindadevi.V , Dr.Muthumoni.A(2014), their study is based on long term solvency position of private sector banks in india, the following ratios shows their status of long term solvency position Interest income to total fund, Interest expended to total fund, Loan turnover, Total asset turnover, Capital adequacy ratio, Advance to loan fund, Credit deposit ratio. The long-term financial soundness of any business can be judged by its long-term creditors by testing its ability y to pay interest charges regularly and its ability to repay the principal as per schedule.

Diane Pierret(2015).his study highlights the empirical interaction between solvency and liquidity risks of banks that make them particularly vulnerable to an aggregate crisis. I find that banks lose their access to short-term funding when markets expect they will be insolvent in a crisis. This solvency-liquidity nexus is found to be strong under many robustness checks and to contain useful information for forecasting the short-term balance sheet of banks. The results suggest that capital not only acts as a loss-absorbing buffer, but it also ensures the confidence of creditors to continue to provide funding to the banks in a crisis.

Mily Williams (2014) conducted Study on Short-Term And Long-Term Solvency Of Nestle Pvt Ltd. He found that the company short-term liquidity position was not satisfactory. And the long term solvency position and the operational efficiency of the firm are quite good. Steps need to be taken to stabilize the overall financial position of the company.

VineetSingh(2015) Long Term Solvency Analysis: A Case Study Of Tata Motors And Maruti Suzuki reveals that both the companies are maintaining debt equity ratio of less than 2:1 for the study period it means that both the companies i.e. Tata Motors and Maruti Suzuki are maintaining good solvency from long term point of view and both will be able to meet their long term commitments without any problem. In addition, his analysis also reveals that there is no significant difference between debt equity ratio of Tata Motors and Maruti Suzuki.

V. Palanivel, Dr. C. ManikandaMuthukumar(2013),they conducted astudy on long term solvency of Dharmapuri District Central Co-Operative Bank Ltd, it reveals that over all short term position of the bank is very low. The trend analysis is shows that future debts will increase so banker want to reduce the borrowings or debts to smooth running to the bank. And suggested that bank shareholder or creditor do not having safety at present and in future will have greater risk in the bank to the owners.

M.KrishnaMoorthi , Dr.M.Ramesh , N.Bhanupriya (2012), from the analysis they found and conclude that Debt equity ratio of Bhushan and Visa is more than 2:1 ratio, it showed the restriction in borrowing funds, and Bhushan is having highest total debt ratio from others, they need to decrease their total debt position. SAIL has been in sound position in proprietary ratio from other companies. Bhushan, JSW & VISA is below the average of 60%, they need to increase their position. From the ANOVA result it can conclude that companies belong to the same industry follows a different debt equity position during the study period.

OBJECTIVES OF THE STUDY:

i. To know the solvency analysis of selected public sectors banks (i.e.,) PNB, ANDHRA BANK, SYNDICATE BANK, UNION BANK and SBI.
ii. To analyze the overall solvency position of selected public sector banks through Interest income to fund, Interest expended to total fund, Loan turnover, Total turnover fund, Total assets turnover, Capital adequacy ratio, Advance to loan fund, Credit deposit ratio.

DATA AND RESEARCH METHODOLOGY:

i. Sources ofData:The study is based on secondary data. Information required for the study has been collected from the annual report of PNB, ANDHRA BANK, SYNDICATE BANK, UNION BANK and SBI.
ii. Data and study period: For analysis the data has been collected for five years i.e., from 2011 to 2015.

TOOLS FOR ANALYSIS:

InterestIncome To Total Fund:

Interest income to average working funds expressed as a percentage, this ratio shows a bank's ability to

leverage its average total resources in enhancing its main stream of operational interest income. The sum total of discount, interest from loans, advances and investment and from balance with RBI and other interest flows.
Interest Income to Total Fund =Interest income / Average working fund

Interest Expended To Total Fund:
Interest expended includes interest on deposits, interest on borrowings & other interest. It includes discount & interest on all borrowings and refinance from RBI and other banks. All other payments like interest on participation certificate, penal interest paid also included.
Interest expended to Total fund =Interest expended / Average working fund

