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## Relationship between Liquidity & Profitability Management of Nationalised and Private Banks of India

– Dr. Dharmendra Kumar\*

– Mrs. Charu Agarwal\*\*

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### Abstract

*Banking sector is one of the fastest growing sectors in India. Today's banking sector become more complex. Sound financial health of a bank is the guarantee not only to its depositors but is equally significant for the shareholders, employees and whole economy as well. As a sequel to this maxim, efforts have been made from time to time, to measure the financial position of each bank and manage it efficiently and effectively. In this paper, an effort has been made to evaluate the financial performance of the banks listed in Nifty 50. Analysis on the basis of Liquidity & profitability is done and the major emphasis is on establishing a relationship between the two most important indicators of financial performance which are profitability & Liquidity. For this purpose various liquidity ratios has been calculated, technique of correlation is been used and t-test has been applied to come to a conclusion. Various liquidity ratios depicts the liquidity position of banks and application of t-test shows that the relationship between liquidity & profitability is insignificant in most of the cases with certain exceptions.*

**Keywords:** *financial performance, Liquidity analysis, Profitability analysis, Rank correlation, t-test.*

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### 1. Introduction

The growth and financial stability of the country depends on the financial soundness of its banking sector. Banks face two central issues regarding liquidity. Banks are responsible for managing liquidity creation and liquidity risk. Liquidity creation helps depositors and companies stay liquid, for companies especially when other forms of financing become difficult. Banks own liquidity and their role as a liquidity provider are intricately connected. The basic relationship is that when banks require more liquidity for themselves, they are able to provide less liquidity to the market. Obviously this is a simplified relationship. By holding more liquid assets, banks decrease their liquidity risk. The holding of liquid assets in excess of requirements is considered a liquidity cushion or buffer which helps banks in times of increased liquidity pressure to meet these liquidity needs. Having a liquidity buffer thus lowers the amount of liquidity a bank can create for the market in normal times. By creating liquidity in the market, banks serve an important economic role. If markets go illiquid or

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\* Assistant Professor, Department Of Commerce, Gov. PG College, Lohaghat

\*\* Research Scholar, Department Of Management, Kumaun University, Nainital

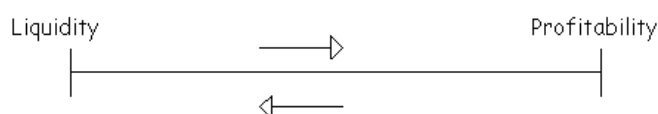
"dry up" this can lead to a decline in business growth as well as put difficult strains on consumers managing liquidity risk is to ensure the banks own liquidity so that the bank can continue to serve its function.

Liquidity risk is the risk of being unable to satisfy claims without impairment of financial or reputational capital. The problem with the banks is that their assets are illiquid in the long term but the liabilities are liquid and short-term in nature so it is critical for the banks to ensure banking liquidity which is the ability of institution to meet obligations under normal business conditions. Liquidity failure of a single bank can lead to system wide repercussions which can lead to financial distress. Liquidity risk for a bank is especially prevalent as it is easy for a bank to lose its liquidity because depositors can withdraw funds when they choose. In addition to depositors, banks face another way in which their cash reserves can be strained by fulfilling obligations to companies. These companies have previously established loan commitments, called credit lines, that can be borrowed from the bank when needed (Gatev, Schuermann, & Strahan, 2007).

An asset's liquidity can be used to describe how quickly, easily and costly it is to convert that asset into cash (Berger & Bouwman, 2008). Liquidity can also be used to describe a company by the amount of cash or near cash assets a company has; the more liquid assets, the higher a company's liquidity. Financial ratios that measure liquidity are referred to as a company's liquidity ratios. Liquidity risk has many definitions but the one that can be derived from the ratio is the probability that a company will not be able to pay its short term obligations as they come due. This inability can lead a company to face serious financial problems.

Liquidity management has a direct bearing on the profit earning capacity of the company. It is already established fact that there is inverse direct correlation between the liquidity and profitability. The large holding of current assets, especially cash, strengthens the firm's liquidity position (and reduces risk), but also reduces the overall profitability.

**The Liquidity Versus Profitability Principle:** There is a trade-off between liquidity and profitability; gaining more of one ordinarily means giving up some of the other.



As in the above picture "Liquidity" as being on one end of a straight line and "Profitability" on the other end. If one steps forward on the line and move toward one, then automatically move away from the other. In other words, there is the trade-off between liquidity and profitability.

Similarly, there is a direct relationship between higher risk and higher return. A company taking higher risk could endanger its liquidity position. However, if a company has a higher return it will increase its profitability.

## 2. Literature Review

Review of literature is a process of developing an insight into both conceptual and research based studies available on the area and the topic chosen. Thus the review of literature in the present study does consist of research based and conceptual based studies available in India as well as abroad.

Abuzar M.A. Elijelly (2004), in the study on "Liquidity - profitability tradeoff: An empirical investigation in an emerging market" empirically examined the relation between profitability and liquidity, as measured by current ratio and cash gap (cash conversion cycle) on a sample of joint stock companies in Saudi Arabia. The study found significant negative relation between the firm's profitability and its liquidity level, as measured by current ratio."

Lazaridis, Ioannis, Tryfonidis, Dimitrios, (2006), in their paper on "Relationship Between Working Capital Management and Profitability of Listed Companies in the Athens Stock Exchange" investigated the relationship of corporate profitability and working capital management. Used a sample of 131 companies listed in the Athens Stock Exchange (ASE) for the period of 2001-2004. The results of research showed that there is statistical significance between profitability, measured through gross operating profit, and the cash conversion cycle. Moreover managers can create profits for their companies by handling correctly the cash conversion cycle and keeping each different component (accounts receivables, accounts payables, inventory) to an optimum level.

Adolphusj. Toby (2008), in the paper on "Liquidity performance in Nigerian manufacturing companies" the author investigates the empirical relationship between liquidity and other performance measures in Nigerian manufacturing companies. The result shows statistically significant relationships between liquidity and profitability, efficiency and leverage measures.

P.K. Das (2008), in "A study on Liquidity Management in Ranbaxy Laboratories Ltd." Analysed the liquidity position of the company through several measures like ratio analysis, correlation analysis, t- Test, liquidity ranking etc., revealed that the overall liquidity position of the company was satisfactory.

Chakraborty (2008), in the study on "Working Capital and Profitability: An Empirical Analysis of Their Relationship with Reference to Selected Companies in the Indian Pharmaceutical Industry" evaluated the relationship between working capital and profitability of Indian pharmaceutical companies. He pointed out that there were two distinct schools of thought on this issue: according to one school of thought, working capital is not a factor of improving profitability and there may be a negative relationship between them, while according to the other school of thought, investment in working capital plays a vital role to improve corporate profitability, and unless there is a minimum level of investment of working capital, output and sales cannot be maintained - in fact, the inadequacy of working capital would keep fixed asset inoperative.

