

## Short Term Liquidity of Foreign Banks in India

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**Abstract-** Foreign banks have been associated with India for almost two centuries now. Yet, their presence has been prominently felt after the recommendations of the Narasimham Committee on financial sector reforms ushered a competitive era that triggered the entry of new private and foreign banks into the country. Foreign banks have always adapted well to the changing financial landscape in India. They have been offering products and services that suit the Indian way of living and enterprise, providing cross-border borrowings, capital and access to global markets. Foreign banks have made considerable contribution to the banking sector over time by bringing capital, technology, efficiency and best global practices to India. The present study examines the foreign banks in India for their liquidity management capacity and liquidity performance over the post financial crisis period. The liquidity of selected Indian foreign banks has been evaluated on the basis of their short-term liquidity ratios. The foreign banks fail to meet the preferred requirements of short-term liquidity parameter for the banking sector. Nonetheless, in relative terms, Citibank shows much better liquidity management in the short-term as compared to HSBC and Standard Chartered banks.

**Keywords:** Foreign Bank, Liquidity Management, Short Term, Current Ratio, Standard Chartered Bank, Citibank, HSBC Bank, India, JEL Classification: E0, G21, M2

### I. INTRODUCTION

The story of foreign banks in India goes back to the 19th century when the colonial economy brought with it the need for modern banking services. This phase of modern commercial banking in India was associated with the East India Company. Three presidency banks were established by the Company, which acted as banker to the government. British owned and controlled, these early banks may be considered as India's first 'foreign banks'. The presidency banks were later merged in 1955 to form the State Bank of India, the nation's largest lender.

The changing scenario of the Indian banking industry and the successive milestones in the history of Indian banking such as the formation of the central bank in 1935, bank nationalization in 1969 and 1980, structural reforms in 1991, financial reforms in 1993, and technology revolution did not have a major impact on the functioning of foreign banks in India. They adapted well to the changing economy and retained their niche as service providers of the elite; bringing capital, technology and innovation from their home countries. The recommendations of the Narasimham Committee triggered entry of new private sector banks

following reforms in 1993, ushering the banking industry into a competitive era for the next two decades. The reforms brought with it an easy passage for business between India and the world with pressing initiatives towards globalization. Increased participation of foreign players in the domestic sphere created greater opportunities for foreign banks to work with their multinational clients in India.

In 2005, the new regulations of RBI aimed to integrate foreign banks in the form of locally incorporated entities by setting up a wholly owned banking subsidiary (WOS) in India. The recommendations were designed to bring the wholly owned subsidiary (WOS) of foreign banks at par with Indian domestic banks. It is feared that in the new environment, foreign banks would lose their flexibility and future support from the parent bank, apart from being affected by significant tax issues. This new and stringent roadmap is definitely not a deterrent to foreign banks' entry into India, with India granting license to nearly 14 new foreign banks after 2009.

Despite a robust regulatory framework governing foreign bank presence in the country at present, foreign banks still look to do business in India for significant reasons. The high net-income population has been growing in India by 20% alongside a 22% growth in the wealth of this segment. There has been an escalating demand for investment banking which is an important source of revenue in the form of fee incomes for foreign banks. Growth in India's international trade and its improving share in world exports and imports has also projected India as a sought after destination for banking business. Although expansion in trade may be the primary reason that foreign banks entered India but gradually they also explored the possibility of expanding into traditional banking services. Moreover, for most foreign banks, the private banking and wealth management business forms a substantial part of their revenue. Foreign banks have been known for their high-end services catering to privileged Indian clients; nevertheless, they have transformed to blend with the local landscape over the years. They have been offering products and services that suit the Indian way of living and enterprise, providing cross-border borrowings, capital and access to global markets. Foreign banks have made considerable contribution to the banking sector over time by evolving and passing best global practices to India. The erosion of wealth and negative growth in the markets of North America and Europe also necessitated that foreign banks look towards the Asian markets.

As reverberated rightly by Raghuram Rajan Committee Report on Financial Sector Reforms (2009), "Opening up to foreign banks and other financial firms and to foreign direct investment in the financial sector has many potential benefits. These include the introduction of financial innovations and sophisticated financial instruments by foreign financial firms, added depth in domestic financial markets due to foreign inflows, and more efficiency in the domestic banking sector through increased competition."