Loan Turnover:
Loan turnover ratio means the amount of sales, divided by the outstanding loans on the balance sheet. This could measure how much sales a company has to pay off its loans.
Loan turnover =Net sales/ Outstanding loan

Total Assets Turnover:
Asset turnover measures the efficiency of a company's use of its assets in generating sales revenue or sales income to the company. It is an efficiency ratio which tells how successfully the company is using its assets to generate revenue.
Total asset turnover = Net Sales / Total Assets

Capital Adequacy Ratio:
Capital Adequacy Ratio (CAR), also known as Capital to Risk Weighted Assets Ratio (CRAR), is a ratio of a bank's capital to its risk. National regulators track a bank's CAR to ensure that it can absorb a reasonable amount of loss and comply with statutory capital requirement. It is expressed as a percentage of a bank's risk weighted credit exposures this ratio is used to protect depositors and promote the stability and efficiency of financial systems around the world. Two types of capital are measured(i.e.,) tier one capital, which can absorb losses without a bank being required to cease trading, and tier two capital, which can absorb losses in the event of a winding-up and so provides a lesser degree of protection to depositors.
Capital adequacy ratio = Capital Base (Tier I + Tier II) / Risk-weighted Assets;

- Tier I- Capital include common equity, retained earnings, paid-in capital and disclosed capital reserves.
- Tier II- Capital includes loan loss reserve or undisclosed capital reserves, preferred stocks with maturity of at least 20 years, certain revaluation reserves and general loan provisions, subordinated debt with an original maturity of at least 7 years.

Advance Loan Fund:
The act of a lender paying money under a loan. An advance is an amount of money that is loaned from future earnings. A loan is an amount borrowed from a bank or other institution that loans money. Borrowers sign a promissory note that states the terms of the loan and the length of time for repayment. Loans usually require an amount of interest to be paid back with the loan. Available for loans such funds may be restricted in the sense that only the income generated from the fund may be used for making loans; in this case, the principal is placed in an endowment fund. In cases where both principal and income may be available, all funds are placed in the loan fund group.
Advance to Loan Fund =Total Advance / Total loan fund

CreditDeposit Ratio:
It is the ratio of how much a bank lends out of the deposits it has mobilized. It indicates how much of a bank's core funds are being used for lending, the main banking activity. A higher ratio indicates more reliance on deposits for lending.
Credit Deposit Ratio = Total Advances/Total Deposits

STATISTICAL TOOLS:

In this study various statistical tools are used (i.e.,) Mean, Standard deviation, Coefficient of variation.

MEAN:
Arithmetic Mean (A.M) of group of observations is the quotient obtained by dividing the sum of all the

observations by their. Arithmetic mean is denoted by A.M turns.

$$\text{Mean} = (\Sigma x)/n$$

STANDARD DEVIATION:

Standard Deviation is based on all the observation and is rigidly defined

$$\text{Standard Devation } (\sigma) = \sqrt{\sum \frac{(X_1 - \bar{X})^2}{n}}$$

COEFFICIENT OF VARIATION:

A coefficient of variation (CV) is a statistical measure of the dispersion of data points in a data series around the mean. It is calculated as follows:

$$\text{Coefficient of Variation} = \frac{\text{Standard Deviation}}{\text{Expected Return}}$$

The coefficient of variation represents the ratio of the standard deviation to the mean, and it is a useful statistic for comparing the degree of variation from one data series to another, even if the means are drastically different from each other.

DATA ANALYSIS AND RESULTS:

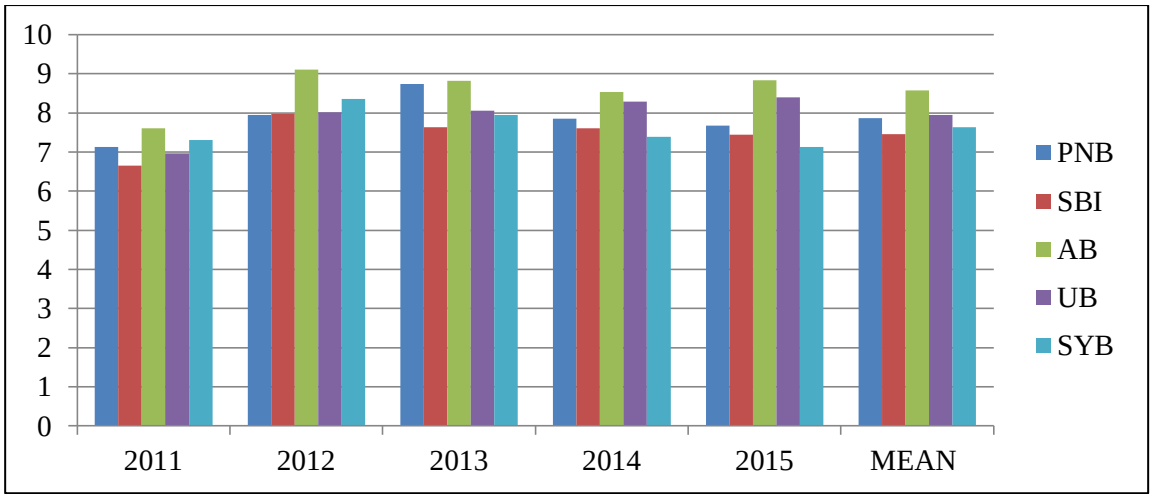
INTEREST INCOME TO TOTAL FUND:

Table No: 3.1 Interest Income to Total Fund of selected banks from 2011 to 2015.

YEAR	PNB	SBI	AB	UB	SYB
2011	7.13	6.65	7.61	6.97	7.31
2012	7.95	7.97	9.1	8.01	8.36
2013	8.74	7.63	8.82	8.05	7.95
2014	7.85	7.6	8.54	8.29	7.39
2015	7.67	7.44	8.83	8.4	7.13
MEAN	7.868	7.458	8.58	7.944	7.628
STDV	0.581	0.491	0.577	0.568	0.511
CV	0.0738	0.0658	0.0672	0.0715	0.0671

Source: Data Collected from the Annual reports of selected banks from 2011 to 2015.

Graph No: 8.1 Interest Incomes to Total Fund



INTERPRETATION:

The above table shows that the Andhra Bank has highest mean value & SBI has lowest value when compare to other banks. Standard deviation of IITF of PNB has 0.581 with highest coefficient of variation of 7.38% and SBI has 0.491 low standard deviation with low coefficient of variation of 6.58%.

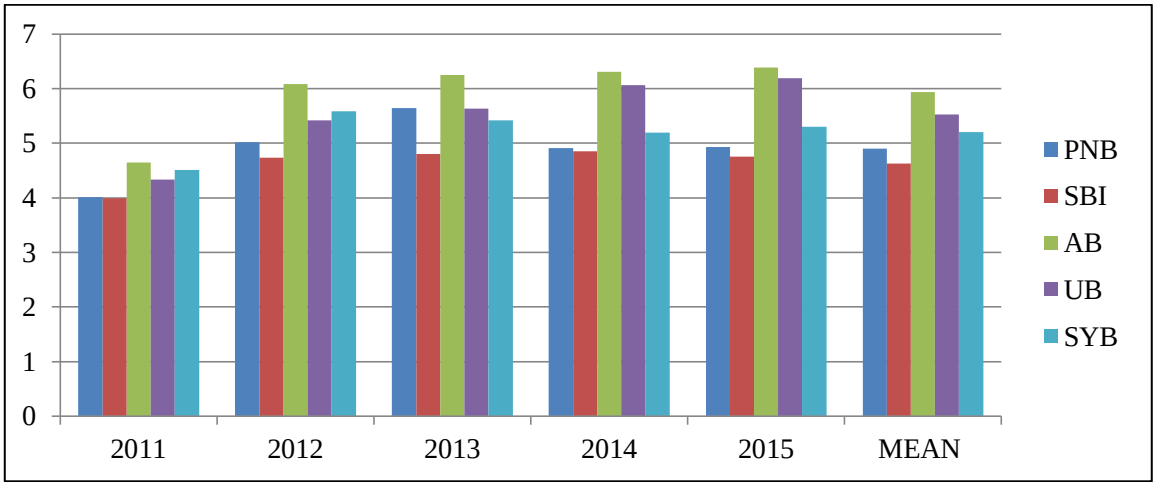
INTEREST EXPENDED TO TOTAL FUND:

Table No: 8.2 Interest expended to Total fund of selected banks from 2011 to 2015.