Singh and Pandey (2008), by their study on "Impact of Working Capital Management in the Profitability of Hindalco Industries Limited" suggested that, for the successful working of any business organization, fixed and current assets play a vital role, and that the management of working capital is essential as it has a direct impact on profitability and liquidity. They studied the working capital components and found a significant impact of working capital management on profitability for Hindalco Industries Limited.

James Clausen (2009), in the article on "Accounting 101 - Financial Statement Analysis in Accounting: Liquidity Ratio Analysis Balance Sheet Assets and Liabilities" analysed the financial statements to measure company performance. Investors and lending institutions will often use ratio analyses of the financial statements to determine a company's profitability and liquidity. If the ratios indicate poor performance, investors may be reluctant to invest.

Gopinathan Thachappilly(2009), in his study on "Financial Ratio Analysis for Performance Check: Financial Statement Analysis with Ratios Can Reveal Problem Areas" he stated that the Liquidity Ratios help Good Financial performance. More profitability can lead to severe implications on liquidity of the business which causes damage to the reputation of the company and can cause financial troubles so the financial position of the company is being analysed on the basis of various ratios to ascertain the profitability & Liquidity position.

Bhunia Amalendu (2009), in his paper on "Financial performance of Indian pharmaceutical industry- A case study" attempted to measure the firm's liquidity, profitability, and other indicators that the business is conducted to maximize shareholder's wealth. In this context researcher has undertaken an analysis of pharmaceutical companies to understand how management plays a crucial role in the growth. The present study covers two public sector drug & pharmaceutical enterprises listed on BSE in between 1887-98 to 2008-09. In order to analyze financial performance in terms of liquidity, solvency and profitability and financial efficiency, various accounting ratios have been used. Statistical measures i.e. linear multiple regression analysis and test of hypothesis- t-test has been used. He found that the liquidity position of the selected companies is strong.

Moraes, Sherin,(2010) in her article on " Liquidity v/s profitability - Striking the right balance" writes about the implications of liquidity and profitability in a pharmaceutical company. A firm is required to maintain a balance between liquidity and profitability while conducting its day to day operations. Investments in current assets are inevitable to ensure delivery of goods or services to the ultimate customers. A proper management of the same could result in the desired impact on either profitability or liquidity.

### 3. Industry Profile

Consumers now seek to exercise their influence in every walk of the business system, interact with firms and co-create value. As the outreach is enlarged in the industry with the increased

number of banks and wider network, the customer demands convenience, comfort, speed, cost-effective and quality services in the banking operations. In the recent years the Indian banking industry saw a host of new faces called new generation banks entering with their innovative strategies. All these bankers are generally slim in structure but heavily using the technology and multi-channel facilities to reach out to a large section of the customers.

- 1) 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. The Bank was promoted jointly by the Administrator of the specified undertaking of the Unit Trust of India (UTI - I), Life Insurance Corporation of India (LIC) and General Insurance Corporation of India (GIC) and other four PSU insu. Axis Bank Limited is an India-based bank. The Bank operates in four segments: treasury operation, which includes investments in sovereign and corporate debt, equity and mutual funds, trading operations, derivative trading and foreign exchange operations on the account, and for customers and central funding; retail banking, which includes lending to individuals/small businesses subject to the orientation, product and granularity criterion, and also includes liability products, card services, Internet banking, automated teller machines (ATM) services, depository, financial advisory services, and nonresident Indian services (NRI); corporate/wholesale banking, which includes corporate relationships not included under retail banking, corporate advisory services, placements and syndication, management of public issue, project appraisals, capital market related services, and cash management services, and other banking business, which includes para banking activities. The aim of axis bank is "To be the preferred financial solutions provider excelling in customer delivery through insight, empowered employees and smart use of technology".
- 2) HDFC Bank Limited (the Bank) is a banking company. The Bank is engaged in providing a range of banking and financial services. HDFC Bank was incorporated in August 1994. The Bank operates in four segments: treasury, retail banking, wholesale banking and other banking business. The treasury segment primarily consists of net interest earnings from the Bank's investments portfolio, money market borrowing and lending, gains or losses on investment operations and on account of trading in foreign exchange and derivative contracts. The retail banking segment raises deposits from customers and makes loans and provides other services. The wholesale banking segment provides loans, non-fund facilities and transaction services to large corporates, emerging corporates, public sector units, government bodies, financial institutions and medium scale enterprises. The other banking business segment includes income from para banking activities, such as credit cards, debit cards and third party product distribution, primary dealership business. Housing Development Finance Corporation Limited (HDFC Ltd.) was established with the primary objective of "meeting a social need of encouraging home ownership by providing long-term finance to households."

- 3) Punjab National Bank was established in 1895 in Lahore is one of the oldest banks in India. PNB offers banking products, and also operates credit card and debit card business, bullion business, life and non-life insurance business, and gold coins and asset management business. Punjab National Bank (PNB) is one of India's largest nationalized banks, with some 5,000 locations. Punjab National Bank (PNB) is the second largest government-owned commercial bank in India. Having more than 3.5 crore customer, Punjab National Bank has one of the largest branch networks in India. The vision of PNB is "To be a Leading Global Bank with Pan India footprints and become a household brand in the Indo-Gangetic Plains providing entire range of financial products and services under one roof". And the mission is "Banking for the unbanked".
- 4) State Bank of India is an India-based bank. In addition to banking, the Company, through its subsidiaries, provides a range of financial services, which include life insurance, merchant banking, mutual funds, credit card, factoring, security trading, pension fund management and primary dealership in the money market. It operates in four business segments: the treasury segment includes the entire investment portfolio and trading in foreign exchange contracts and derivative contracts; the corporate / wholesale banking segment comprises the lending activities of corporate accounts group, mid corporate accounts group and stressed assets management group; the retail banking segment comprises of branches in National Banking Group, which primarily includes personal banking activities, and other banking business. The evolution of State Bank of India can be traced back to the first decade of the 19th century. Bank of Madras merged into the other two presidency banks, Bank of Calcutta and Bank of Bombay to form Imperial Bank of India, which in turn became State Bank of India. The Government of India nationalized the Imperial Bank of India in 1955, with the Reserve Bank of India taking a 60% stake, and renamed it the State Bank of India. In 2008, the Government took over the stake held by the Reserve Bank of India. The Vision is: "To be amongst most trusted power utility company of the country by providing environment friendly power on most cost effective basis, ensuring prosperity for its stakeholders and growth with human face. The Mission is "To ensure most cost effective power for sustained growth of India."

#### **4. Objectives of the Study**

- a. To study the liquidity position of the banks under study.
- b. To compare the liquidity position of the selected banks.
- c. To examine the relationship between liquidity and profitability.

#### **5. Research Hypothesis**

The null hypothesis formed is: "Liquidity is not competing with profitability i.e. change in liquidity does not lead to any effect on profitability."