Today, India stands out in the global arena, as a phoenix rising out of the inferno of financial turmoil and crisis. The Indian banking sector has been relatively insulated and stable; trending slowly after the nineties' reforms leap and the beginning phase of the process of liberalization, privatization and globalization in the Indian economy. India poised as an emerging economic power attracted many banks to set up their presence in the country. The survival of the Indian economy in the immediate aftermath of the crisis had interesting consequences for the profit seeking foreign banks. Although foreign banks largely specialize in the provision of a menu of sophisticated financial products and facilitate the flow of foreign capital, their bigger presence in the country will enable meeting the requirements of a growing and vibrant economy, and as an impelling force driving technology.

As of 2016, there are 44 foreign banks from 23 countries operating in India either as branches or wholly owned subsidiaries. These foreign banks are functioning through 301 branches and 39 representative offices for facilitating trade between India and their parent countries. Foreign banks contribute 0.25% of the total branch network in India, but about 6% of total banking sector assets and a sizeable 29% of total profits. In this backdrop, the present study sets out to examine the foreign banks in India for their liquidity management capacity and liquidity performance over the post financial crisis period.

The study begins with the present introductory section I. The rest of the study is stretched over six more sections. Section II states the objectives of the study. Section III elaborates upon the literature reviewed for the study. Section IV describes the methodology adopted in the study, variable definition and data description, statistical method used, criterion for selection of banks, time period considered for analysis, and sources of data. Section V reports the estimated results, the analysis and interpretation. Section VI concludes the study. Limitations of the study and scope for future research are presented in the last section.

## II. OBJECTIVES OF THE STUDY

The broad objective of the study is to measure and analyze the role of Indian foreign banks in their liquidity management. The specific objectives are stated as follows:

1. To measure and analyze the short-term liquidity position of selected Indian foreign banks and foreign bank group.

2. To evaluate and compare the performance of foreign banks based on their short-term liquidity position with that of foreign bank group.
3. To assess and compare the short-term liquidity performance of the selected individual banks.

## III. LITERATURE REVIEW

Charvaka (1993) explored the mode of profits for foreign banks operating in India. The study compared deposits and profits of Indian banks, foreign banks and their bank groups for the period 1990-91 and 1991-92. The results revealed that profits earned by foreign banks do not come from genuine banking operations but from treasury operations and lending in the money market.

Kunt, Levine and Min (1998) investigated the possible outcomes of entry of foreign banks in domestic country. Multivariate logit model was used to analyze the effects of entry of foreign bank on efficiency of domestic banks for the period 1980-1995. The study was carried out for 80 countries and 7900 banks, covering almost 90% of bank assets in each country. It was found that foreign bank participation reduces the probability of crisis for the domestic country. Moreover, it lowers operating costs and profits of domestic banks. It enhances economic growth by increasing efficiency of domestic banks.

Crystal, Dages and Goldberg (2002) compared the performance of 67 foreign and domestic banks in seven Latin American countries for the period 1995 to 2000. To evaluate the soundness of the banks, two quantitative approaches were used – rating based analysis and CAMEL analysis. Results revealed that foreign banks tend to maintain greater asset liquidity and rely less on deposit financing. Also, foreign banks with established in-house banking operations show stronger growth in advances as compared to their counterparts.

Karunakaran (2006) undertook a historical review of foreign banks' operations. The study analyzed contemporary policies that have promoted foreign bank expansion in India. An overview of foreign banks' operations was presented for the period ranging from the colonial era to the post liberalization era. It was concluded that domestic banks require greater encouragement and operational freedom to be able to perform at par with the foreign banks in India.

Detragiache, Tressel and Gupta (2008) studied the effects of foreign bank penetration on financial sector development of poor countries. OLS cross-sectional regression analysis was carried out at country as well as bank level for foreign banks in 89 countries for the period 1995 to 2002. The study found that entry of foreign banks did not necessarily improve total lending, cost efficiency and welfare in the host country. At times, cream skimming may lead to higher operating costs and lower aggregate welfare in the host country due to entry of foreign banks.