Year	PNB	SBI	AB	UB	SYB
2011	4.01	3.99	4.65	4.33	4.51
2012	5.02	4.73	6.08	5.42	5.58
2013	5.64	4.8	6.25	5.63	5.42
2014	4.91	4.85	6.31	6.06	5.19
2015	4.93	4.75	6.38	6.19	5.3
MEAN	4.902	4.624	5.934	5.526	5.2
STDV	1.103	0.677	1.376	1.398	0.781
CV	0.2250	0.1464	0.2319	0.2530	0.1502

Source:Data Collected from the Annual reports of selected banks from 2011 to 2015.

Graph No: 8.2 Interest expended to Total fund



INTERPRETATION:

The abovetable shows that the Andhra Bank has highest mean value & SBI has lowest value when compare to other banks. Standard deviation of Interest expended to average working fund of Union Bank of India has 1.398 with coefficient of variation of 25.3% and SBI has 0.677 low standard deviation with low coefficient of variation of 14.64 %.

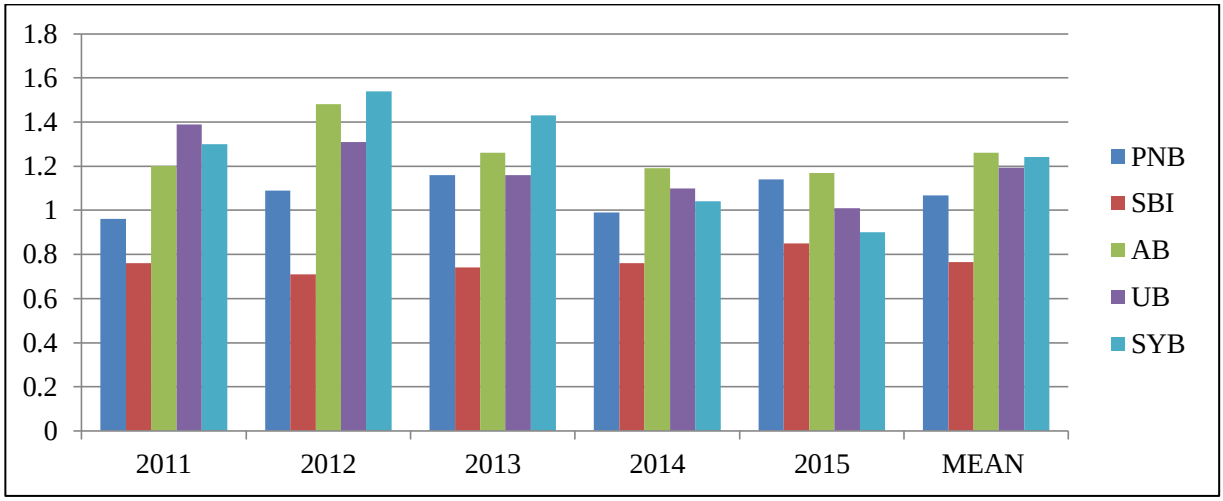
LOAN TURNOVER:

Table No: 8.3 Loan turnovers of selected banks from 2011 to 2015.

Year	PNB	SBI	AB	UB	SYB
2011	0.96	0.76	1.2	1.39	1.3
2012	1.09	0.71	1.48	1.31	1.54
2013	1.16	0.74	1.26	1.16	1.43
2014	0.99	0.76	1.19	1.1	1.04
2015	1.14	0.85	1.17	1.01	0.9
MEAN	1.068	0.764	1.26	1.194	1.242
STDV	0.089	0.052	0.127	0.155	0.267
CV	0.0833	0.0681	0.1008	0.1298	0.2150

Source: Data Collected from the Annual reports of selected banks from 2011 to 2015.