## 6. Research Methodology

As the topic suggests, this research is of casual research type where the main goal is to identify the cause and effect relationship among Corporate Liquidity and Profitability. The sample size of the study is 4 banks, 2 private banks namely: Axis Bank and HDFC Bank, 2 nationalised banks namely: Punjab National Bank and State Bank of India. The data is secondary in nature and is collected from published annual reports of the banks from the year 2007 to 2011. The main purpose of the study is to establish a relationship between corporate liquidity and Profitability through the application of various techniques of ratio analysis, average, Standard Deviation, Coefficient of variation, Spearman's rank correlation and t-test to come to a concrete result.

## 7. Data Analysis

Liquid assets such as investment securities, enable a bank to respond quickly to unexpected demands for cash and typically reflect relatively conservative financial strategies, whereas volatile liabilities, such as large certificates of deposits, often reflect relatively aggressive financial strategies impose high interest expenses, and are subject to quick withdrawal. As a result, we expect higher values of investment securities to reduce the chance of failure, whereas higher values of large certificates of deposit should increase the probability of failure. Thus liquidity management is one of the most important functions of a bank. If funds tapped are not properly utilized, the institution should suffer loss. Idle cash balance in hand has no yield. On the other hand if the bank does not keep balanced liquid cash in hand, it cannot be able to pay the demand withdrawal of depositors, as well as, instalment of creditors and ultimately payment for other contingent liabilities. These will lead overtrading position to the institution and create problems to borrow funds at high rate. So, proper balance of liquidity should be maintained by avoiding inadequate cash position, or excess cash position. The liquidity position of the banks understudy is presented in tables 1 and 5 by computing 5 ratios which represent the liquidity position of the banks.

**Table 1: Liquid Assets to Total Assets Ratio of Banking Companies**

Sr. No.	Company	Year					Mean	S.D.	C.V.
		2010-11	2009-10	2008-09	2007-08	2006-07			
1	AXIS BANK	0.088	0.084	0.102	0.114	0.094	0.096	0.012	12.396
2	HDFC BANK	0.107	0.135	0.096	0.111	0.099	0.110	0.015	14.070
3	PNB	0.078	0.104	0.087	0.095	0.096	0.092	0.010	10.733
4	SBI	0.100	0.091	0.108	0.094	0.092	0.097	0.007	7.290

In the table 1, it is depicted that the liquid assets of Banking Companies which consist of cash, balances with RBI and other banks as well as money at call and short notice, formed Re 0.135 in HDFC Bank in 2009-10 (total assets). On an average the liquid ratio is least in PNB (0.092) and maximum in HDFC Bank (0.110). State Bank of India, Axis Bank followed HDFC

Bank with 0.097 and 0.096 respectively. During the period of study State Bank of India with a C.V. of 7.29 shows the consistency in maintaining the liquid assets, on the other hand HDFC Bank was the most variable with a C. V. of 14.070.

**Table 2: Govt. & Other Securities (Investments) Assets to Total Assets Ratio of Banking Companies**

Sr. No.	Company	Year					Mean	S.D.	C.V.
		2010-11	2009-10	2008-09	2007-08	2006-07			
1	AXIS BANK	0.297	0.310	0.314	0.308	0.367	0.319	0.027	8.601
2	HDFC BANK	0.256	0.263	0.321	0.371	0.335	0.309	0.049	15.835
3	PNB	0.252	0.034	0.257	0.271	0.278	0.218	0.104	47.441
4	SBI	0.242	0.271	0.286	0.263	0.263	0.265	0.016	6.008

The investment in Govt. and other securities held by the bank visa viz. to total assets are clear indicators of banks liquidity position, as this investment ratio has remained consistent around an average of 0.39. The more consistency is shown by SBI as its coefficient of variation is lowest and the flexibility is shown by the coefficient of variation figures of PNB.

**Table 3: Current Assets to Total Assets Ratio of Banking Companies**

Sr. No.	Company	Year					Mean	S.D.	C.V.
		2010-11	2009-10	2008-09	2007-08	2006-07			
1	AXIS BANK	0.107	0.106	0.127	0.140	0.120	0.120	0.014	11.888
2	HDFC BANK	0.160	0.161	0.130	0.144	0.140	0.147	0.013	9.076
3	PNB	0.100	0.131	0.107	0.117	0.121	0.115	0.012	10.496
4	SBI	0.136	0.125	0.147	0.155	0.136	0.140	0.012	8.240

The current assets to total assets ratio of the banking companies is least with an average of 0.115 of PNB and highest with an average of 0.147 of HDFC Bank. The State Bank of India shows highest level of consistency as its coefficient of variation is lowest and the maximum flexibility is represented by the coefficient of variation figures of Axis Bank.

**Table 4: Liquid Assets to Deposits Ratio of Banking Companies**

Sr. No.	Company	Year					Mean	S.D.	C.V.
		2010-11	2009-10	2008-09	2007-08	2006-07			
1	AXIS BANK	0.113	0.108	0.128	0.143	0.118	0.122	0.014	11.372
2	HDFC BANK	0.142	0.179	0.123	0.147	0.132	0.145	0.021	14.756
3	PNB	0.095	0.094	0.102	0.113	0.112	0.103	0.009	8.759
4	SBI	0.132	0.120	0.141	0.126	0.119	0.128	0.009	7.153

In table 4 the liquid assets to deposit ratio is computed and the average is least with 0.103 of PNB and highest of 0.145 of HDFC bank. The consistency is depicted by the figures of SBI as its coefficient of variation is lowest and the more flexible is HDFC Bank with highest coefficient of variation.



**Table 5: Investment to Deposits Ratio of Banking Companies**

Sr. No.	Company	Year					Mean	S.D.	C.V.
		2010-11	2009-10	2008-09	2007-08	2006-07			
1	AXIS BANK	0.380	0.396	0.395	0.385	0.458	0.403	0.032	7.842
2	HDFC BANK	0.340	0.350	0.412	0.490	0.448	0.408	0.064	15.659
5	PNB	0.304	0.031	0.302	0.324	0.323	0.257	0.127	49.316
6	SBI	0.317	0.355	0.372	0.353	0.342	0.348	0.020	5.834

In table 5 the Investment to deposits ratio is computed which is also an important indicator to measure the financial performance of a banking company. The average is highest of HDFC bank in this case and lowest of PNB. The coefficient of variation figures is highest for PNB which indicates towards greater flexibility and the consistency is depicted in the coefficient of variation figure of SBI.

### Profitability Ratios

The 'Earnings/Profit' is a Conventional Parameter of measuring financial performance. Higher income generally reflects a lack of financial difficulties and so would be expected to reduce the likelihood of failure of a bank (Cole and Gunther, 1996). For the present study the accounting ratios calculated for the purpose of earnings analysis are depicted in table 6.

**Table 6: Return on Total Assets Ratio of Banking Companies**

Sr. No.	Company	Year					Mean	S.D.	C.V.
		2010-11	2009-10	2008-09	2007-08	2006-07			
1	AXIS BANK	1.396	1.392	1.229	0.977	0.900	1.179	0.231	19.603
2	HDFC BANK	1.416	1.326	1.225	1.194	1.251	1.282	0.089	6.958
3	PNB	1.172	1.723	1.252	1.029	0.948	1.225	0.303	24.720
4	SBI	0.675	0.870	0.946	0.933	0.802	0.845	0.111	13.138

It is exhibited in the Table 6 that all the banking companies under study perform evenly during the period of study as the average of five years ratio varied from 0.845% in SBI to 1.282% in HDFC Bank. Although, Standard Deviation is least in HDFC Bank (0.089%) and highest in PNB (0.303%).