Wu, Jeon and Luca (2010) examined the effects of foreign bank penetration on economic growth from the perspective

of resource allocation in the domestic country. More than 1250 banks from 35 emerging economies of Asia, Latin America and Central and Eastern Europe were analyzed. OLS and fixed effect estimators were applied for the selected banks for the period 1996 to 2003. The findings suggest that foreign banks play a positive role in improving economic growth by bringing about productive resource allocation.

Ibe (2013) investigated the impact of liquidity on profitability of Nigerian banks. Three banks were selected and were analyzed for the period 1995 to 2010. Elliot Rothenberg stock stationary test model was used to examine the association between liquidity and profitability. For determining the impact, regression analysis was used. The results revealed liquidity management to be a crucial problem for Nigerian banking industry.

Sharda, Swamy and Singh (2014) examined the impact of foreign banks on the Indian economy for the period 1999 to 2011. The study selected two foreign banks – Hong Kong and Shanghai Banking Corporation (HSBC) Bank and Bank of Commerce and Credit International (BCCI). Parameters like rural presence, technological development, contribution towards priority sector advances and financial ratios like ROA and ROE were analyzed. It was found that foreign banks mainly focused on profitability than developmental issues. Although foreign banks are given the credit of bringing modern technology into the country, they did not help in the country's economic growth.

Kirthika and Nirmala (2015) assessed the overall efficiency of foreign banks operating in India for the period 2008-09 to 2012-13. Percentage growth was used to analyze trends in financial efficiency parameters of foreign banks such as business per employee, profit per employee, ROE, ROA, capital adequacy ratio, deposits, investments and net NPAs. The results show a moderate increase in all the financial parameters. The study concluded that foreign banks in India covered a large customer base on account of their efficient working style and customer service.

Nidhi (2016) evaluated the financial performance of Deutsche Bank and Standard Chartered Bank for the period of 2010-11 to 2014-15. Ratio analysis was used to analyze and compare the financial performance of selected foreign banks in India. It was found that Deutsche Bank had better return on assets, capital adequacy ratio, non-performing assets ratio, cost to income ratio, and profit per employee. Standard Chartered Bank had exhibited better performance in terms of credit-deposit ratio, and non-interest income to interest income ratio.

Kumari (2017) investigated the financial performance of foreign banks in Sri Lanka for the period 2008 to 2014. The study analyzed three foreign banks for the purpose, namely, HSBC Bank, Standard Chartered Bank and Citibank using the CAMEL rating. The results revealed that foreign banks had performed better with respect to capital adequacy ratio,

return on assets and return on equity; but showed an average performance with respect to other variables examined.

#### IV. RESEARCH METHODOLOGY

The study analyses the liquidity position of foreign banks in India over the recent stretch of the post-reform era. The liquidity of foreign banks is evaluated on the basis of their short-term liquidity ratio.

##### A. Variable Definition and Data Description

Short-term liquidity ratio has been ascertained for determining the short-term liquidity position of foreign banks and foreign bank group. For short-term liquidity ratio, Current Ratio has been calculated by expressing Current Assets as a ratio of Current Liabilities. Here, for the purpose of the study, current assets has been computed by adding up the following asset variables – cash in hand, balance with RBI, balance with banks in India, money at call and short notice, and balance with banks outside India. Current liabilities has been arrived at by adding the following items of balance sheet of foreign banks – bills payable, inter office adjustments, interest accrued, subordinate debt, deferred tax liabilities and others (including provisions).

##### B. Statistical Method

In order to study the behavior of the short-term liquidity ratio, Mean and CAGR of the same have been estimated for the foreign banks and bank group. Student's t-test has been used to compare the liquidity performance of individual foreign banks with their bank group; as well as for comparison of liquidity performance between the selected banks. For this purpose, t-test has been carried out for the average values of short-term liquidity ratio or current ratio of selected banks and bank group.