Graph No: 8.3 Loan turnover



INTERPRETATION:

The above table shows thatbank mean, standard deviation & coefficient of variation of Loan turnover of selected banks.Thesyndicate Bank has highest mean value & SBI has lowest value when compare to other banks. Standard deviation of net sales to outstanding loan of SYB has 0.267 with coefficient of variation of 21.5% and SBI has 0.052 low standard deviation with coefficient of variation of 6.81%.

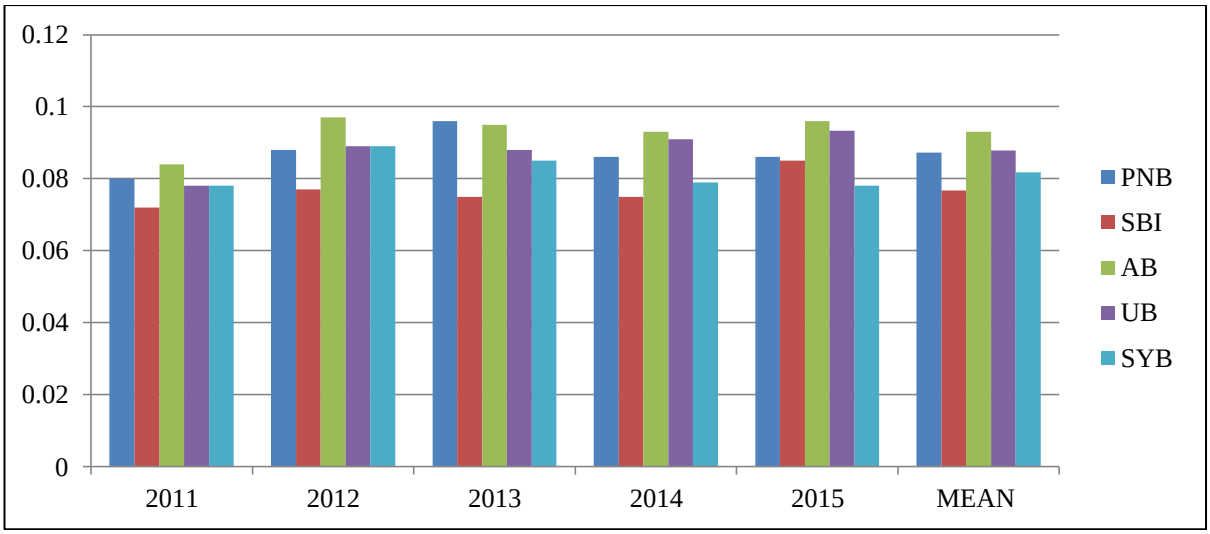
TOTAL ASSET TURNOVER:

Table No 8.4: Total asset turnover of selected banks from 2011 to 2015.

Year	PNB	SBI	AB	UB	SYB
2011	0.08	0.072	0.084	0.078	0.078
2012	0.088	0.077	0.097	0.089	0.089
2013	0.096	0.075	0.095	0.088	0.085
2014	0.086	0.075	0.093	0.0909	0.079
2015	0.086	0.085	0.096	0.0933	0.078
MEAN	0.0872	0.0768	0.093	0.08784	0.0818
STDV	0.0058	0.0049	0.0052	0.0059	0.0050
CV	0.066514	0.063802	0.055914	0.067168	0.061125

Source: Data Collected from the Annual reports of selected banks from 2011 to 2015.

Graph No: 8.4 Total asset turnover



INTERPRETATION:

The above table shows thatmean, standard deviation & coefficient of variation of total asset turnover of selected banks.The Andhra Bank has highest mean value & SBI has lowest value when compare to other banks. Standard deviation of net sales to total Assets of UB has 0.0059 with coefficient of variation of 0.067168% and SBI has 0.0049 low standard deviation with coefficient of variation of 6.3802%.