The coefficient of variation of Return on Assets of all Banking Companies is varied from a low of 6.958% in HDFC Bank Limited and a high of 24.720% in PNB respectively.

### Relationship between Liquidity & Profitability

It is very essential for a banking company to have optimal balance of liquidity and maximizing the earning capacity as banks are liquidity creator and liquidity provider also. The next tables in the sequence depict the relationship between liquidity & profitability. In this the techniques of correlation and t-test is been applied to test the significance of the result obtained.

## Axis Bank

Table 8(A): Calculation of 'r' and 't' from Liquid Assets to Total Assets Ratio and Return on Total Assets Ratio

Year	Liquid Assets to Total Assets Ratio (X)	Return on Total Assets Ratio (Y)	Xi-X	(Xi-X) <sup>2</sup>	Yi-Y	(Yi-Y) <sup>2</sup>	(Xi-X) (Yi-Y)
2007	0.094	0.9	-0.0024	0.00000576	-0.2788	0.077729	0.00066912
2008	0.114	0.977	0.0176	0.00030976	-0.2018	0.040723	-0.00355168
2009	0.102	1.229	0.0056	0.00003136	0.0502	0.00252	0.00028112
2010	0.084	1.392	-0.0124	0.00015376	0.2132	0.045454	-0.00264368
2011	0.088	1.396	-0.0084	0.00007056	0.2172	0.047176	-0.00182448
TOTAL	0.482	5.894	0	0.0005712	0	0.213603	-0.0070696

$$X=0.0964$$

$$Y=1.1788$$

$$R = \frac{\sum (X_i - X)(Y_i - Y)}{\sqrt{\sum (X_i - X)^2 * (\sum Y_i - Y)^2}}$$

$$= -0.640025492$$

$$T = R\sqrt{N} - \frac{2}{1-R^2}$$

$$= -1.87774$$

Since the calculated value of 't' is less than the tabulated value (3.182) at 3 degree of freedom at 5% level of significance, which indicates for the acceptance of null hypothesis, therefore the relationship is insignificant.

Table 8(B): Calculation of 'r' and 't' from Govt. &amp; Other Securities (Investments) Assets to Total Assets Ratio and Return on Total Assets Ratio

Year	Govt. & Other Securities (Investments) Assets to Total Assets Ratio (X)	Return on Total Assets Ratio (Y)	Xi-X	(Xi-X) <sup>2</sup>	Yi-Y	(Yi-Y) <sup>2</sup>	(Xi-X) (Yi-Y)
2007	0.367	0.900	0.0478	0.00228484	-0.2788	0.077729	-0.01332664
2008	0.308	0.977	-0.0112	0.00012544	-0.2018	0.040723	0.00226016
2009	0.314	1.229	-0.0052	0.00003136	0.0502	0.00252	-0.00026104
2010	0.310	1.392	-0.0092	0.00008464	0.2132	0.045454	-0.00196144
2011	0.297	1.396	-0.0222	0.00007056	0.2172	0.047176	-0.00482184
Total	1.596	5.894	0	0.00259684	0	0.213603	-0.0181108

$$X=0.3192$$

$$Y=1.1788$$

$$R=-0.768973844$$

$$T=-3.25904$$

Since the calculated value of 't' is less than the tabulated value (3.182) at 3 degree of freedom at 5% level of significance, which indicates for the acceptance of null hypothesis, which means that there exists a insignificant relationship between liquidity & profitability ratio.

**Table 8(C): Calculation of 'r' and 't' from Current Assets to Total Assets Ratio and Return on Total Assets Ratio**

Year	Current Assets to Total Assets Ratio (X)	Return on Total Assets Ratio (Y)	Xi-X	(Xi-X) <sup>2</sup>	Yi-Y	(Yi-Y) <sup>2</sup>	(Xi-X) (Yi-Y)
2007	0.120	0.900	0	0	-0.2788	0.077729	0
2008	0.140	0.977	0.02	0.0004	-0.2018	0.040723	-0.004036
2009	0.127	1.229	0.007	0.00003136	0.0502	0.00252	0.0003514
2010	0.106	1.392	-0.014	0.000196	0.2132	0.045454	-0.0029848
2011	0.107	1.396	-0.013	0.00007056	0.2172	0.047176	-0.0028236
Total	0.600	5.894	0	0.00069792	0	0.213603	-0.009493

$$X = 0.12$$

$$Y = 1.1788$$

$$R = -0.777494254$$

$$T = -3.40493$$

Since the calculated value of 't' is less than the tabulated value (3.182) at 3 degree of freedom at 5% level of significance, which indicates for the acceptance of null hypothesis, which means that there exists a insignificant relationship between liquidity & profitability ratio.

**Table 8(D): Calculation of 'r' and 't' from Liquid Assets to Deposits Ratio and Return on Total Assets Ratio**

Year	Liquid Assets to Deposits Ratio (X)	Return on Total Assets Ratio (Y)	Xi-X	(Xi-X) <sup>2</sup>	Yi-Y	(Yi-Y) <sup>2</sup>	(Xi-X) (Yi-Y)
2007	0.118	0.9	-0.004	0.000016	-0.2788	0.077729	0.0011152
2008	0.143	0.977	0.021	0.000441	-0.2018	0.040723	-0.0042378
2009	0.128	1.229	0.006	0.00003136	0.0502	0.00252	0.0003012
2010	0.108	1.392	-0.014	0.000196	0.2132	0.045454	-0.0029848
2011	0.113	1.396	-0.009	0.00007056	0.2172	0.047176	-0.0019548
Total	0.610	5.894	0	0.00075492	0	0.213603	-0.007761

$$X = 0.122 \quad Y = 1.1788$$

$$R = -0.611172419$$

$$T = -1.68976$$

Since the calculated value of 't' is less than the tabulated value (3.182) at 3 degree of freedom at 5% level of significance, which indicates for the acceptance of null hypothesis, which means that there exists a insignificant relationship between liquidity & profitability ratio.

**Table 8(E): Calculation of 'r' and 't' from Investments to Deposits Ratio and Return on Total Assets Ratio**

Year	Investment to Deposits Ratio (X)	Return on Total Assets Ratio (Y)	Xi-X	(Xi-X) <sup>2</sup>	Yi-Y	(Yi-Y) <sup>2</sup>	(Xi-X) (Yi-Y)
2007	0.458	0.9	0.0552	0.00304704	-0.2788	0.077729	-0.01538976
2008	0.385	0.977	-0.0178	0.00031684	-0.2018	0.040723	0.00359204
2009	0.395	1.229	-0.0078	0.00003136	0.0502	0.00252	-0.00039156
2010	0.396	1.392	-0.0068	0.00004624	0.2132	0.045454	-0.00144976
2011	0.380	1.396	-0.0228	0.00007056	0.2172	0.047176	-0.00495216
Total	2.014	5.894	0	0.00351204	0	0.213603	-0.0185912

$$X = 0.4028 \quad Y = 1.1788$$

$$r = -0.678772479$$

$$t = -2.18012$$

Since the calculated value of 't' is less than the tabulated value (3.182) at 3 degree of freedom at 5% level of significance, which indicates for the acceptance of null hypothesis, which means that there exists a insignificant relationship between liquidity & profitability ratio.