##### C. Selection of Foreign Banks

Three foreign banks have been selected for the study on the basis of their branch expansion in India. Standard Chartered Bank with a history over 160 years, serving nearly 150 world markets and occupying a prominent presence in over 60 markets; is currently the largest foreign bank in India with 100 branch outlets spread across the country. Citibank with a history of over 200 years and spread over 19 countries marks its presence in India since 1902 offering a broad range of financial services to the benefit of Indian customers and industry. Citibank is the second largest foreign bank with 35 operational branches in India. The Hongkong and Shanghai Banking Corporation Limited (HSBC) began its operations in 1959 in India by taking over the Mercantile Bank of India. The bank has an international presence covering 66 countries and territories across the globe. The first ATM of India set up in 1987 is credited to HSBC Bank. It is the third largest foreign bank in India with 26 branch outlets operating in the country. The three foreign banks and the foreign bank group have been examined for

an understanding of their short-term liquidity management and its role in influencing the overall performance of foreign banks.

#### D. Time Period of the Study

The period of study taken to assess the liquidity performance of foreign banks is restricted to the post financial crisis period from 2008-09 to 2016-17. After the RBI released its road map in 2005 for the presence of foreign banks in India, the foreign banks were allowed to operate in India by setting up Wholly Owned Subsidiary (WOS) or converting their existing branches into a WOS. This was to be done over two phases, phase I being the period 2005-2009 and phase II was to begin after 2009. However, due to the financial market turmoil in 2008, this process got delayed; the present study therefore undertakes empirical analysis for the post financial crisis period of the economy.

#### E. Data Source

The data for the study have been obtained from different issues of RBI publications such as Statistical Tables Relating to Banks in India, and Handbook of Statistics on Indian Economy.

### V. RESULTS, ANALYSIS AND INTERPRETATION

This section has been divided into two sub-sections. In section A, estimated results for short-term liquidity management as measured by current ratio of foreign banks

and foreign bank group have been reported. The empirical results for comparative assessment of short-term liquidity management by foreign banks with respect to foreign bank group; as well as between selected foreign banks, as determined on the basis of student's t-test are reported in section B. Detail discussion of the estimated results has been covered in the respective sections.

#### A. Short-Term Liquidity Management of Foreign Banks

The short-term liquidity management of selected individual foreign banks and foreign bank group in India has been evaluated using their current ratios. It is a classic measure of firm's liquidity. Current Ratio is derived by expressing current assets as a ratio to current liabilities. Current ratio here is used to evaluate the capacity of a banking firm to meet its short term obligations. Generally, a creditor would look for high current ratio because it indicates the firm's capability to pay off the creditor. For the investors however, a high current ratio is not always a good sign. It is often suggestive that the firm is not able to utilize its current assets efficiently. Ideally, financial institutions and banking firms prefer a current ratio of 1.3:1 (ICSI, 2014).

The mean and compound annual growth rate (CAGR) has been estimated for current assets, current liabilities and current ratio of foreign banks and bank group. The analysis has been carried out for the period 2008-09 to 2016-17 and the estimated results are consolidated in Table I. The mean values and CAGR of current ratio of foreign banks have been displayed as graphs in figures 1 and 2.

TABLE I SHORT-TERM LIQUIDITY: CURRENT RATIO

(in Million)

Years	Standard Chartered Bank			Citibank			HSBC Bank			Foreign Bank Group		
	Current Assets	Current Liabilities	Current Ratio	Current Assets	Current Liabilities	Current Ratio	Current Assets	Current Liabilities	Current Ratio	Current Assets	Current Liabilities	Current Ratio
2008-09	42195	358331	0.12	160579	234068	0.69	112326	249674	0.45	469077	936301	0.50
2009-10	47806	202553	0.24	151864	154892	0.98	81540	166297	0.49	396554	658390	0.60
2010-11	68032	239839	0.28	212737	191603	1.11	82122	183280	0.45	476813	765828	0.62
2011-12	48625	309108	0.16	183370	188210	0.97	115474	223698	0.52	542985	971173	0.56
2012-13	55139	204609	0.27	190289	125863	1.51	91491	163979	0.56	559121	891267	0.63
2013-14	73920	278565	0.27	163144	217889	0.75	152669	207419	0.74	666474	1375103	0.48
2014-15	90803	201944	0.45	93451	126496	0.74	258643	165153	1.57	824402	977849	0.84
2015-16	69940	195182	0.36	98213	122355	0.80	183612	146374	1.25	798375	937105	0.85
2016-17	92530	262036	0.35	202196	166906	1.21	230283	151042	1.52	1133814	1265794	0.90
Mean	65443.33	250240.78	0.28	161760.33	169809.11	0.97	145351.11	184101.78	0.84	651957.22	975423.33	0.67
CAGR (%)	10.31	-3.84	14.71	2.92	-4.14	7.37	9.39	-6.09	16.48	11.66	3.84	7.53