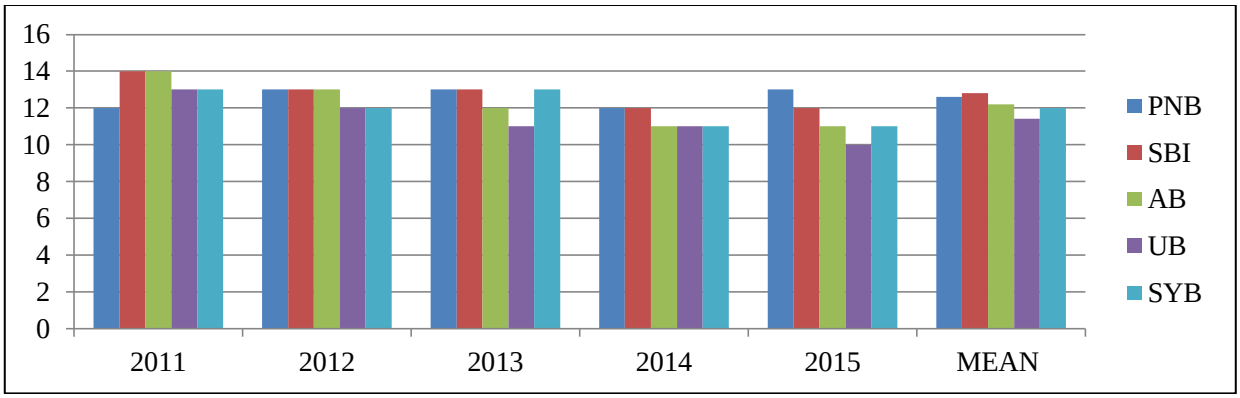
CAPITAL ADEQUACY RATIO:

Table No 8.5: Capital adequacy ratioof selected banks from 2011 to 2015

Year	PNB	SBI	AB	UB	SYB
2011	12	14	14	13	13
2012	13	13	13	12	12
2013	13	13	12	11	13
2014	12	12	11	11	11
2015	13	12	11	10	11
MEAN	12.6	12.8	12.2	11.4	12
STDV	0.55	0.84	1.30	1.14	1.00
CV	0.0437	0.0656	0.1066	0.1000	0.0833

Source: Data Collected from the Annual reports of selected banks from 2011 to 2015.

Graph No: 8.5 Capital adequacy ratio



INTERPRETATION:

The abovetable shows that mean, standard deviation & coefficient of variation of Capital adequacy ratio of selected banks .The SBI has highest mean value & Union Bank of India has lowest value when compare to other banks. Standard deviation of Capital base to risk weighted assets of Union Bank of India has 1.14 with highest coefficient of variation of 10.00% and PNB has 0.55 standard deviation with coefficient of variation of 43.7%.

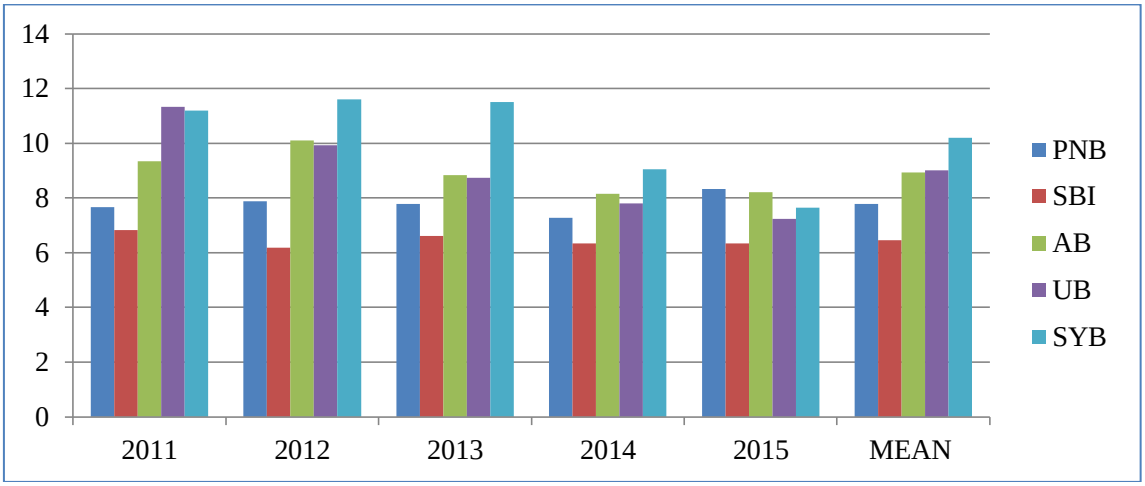
ADVANCES TO LOAN FUND:

Table No 8.6: Advance to Loan Fund of selected banks from 2011 to 2015

Year	PNB	SBI	AB	UB	SYB
2011	7.66	6.83	9.35	11.33	11.2
2012	7.88	6.18	10.1	9.93	11.6
2013	7.79	6.61	8.84	8.74	11.51
2014	7.27	6.33	8.16	7.81	9.04
2015	8.33	6.33	8.22	7.23	7.64
MEAN	7.79	6.46	8.93	9.01	10.20
STDV	0.383	0.261	0.814	1.652	1.773
CV	0.049	0.040	0.091	0.183	0.174

Source: Data Collected from the Annual reports of selected banks from 2011 to 2015.

Graph No: 8.6 Advance to Loan Fund



Interpretation:
The SYB has highest mean value & SBI has lowest value when compare to other banks. Standard deviation of total advance to total loan fund of SYB has 1.773 with highest coefficient of variation of 17.4% and SBI has 0.26 low standard deviation with coefficient of variation of 40%.

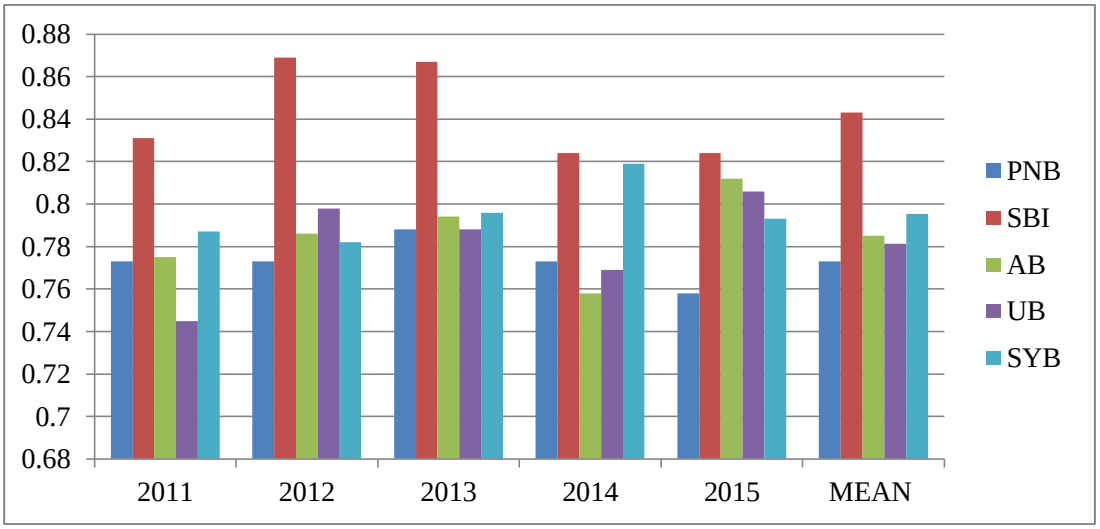
Credit Deposit Ratio:

Table No 8.7: Credit Deposit Ratio of selected banks from 2011 to 2015

Year	PNB	SBI	AB	UB	SYB
2011	0.773	0.831	0.775	0.745	0.787
2012	0.773	0.869	0.786	0.798	0.782
2013	0.788	0.867	0.794	0.788	0.796
2014	0.773	0.824	0.758	0.769	0.819
2015	0.758	0.824	0.812	0.806	0.793
MEAN	0.773	0.843	0.785	0.7812	0.7954
STDV	0.011	0.023	0.020	0.025	0.014
CV	0.0142	0.0273	0.0255	0.0320	0.0176

Source: Data Collected from the Annual reports of selected banks from 2011 to 2015.

Graph No: 8.7 Credit Deposit Ratio



INTERPRETATION:

The SBI has highest mean value & PNB has lowest Value when compare to other banks. Standard deviation of total advances to total deposits of Union Bank of India has 0.025 with highest coefficient of variation of 3.2% and PNB has 0.011 Standard deviation with low coefficient of variation of 17.6 %.