Similarly. The figures of 'r' and 't' are computed for other banks also.

## HDFC Bank

**Table 9(A): Calculation of 'r' and 't' from Investments to Deposits Ratio and Return on Total Assets Ratio**

Year	Liquid Assets to Total Assets Ratio (X)	Return on Total Assets Ratio (Y)	Xi-X	(Xi-X) <sup>2</sup>	Yi-Y	(Yi-Y) <sup>2</sup>	(Xi-X) (Yi-Y)
2007	0.099	1.251	-0.0106	0.00011236	-0.0314	0.000986	0.00033284
2008	0.111	1.194	0.0014	0.00000196	-0.0884	0.007815	-0.00012376
2009	0.096	1.225	-0.0136	0.00003136	-0.0574	0.003295	0.00078064
2010	0.135	1.326	0.0254	0.00064516	0.0436	0.001901	0.00110744
2011	0.107	1.416	-0.0026	0.00000706	0.1336	0.017849	-0.00034736
Total	0.548	6.412	0	0.0008614	0	0.031845	0.0017498

$$X = 0.1096 \quad Y = 1.2824$$

$$R = 0.334090394$$

$$T = 0.651364$$

Since the calculated value of 't' is less than the tabulated value (3.182) at 3 degree of freedom at 5% level of significance, which indicates for the acceptance of null hypothesis, which means that there exists a insignificant relationship between liquidity & profitability ratio.

**Table 9(B): Calculation of 'r' and 't' from Investments to Deposits Ratio and Return on Total Assets Ratio**

Year	Govt. & Other Securities (Investments) Assets to Total Assets Ratio (X)	Return on Total Assets Ratio (Y)	Xi-X	(Xi-X) <sup>2</sup>	Yi-Y	(Yi-Y) <sup>2</sup>	(Xi-X) (Yi-Y)
2007	0.335	1.251	0.0258	0.00066564	-0.0314	0.000986	-0.00081012
2008	0.371	1.194	0.0618	0.00381924	-0.0884	0.007815	-0.00546312
2009	0.321	1.225	0.0118	0.00003136	-0.0574	0.003295	-0.00067732
2010	0.263	1.326	-0.0462	0.00213444	0.0436	0.001901	-0.00201432
2011	0.256	1.416	-0.0532	0.00007056	0.1336	0.017849	-0.00710752
Total	1.546	6.412	0	0.00672124	0	0.031845	-0.0160724

$$X = 0.3092 \quad Y = 1.2824$$

$$R = -1.0$$

$$T = 9.197142$$

Since the calculated value of 't' is more than the tabulated value (3.182) at 3 degree of freedom at 5% level of significance, which indicates for the rejection of null hypothesis, which means that there exists a significant relationship between liquidity & profitability ratio.

**Table 9(C): Calculation of 'r' and 't' from Current Assets to Total Assets Ratio and Return on Total Assets Ratio**

Year	Current Assets to Total Assets Ratio (X)	Return on Total Assets Ratio (Y)	Xi-X	(Xi-X) <sup>2</sup>	Yi-Y	(Yi-Y) <sup>2</sup>	(Xi-X) (Yi-Y)
2007	0.140	1.251	-0.007	0.000049	-0.0314	0.000986	0.0002198
2008	0.144	1.194	-0.003	0.000009	-0.0884	0.007815	0.0002652
2009	0.130	1.225	-0.017	0.00003136	-0.0574	0.003295	0.0009758
2010	0.161	1.326	0.014	0.000196	0.0436	0.001901	0.0006104
2011	0.160	1.416	0.013	0.00007056	0.1336	0.017849	0.0017368
Total	0.735	6.412	0	0.00035592	0	0.031845	0.003808

$$X = 0.147$$

$$Y = 1.2824$$

$$R = 1.131094141$$

$$T = -7.01251$$

Since the calculated value of 't' is less than the tabulated value (3.182) at 3 degree of freedom at 5% level of significance, which indicates for the acceptance of null hypothesis, which means that there exists a insignificant relationship between liquidity & profitability ratio.

**Table 9(D): Calculation of 'r' and 't' from Liquid Assets to Deposits Ratio and Return on Total Assets Ratio**

Year	Liquid Assets to Deposits Ratio (X)	Return on Total Assets Ratio (Y)	Xi-X	(Xi-X) <sup>2</sup>	Yi-Y	(Yi-Y) <sup>2</sup>	(Xi-X) (Yi-Y)
2007	0.132	1.251	-0.0126	0.00015876	-0.0314	0.000986	0.00039564
2008	0.147	1.194	0.0024	0.00000576	-0.0884	0.007815	-0.00021216
2009	0.123	1.225	-0.0216	0.00046656	-0.0574	0.003295	0.00123984
2010	0.179	1.326	0.0344	0.00118336	0.0436	0.001901	0.00149984
2011	0.142	1.416	-0.0026	0.00000676	0.1336	0.017849	-0.00034736
Total	0.723	6.412	0	0.0018212	0	0.031845	0.0025758

$$X = 0.1446$$

$$Y = 1.2824$$

$$R = 0.338229379$$

$$T = 0.661506$$

Since the calculated value of 't' is less than the tabulated value (3.182) at 3 degree of freedom at 5% level of significance, which indicates for the acceptance of null hypothesis, which means that there exists a insignificant relationship between liquidity & profitability ratio.

**Table 9(E): Calculation of 'r' and 't' from Investments to Deposits Ratio and Return on Total Assets Ratio**

Year	Investment to Deposits Ratio (X)	Return on Total Assets Ratio (Y)	Xi-X	(Xi-X) <sup>2</sup>	Yi-Y	(Yi-Y) <sup>2</sup>	(Xi-X) (Yi-Y)
2007	0.448	1.251	0.04	0.0016	-0.0314	0.000986	-0.001256
2008	0.490	1.194	0.082	0.006724	-0.0884	0.007815	-0.0072488
2009	0.412	1.225	0.004	0.00001	-0.0574	0.003295	-0.0002296
2010	0.350	1.326	-0.058	0.003364	0.0436	0.001901	-0.0025288
2011	0.340	1.416	-0.068	0.004624	0.1336	0.017849	-0.0090848
Total	2.040	6.412	0	0.016328	0	0.031845	-0.020348

$$X = 0.408$$

$$Y = 1.2824$$

$$R = -0.892345921$$

$$T = -7.58687$$

Since the calculated value of 't' is less than the tabulated value (3.182) at 3 degree of freedom at 5% level of significance, which indicates for the acceptance of null hypothesis, which means that there exists a insignificant relationship between liquidity & profitability ratio.