Table I reveals the short-term liquidity position of the three shortlisted foreign banks – Standard Chartered Bank, Citibank and HSBC Bank, as well as that of the foreign bank group. The table reveals that Standard Chartered bank’s current assets have been increasing at a CAGR of 10%, with average current asset of over 65,000 million. Current liabilities of the bank has been largely falling with an average current liability of 2,50,000 million. The current ratio of Standard Chartered Bank has shown an increasing trend from 0.12 in 2008-09 to 0.35 in 2016-17. Although the current ratios have escalated from the earlier periods, yet it is too low to take care of firm’s short-term obligations. The current ratios have grown at a rate of almost 15%.

Current assets of Citibank have witnessed a CAGR of nearly 3% whereas that of current liabilities has been falling at the rate of 4%. There is not much difference in the averages of the two. The average current assets to current liabilities ratio for Citibank is almost 1:1. Overall, the current ratios representing short-term liquidity performance of the bank shows an increasing trend with a current ratio of 1.2:1 in 2016-17.

HSBC bank witnesses a sharp increase in its current assets with a CAGR of around 9%. Current liabilities have largely experienced falling trend with moderate fluctuations, reporting a CAGR of -6.09%. The bank’s current ratio exhibited a sharp rise accompanied by several ups and downs, a CAGR of 16% and a mean of 0.84. The current ratio for HSBC bank increased to 1.6:1 in 2014-15 and remained > 1 for the next two consecutive time periods, indicating an improving liquidity performance of the bank.

The current ratios for the foreign bank group as computed from the ratio of current assets to current liabilities have also been reported in table 1. The average current assets of the bank group stands at 6,51,957 million while their current liabilities are to the tune of 9,75,423 million. Both current assets and current liabilities have been trending upward with a CAGR of 11.7% and 3.8% respectively. The current ratios for the bank group have been increasing rapidly with minor fluctuations. It reports a CAGR of 7.5% and an average ratio of 0.7.

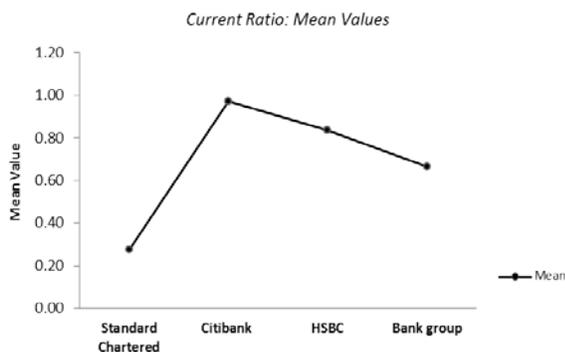


Fig. 1 Current Ratio: Mean

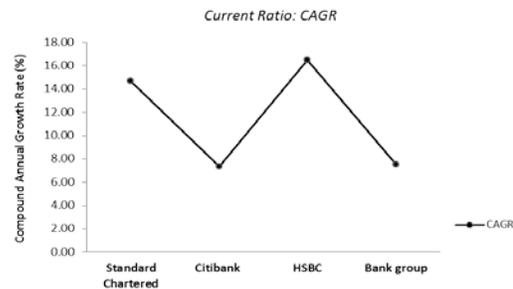


Fig. 2 Current Ratio: CAGR

Figure 1 shows the mean current ratios of foreign banks. Citibank has the highest average current ratio (0.97), followed by HSBC bank (0.84) and the lowest by Standard Chartered bank (0.28). None of these banks suffice to the preferred current ratio of 1.3:1. Low current ratios possibly mean that the foreign banks are making efficient use of their assets for lending and business growth. However, the banks are also prone to risks on account of lack of prudential norms and may be subject to short-term liquidity glitches. The foreign bank group also has a low average current ratio of 0.67:1.