Table No 8.8: Regression

Variables Entered/Removed			
Model 1	**Variables Entered**	**Variables Removed**	**Method**
1	ALF, CDR, LTO, TST, IEP	.	Enter
a. Dependent Variable: IIT			
b. All requested variables entered.			

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.944[a]	.892	.858	.23826
a. Predictors: (Constant), ALF, CDR, LTO, TST, IEP				

INTERPRETATION:
The adjusted R^2 of our model is 0.858 with the R^2 = .892 that means that the linear regression explains 89.2% of the variance in the data.

ANOVA[a]						
Model 1		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
	Regression	7.479	5	1.496	26.351	.000[b]
	Residual	.908	16	.057		
	Total	**8.388**	**21**			
a. Dependent Variable: IIT						
b. Predictors: (Constant), ALF, CDR, LTO, TST, IEP						

INTERPRETATION:
This table indicates the statistical significance of the regression model that was run. Here, $p < 0.05$, which is less than 0.05, and indicates that, overall, the regression model statistically significantly predicts the outcome variable that it is a good fit for the data.

Coefficients

Model		Un standardized Coefficients		Standardized Coefficients	t	Sig.
		B	**Std. Error**	**Beta**		
•	(Constant)	-1.846	1.905		-.969	.347
	IEP	1.071	.144	1.191	7.442	.000
	LTO	-.148	.365	-.058	-.405	.691
	TST	11.766	9.495	.147	1.239	.233
	CDR	.296	.089	.506	3.305	.004
	ALF	-.039	.042	-.109	-.912	.375
a. Dependent Variable: Interest income total fund						

INTERPRETATION:
Multiple regression analysis has been tabulated. This table Shows relationship between dependent variable IIT and independent variable ALF, Credit deposit ratio, Loan turn over, Total assets Turnover, IEP taken and the impact of those independent variables on IIT. It was observed that increase in IEP in one unit the IIT increased by 1.071 units that was statically significant 0.00.For one unit increase in LTO there is .148 decrease in IIT. For one unit increase in TST there is 11.766 increases in IIT. For one unit increase in Credit deposit ratio the

increased 0.296 units in IIT is not statistically significant.For one unit increased in ALF the IIT decreased 0.039 units which are notstatistically significant at 0.00.

FINDINGS:

- Interest income to total fund ratio is high to the Andhra bank. When compare to PNB, SBI, UB, and SYB. Andhra bank is 9.1 in the year 2012. And on an average AB has higher interest income.In the year 2011, all selected banks incurred less interest to total funds except ANDHRA BANK.
- In 2011, it has expended higher interest when compare with remaining selected banks. It indicates AB spends much amount on interest payment.
- Capital adequacy ratio all years' same values but SBI and AB are the highest value. Loan turn of SBI is very low companies to remaining banks during study period.Total asset turnover ratio slightly fluctuations for the selected banks during study period and for AB it is high in the year 2012 that is 0.097.
- It is found that advance to loan fund is low SBI during study period. But on averages it is very high in SYB that is 10.20It is found that when company to the remaining banks SBI shows higher credit deposit ratio during study period.
- Credit deposit ratio is high position of SBI bank is 0.812 in the year 2015

CONCLUSION:

Long term solvency used to measure the size of the company The Indian banking industry is one of the pillars of the Indian economy's growth curve. The BFSI industry, which comprises banking, insurance and mutual funds, is also one of the biggest employers in India.Public Sector Banks (PSBs) are banks where a majority stake (i.e. more than 50%) is held by a government. It consists of national and local governments,their agencies and their charted bodies. In terms of financial performance, public sector banks lag behind. In terms of the parameters like non performance assets and net interest margin, another important factor is that in terms of capital adequacy as well, as public sector banks are lagging behind.
However from the analysis it can be concluded that Public sector banks controlling is vest in the hands of government. So government, through proper regulatory measures makes sure that banks have to maintain capital adequacy and low NPA.

LIMITATIONS OF THE STUDY:

i. The study is related to a period of 5 years.
ii. As the data are only secondary, i.e., they are collected from the published annual reports.
iii. Due to limited span of time only Solvency ratio is taken for the study.

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