## PNB

**Table 10(A): Calculation of 'r' and 't' from Liquid Assets to Total Assets Ratio and Return on Total Assets Ratio**

Year	Liquid Assets to Total Assets Ratio (X)	Return on Total Assets Ratio (Y)	Xi-X	(Xi-X) <sup>2</sup>	Yi-Y	(Yi-Y) <sup>2</sup>	(Xi-X) (Yi-Y)
2007	0.096	0.948	0.0040000	0.0000160	-0.2768000	0.0766182	-0.0011072
2008	0.095	1.029	0.0030000	0.0000090	-0.1958000	0.0383376	-0.0005874
2009	0.087	1.252	-0.0050000	0.0000250	0.0272000	0.0007398	-0.0001360
2010	0.104	1.723	0.0120000	0.0001440	0.4982000	0.2482032	0.0059784
2011	0.078	1.172	-0.0140000	0.0001960	-0.0528000	0.0027878	0.0007392
Total	0.46	6.124	0.0000000	0.0003900	0.0000000	0.3666868	0.0048870

$$X = 0.092$$

$$Y = 1.2248$$

$$R = 0.408660251$$

$$T = 0.849728$$

Since the calculated value of 't' is less than the tabulated value (3.182) at 3 degree of freedom at 5% level of significance, which indicates for the acceptance of null hypothesis, which means that there exists a insignificant relationship between liquidity & profitability ratio.

**Table 10(B): Calculation of 'r' and 't' from Govt. & Other Securities (Investments) Assets to Total Assets Ratio and Return on Total Assets Ratio**

Year	Govt. & Other Securities (Investments) Assets to Total Assets Ratio (X)	Return on Total Assets Ratio (Y)	Xi-X	(Xi-X) <sup>2</sup>	Yi-Y	(Yi-Y) <sup>2</sup>	(Xi-X) (Yi-Y)
2007	0.278	0.948	0.0596000	0.0035522	-0.2768000	0.0766182	-0.0164973
2008	0.271	1.029	0.0526000	0.0027668	-0.1958000	0.0383376	-0.0102991
2009	0.257	1.252	0.0386000	0.0014900	0.0272000	0.0007398	0.0010499
2010	0.034	1.723	-0.1844000	0.0340034	0.4982000	0.2482032	-0.0918681
2011	0.252	1.172	0.0336000	0.0011290	-0.0528000	0.0027878	-0.0017741
Total	1.092	6.124	0.0000000	0.0429412	0.0000000	0.3666868	-0.1193886

$$X = .2184 \quad Y = 1.2248$$

$$R = -0.95143283$$

$$T = -17.3877$$

Since the calculated value of 't' is less than the tabulated value (3.182) at 3 degree of freedom at 5% level of significance, which indicates for the acceptance of null hypothesis, which means that there exists a insignificant relationship between liquidity & profitability ratio.

**Table 10(C): Calculation of 'r' and 't' from Current Assets to Total Assets Ratio and Return on Total Assets Ratio**

Year	Current Assets to Total Assets Ratio (X)	Return on Total Assets Ratio (Y)	Xi-X	(Xi-X) <sup>2</sup>	Yi-Y	(Yi-Y) <sup>2</sup>	(Xi-X) (Yi-Y)
2007	0.121	0.948	0.0058000	0.0000336	-0.2768000	0.0766182	-0.0016054
2008	0.117	1.029	0.0018000	0.0000032	-0.1958000	0.0383376	-0.0003524
2009	0.107	1.252	-0.0082000	0.0000672	0.0272000	0.0007398	-0.0002230
2010	0.131	1.723	0.0158000	0.0002496	0.4982000	0.2482032	0.0078716
2011	0.1	1.172	-0.0152000	0.0002310	-0.0528000	0.0027878	0.0008026
Total	0.576	6.124	0.0000000	0.0005848	0.0000000	0.3666868	0.0064932

$$X = .1152 \quad Y = 1.2248$$

$$R = 0.443412018$$

$$T = 0.955969$$

Since the calculated value of 't' is less than the tabulated value (3.182) at 3 degree of freedom at 5% level of significance, which indicates for the acceptance of null hypothesis, which means that there exists a insignificant relationship between liquidity & profitability ratio.

**Table 10(D): Calculation of 'r' and 't' from Liquid Assets to Deposits Ratio and Return on Total Assets Ratio**

Year	Liquid Assets to Deposits Ratio (X)	Return on Total Assets Ratio (Y)	Xi-X	(Xi-X) <sup>2</sup>	Yi-Y	(Yi-Y) <sup>2</sup>	(Xi-X) (Yi-Y)
2007	0.112	0.948	0.0088000	0.0000774	-0.2768000	0.0766182	-0.0024358
2008	0.113	1.029	0.0098000	0.0000960	-0.1958000	0.0383376	-0.0019188
2009	0.102	1.252	-0.0012000	0.0000014	0.0272000	0.0007398	-0.0000326
2010	0.094	1.723	-0.0092000	0.0000846	0.4982000	0.2482032	-0.0045834
2011	0.095	1.172	-0.0082000	0.0000672	-0.0528000	0.0027878	0.0004330
Total	0.516	6.124	0.0000000	0.0003268	0.0000000	0.3666868	-0.0085378



$$X = .1032 \quad Y = 1.2248$$

$$R = -0.779933033$$

$$T = -3.44873$$

Since the calculated value of 't' is less than the tabulated value (3.182) at 3 degree of freedom at 5% level of significance, which indicates for the acceptance of null hypothesis, which means that there exists a insignificant relationship between liquidity & profitability ratio.

**Table 10(E): Calculation of 'r' and 't' from Investments to Deposits Ratio and Return on Total Assets Ratio**

Year	Investment to Deposits Ratio (X)	Return on Total Assets Ratio (Y)	Xi-X	(Xi-X) <sup>2</sup>	Yi-Y	(Yi-Y) <sup>2</sup>	(Xi-X) (Yi-Y)
2007	0.323	0.948	0.0662000	0.0043824	-0.2768000	0.0766182	-0.0183242
2008	0.324	1.029	0.0672000	0.0045158	-0.1958000	0.0383376	-0.0131578
2009	0.302	1.252	0.0452000	0.0020430	0.0272000	0.0007398	0.0012294
2010	0.031	1.723	-0.2258000	0.0509856	0.4982000	0.2482032	-0.1124936
2011	0.304	1.172	0.0472000	0.0022278	-0.0528000	0.0027878	-0.0024922
Total	1.284	6.124	0.0000000	0.0641548	0.0000000	0.3666868	-0.1452382

$$X = .2568 \quad Y = 1.2248$$

$$R = -0.94693167$$

$$T = -15.8742$$

Since the calculated value of 't' is less than the tabulated value (3.182) at 3 degree of freedom at 5% level of significance, which indicates for the acceptance of null hypothesis, which means that there exists a insignificant relationship between liquidity & profitability ratio.

## SBI

**Table 11(A): Calculation of 'r' and 't' from Liquid Assets to Total Assets Ratio and Return on Total Assets Ratio**

Year	Liquid Assets to Total Assets Ratio (X)	Return on Total Assets Ratio (Y)	Xi-X	(Xi-X) <sup>2</sup>	Yi-Y	(Yi-Y) <sup>2</sup>	(Xi-X) (Yi-Y)
2007	0.092	0.802	-0.0050000	0.0000250	-0.0432000	0.0018662	0.0002160
2008	0.094	0.933	-0.0030000	0.0000090	0.0878000	0.0077088	-0.0002634
2009	0.108	0.946	0.0110000	0.0001210	0.1008000	0.0101606	0.0011088
2010	0.091	0.87	-0.0060000	0.0000360	0.0248000	0.0006150	-0.0001488
2011	0.1	0.675	0.0030000	0.0000090	-0.1702000	0.0289680	-0.0005106
Total	0.485	4.226	0.0000000	0.0002000	0.0000000	0.0493188	0.0004020

$$X = .097 \quad Y = .8452$$

$$R = 0.127998478$$

$$T = 0.225393$$

Since the calculated value of 't' is less than the tabulated value (3.182) at 3 degree of freedom at 5% level of significance, which indicates for the acceptance of null hypothesis, which means that there exists a insignificant relationship between liquidity & profitability ratio.

**Table 11(B): Calculation of 'r' and 't' from Govt. & Other Securities (Investments) Assets to Total Assets Ratio and Return on Total Assets Ratio**

Year	Govt. & Other Securities (Investments) Assets to Total Assets Ratio (X)	Return on Total Assets Ratio (Y)	Xi-X	(Xi-X) <sup>2</sup>	Yi-Y	(Yi-Y) <sup>2</sup>	(Xi-X) (Yi-Y)
2007	0.263	0.802	-0.0020000	0.0000040	-0.0432000	0.0018662	0.0000864
2008	0.263	0.933	-0.0020000	0.0000040	0.0878000	0.0077088	-0.0001756
2009	0.286	0.946	0.0210000	0.0004410	0.1008000	0.0101606	0.0021168
2010	0.271	0.087	0.0060000	0.0000360	0.0248000	0.0006150	0.0001488
2011	0.242	0.675	-0.0230000	0.0005290	-0.1702000	0.0289680	0.0039146
Total	1.325	4.226	0.0000000	0.0010140	0.0000000	0.0493188	0.0060910

$$X = .265 \quad Y = .8452$$

$$R = 0.861317699$$

$$T = 5.779396$$

Since the calculated value of 't' is more than the tabulated value (3.182) at 3 degree of freedom at 5% level of significance, which indicates for the rejection of null hypothesis, which means that there exists a significant relationship between liquidity & profitability ratio.

**Table 11(C): Calculation of 'r' and 't' from Current Assets to Total Assets Ratio and Return on Total Assets Ratio**

Year	Current Assets to Total Assets Ratio (X)	Return on Total Assets Ratio (Y)	Xi-X	(Xi-X) <sup>2</sup>	Yi-Y	(Yi-Y) <sup>2</sup>	(Xi-X) (Yi-Y)
2007	0.136	0.802	-0.0038000	0.0000144	-0.0432000	0.0018662	0.0001642
2008	0.155	0.933	0.0152000	0.0002310	0.0878000	0.0077088	0.0013346
2009	0.147	0.946	0.0072000	0.0000518	0.1008000	0.0101606	0.0007258
2010	0.125	0.087	-0.0148000	0.0002190	0.0248000	0.0006150	-0.0003670
2011	0.136	0.675	-0.0038000	0.0000144	-0.1702000	0.0289680	0.0006468
Total	0.699	4.226	0.0000000	0.0005308	0.0000000	0.0493188	0.0025042

$$X = .1398 \quad Y = .8452$$

$$R = 0.48943757$$

$$T = 1.114774$$

Since the calculated value of 't' is less than the tabulated value (3.182) at 3 degree of freedom at 5% level of significance, which indicates for the acceptance of null hypothesis, which means that there exists a insignificant relationship between liquidity & profitability ratio.

**Table 11(D): Calculation of 'r' and 't' from Liquid Assets to Deposits Ratio and Return on Total Assets Ratio**

Year	Liquid Assets to Deposits Ratio (X)	Return on Total Assets Ratio (Y)	Xi-X	(Xi-X) <sup>2</sup>	Yi-Y	(Yi-Y) <sup>2</sup>	(Xi-X) (Yi-Y)
2007	0.119	0.802	-0.0086000	0.0000740	-0.0432000	0.0018662	0.0003715
2008	0.126	0.933	-0.0016000	0.0000026	0.0878000	0.0077088	-0.0001405
2009	0.141	0.946	0.0134000	0.0001796	0.1008000	0.0101606	0.0013507
2010	0.012	0.087	-0.0076000	0.0000578	0.0248000	0.0006150	-0.0001885
2011	0.132	0.675	0.0044000	0.0000194	-0.1702000	0.0289680	-0.0007489
Total	0.638	4.226	0.0000000	0.0003332	0.0000000	0.0493188	0.0006444

$$X = .1276 \quad Y = .8452$$

$$R = 0.158963269$$

$$T = 0.28247$$

Since the calculated value of 't' is less than the tabulated value (3.182) at 3 degree of freedom at 5% level of significance, which indicates for the acceptance of null hypothesis, which means that there exists a insignificant relationship between liquidity & profitability ratio.

**Table 11(E): Calculation of 'r' and 't' from Investments to Deposits Ratio and Return on Total Assets Ratio**

Year	Investment to Deposits Ratio (X)	Return on Total Assets Ratio (Y)	Xi-X	(Xi-X) <sup>2</sup>	Yi-Y	(Yi-Y) <sup>2</sup>	(Xi-X) (Yi-Y)
2007	0.342	0.802	-0.0058000	0.0000336	-0.0432000	0.0018662	0.0002506
2008	0.353	0.933	0.0052000	0.0000270	0.0878000	0.0077088	0.0004566
2009	0.372	0.946	0.0242000	0.0005856	0.1008000	0.0101606	0.0024394
2010	0.355	0.087	0.0072000	0.0000518	0.0248000	0.0006150	0.0001786
2011	0.317	0.675	-0.0308000	0.0009486	-0.1702000	0.0289680	0.0052422
Total	1.739	4.226	0.0000000	0.0016468	0.0000000	0.0493188	0.0085672

$$X = .3478 \quad Y = .8452$$

$$R = 0.950631555$$

$$T = 17.09811$$

Since the calculated value of 't' is more than the tabulated value (3.182) at 3 degree of freedom at 5% level of significance, which indicates for the rejection of null hypothesis, which means that there exists a significant relationship between liquidity & profitability ratio.

**Table 14: Impact of Liquidity on Profitability**

Bank/year	Liquid Assets to Total Assets Ratio	Govt. & Other Securities (Investments) Assets to Total Assets Ratio	Current Assets to Total Assets Ratio	Liquid Assets to Deposits Ratio	Investments to Deposits Ratio	Return on Total Assets Ratio
1. Axis bank						
2007	0.094	0.367	0.12	0.118	0.458	0.9
2008	0.114	0.308	0.14	0.143	0.385	0.977
2009	0.102	0.314	0.127	0.128	0.395	1.229
2010	0.084	0.310	0.106	0.108	0.396	1.392
2011	0.088	0.297	0.107	0.113	0.380	1.396
r	-0.64	-0.77	-0.78	-0.61	-0.68	
't' value	-1.878	-3.26	-3.41	-1.69	-2.18	
2. HDFC Bank						
2007	0.099	0.335	0.14	0.132	0.448	1.251
2008	0.111	0.371	0.144	0.147	0.49	1.194
2009	0.096	0.321	0.130	0.123	0.412	1.225
2010	0.135	0.263	0.161	0.179	0.35	1.326
2011	0.107	0.256	0.160	0.142	0.34	1.416
r	0.33	-1.0	1.13	0.34	-0.89	
't' value	0.65	9.19	-7.01	0.66	-7.59	
3. PNB						
2007	0.096	0.278	0.121	0.112	0.323	0.948
2008	0.095	0.271	0.117	0.113	0.324	1.029
2009	0.087	0.257	0.107	0.102	0.302	1.252
2010	0.104	0.034	0.131	0.094	0.031	1.723
2011	0.078	0.252	0.100	0.095	0.304	1.172
R	0.41	-0.95	0.44	-0.78	-0.95	
't' value	0.85	-17.39	0.96	-3.45	-15.87	
4. SBI						
2007	0.092	0.263	0.136	0.119	0.342	0.802
2008	0.094	0.263	0.155	0.126	0.353	0.933
2009	0.108	0.286	0.147	0.141	0.372	0.946
2010	0.091	0.271	0.125	0.120	0.355	0.870
2011	0.100	0.242	0.136	0.132	0.317	0.675
R	0.128	0.861	0.49	0.16	0.95	
't' value	0.225	5.78	1.12	0.282	17.18	

## 8. Findings

The findings of the tools and techniques applied are as follows

- On the basis of liquid assets to total assets ratio the highest average of liquid assets are maintained by HDFC Bank followed by SBI, Axis Bank and PNB. The consistency in liquid assets is maintained by SBI and the most variable is HDFC Bank.
- On the basis of Govt. & other securities (investments) assets to total assets ratio the highest average level of Govt. & other securities is maintained by Axis Bank, followed by HDFC bank, SBI and at last PNB. The consistency in Gov. & other securities are shown by SBI and the most variable is PNB.
- The average level of current assets to total assets was highest for HDFC followed by SBI, Axis bank and at last PNB. The most variable banking company on the basis of this ratio was Axis Bank and the most consistent is SBI.
- On the basis of liquid assets to deposits ratio the highest average is maintained by HDFC bank followed by SBI, Axis bank and PNB. The most consistency is of SBI and the most variable in this ratio is HDFC Bank.
- On the basis of Investments to deposits ratio the highest average is maintained by HDFC bank followed by Axis bank, SBI and PNB. The consistency is shown by SBI and the most flexible is PNB.
- According to return on total assets ratio the average of returns was highest for HDFC bank followed by PNB, Axis Bank and at last SBI. The consistency is shown by HDFC Bank and the most variable is PNB.
- To test the relationship between liquidity & profitability the 't' value was found insignificant in case of Axis Bank and PNB. The value was significant for Gov. & other securities to total assets ratio in case of HDFC Bank and SBI. For SBI the value was significant for Investments to Deposits ratio.

## 9. Conclusion

Effective control over autonomous flows coupled with the availability of government securities over and above the statutorily prescribed limits with banks is expected to enable the LAF framework to stabilise money market rates at the desired level and facilitate an effective monetary transmission under normal circumstances. In the presence of significant volatility emanating from autonomous flows, however, the LAF (Liquidity Adjustment Framework) framework would need to be ably supported by OMO (Open Market Operation), MSS (Market Stabilisation Scheme) and CRR (Cash Reserve Ratio) to maintain a deficit condition in the money market so as to steer call rates towards the middle of the corridor and facilitate effective monetary transmission. Given the current

stage of financial development, and largely exogenous money supply, money would continue to play an important role as one of the multiple indicators of macroeconomic activity and the movements in the monetary and credit aggregates would continue to provide inputs for policy making, while influencing public expectations on policy outcomes.

Effective cash optimisation is critical to all banking organisations, especially in a tough economic scenario. Cash is the lifeblood of organisations. Banking organisations having a proper set of liquidity management policies and procedures shall not only improve profits but reduce the risk of corporate failure also and significantly improve its chances of survival. It also provides a strategic advantage especially in difficult economic times. Effective liquidity management will enable an organisation to derive maximum benefits at minimal cost.

The liquidity in a bank is what blood is in a human body. The bank should be in a position to meet its liability holders as and when demand arises. Thus the appropriate mixture of liquid and non liquid asset is maintained. For this an appropriate strategy of liability and assets management is designed. The liquidity position of HDFC Bank, with 0.110 liquid assets to deposits ratio is better than the other bank SBI with 0.097, AXIS Bank with 0.096, and PNB with 0.092. However, the investment to deposit ratio is better in AXIS Bank (0.319) compare to HDFC Bank (0.309), SBI (0.265) and in PNB (0.218).

Effective control over autonomous flows coupled with the availability of government securities over and above the statutorily prescribed limits with banks is expected to enable the LAF framework to stabilise money market rates at the desired level and facilitate an effective monetary transmission under normal circumstances. In the presence of significant volatility emanating from autonomous flows, however, the LAF (Liquidity Adjustment Framework) framework would need to be ably supported by OMO (Open Market Operation), MSS (Market Stabilisation Scheme) and CRR (Cash Reserve Ratio) to maintain a deficit condition in the money market so as to steer call rates towards the middle of the corridor and facilitate effective monetary transmission. Given the current stage of financial development, and largely exogenous money supply, money would continue to play an important role as one of the multiple indicators of macroeconomic activity and the movements in the monetary and credit aggregates would continue to provide inputs for policy making, while influencing public expectations on policy outcomes.

As early stated, the survival of a business entity depend extensively on its ability to meet its current obligations as they fall due. This study has shown relevance degree of relationship between liquidity management and profitability in the selected banking companies listed in Nifty 50 of the National Stock Exchange of India. The finding is consistent with the findings of Sangmi and Nazir, (2010) analyzing financial performance on the basis of liquidity and profitability relationship in the commercial banks in India using some selected quoted companies in India and they concluded that a positive relationship exists between the two variables in banking companies respectively. The

finding is also similar to that of Vijaykumar (2011) study the management of corporate liquidity and profitability in indian auto mobile companies and conclude that indian auto mobile has been able to achieve high scores on the various component of liquidity management which has a positive impact on its profitability. Managers can create profits for their companies by handling correctly the cash conversion cycle and keeping each different component (accounts receivables, accounts payables and inventory) to an optimum level.

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