Figure 2 presents the CAGR in current ratios of the three foreign banks over the analysis period. Standard Chartered bank and HSBC bank show a CAGR in their current ratio in the range of 14% -16%, while Citibank and the foreign bank group experience a CAGR of around 7%.

*B. Comparative Assessment of Short-Term Liquidity Management by Foreign Banks: Student's t-test*

Student's t-test has been used to compare the liquidity performance of individual foreign banks with that of the foreign bank group, and between the selected foreign banks for short-term. The results of the same are presented in tables III and IV. The hypotheses for short-term liquidity management of foreign banks are reported in sub-sections 1 and 2. The hypotheses for comparative assessment of liquidity management by banks have been framed on the basis of their mean values. The short-term liquidity management by foreign banks is assessed on the basis of the estimated results.

*1. Comparison of Short-Term Liquidity Performance of Foreign Banks with that of Foreign Bank Group*

The hypotheses for assessment of liquidity performance of foreign banks in comparison to bank group have been stated as follows:

- $H_0$  = There is no difference between short-term liquidity performance of individual foreign banks and foreign bank group
- $H_1$  = The short-term liquidity performance of Standard Chartered bank is not better than that of foreign bank group
- $H_2$  = The short-term liquidity performance of Citibank is better than that of foreign bank group

$H_3$  = The short-term liquidity performance of HSBC bank is better than that of foreign bank group

## 2. Comparison of Short-Term Liquidity Performance between the Selected Foreign Banks

The hypotheses for evaluation and comparison of liquidity performance of selected foreign banks with respect to each other are framed as:

$H_0$  = There is no difference in the short-term liquidity performance between the selected foreign banks

$H_1$  = The short-term liquidity performance of Standard Chartered bank is not better than that of Citibank

$H_2$  = The short-term liquidity performance of Citibank is better than that of HSBC bank

$H_3$  = The short-term liquidity performance of HSBC bank is better than that of Standard Chartered bank

### C. Testing of Hypotheses

The hypotheses have been framed considering whether the mean values are higher or lower than the hypothesized value. Hence, one-tailed test has been used for hypotheses testing considering both left-tailed test and right-tailed test. The alternative hypothesis  $H_1$  for both the analysis as in subsections 1 and 2 are left-tailed while the remaining alternative hypotheses are right-tailed. The hypotheses for the one-tailed tests are accepted or rejected at 5% level of significance. The rejection criterion for null hypothesis is specified as under in Table II.

TABLE II ONE-TAILED STUDENT'S T-TEST REJECTION CRITERION FOR NULL HYPOTHESIS

Null Hypothesis ( $H_0$ )	Alternative Hypothesis ( $H_a$ )	Critical Region Reject $H_0$ if	One-tailed Test
$\mu_x = \mu_0$	$\mu_x > \mu_0$	t-calculated > t-tabulated	Right-tailed
$\mu_x = \mu_0$	$\mu_x < \mu_0$	t-calculated < (-) t-tabulated	Left-tailed

Source: Gujarati, 1999

The results of t calculated are compared with t tabulated values to determine whether there is any significant difference between the samples (individual banks) and the population (bank group), in their short-term liquidity performance (refer Table III). Similarly, in order to determine whether there is any significant difference in the short-term liquidity performance between selected foreign banks (refer Table IV), t calculated values are compared with t tabulated values.

### D. Interpretation and Results

Table III presents the results of student's t-test for the three foreign banks – Standard Chartered Bank, Citibank and HSBC Bank with reference to the foreign bank group. This test helps to understand whether there is any significant

difference in the short-term liquidity management (as measured by the current ratio) of the three individual banks with respect to that of the bank group, over the analysis period.

TABLE III SHORT-TERM LIQUIDITY OF FOREIGN BANKS VIS-A-VIS BANK GROUP: STUDENT'S T-TEST

Testing of Hypothesis	Standard Chartered Bank	Citibank	HSBC Bank
t calculated	-11.39	3.43	1.10
t tabulated (left-tailed)	- 1.86	-	-
t tabulated (right-tailed)	-	1.86	1.86
Acceptance/ Rejection of $H_0$	Reject $H_0$	Reject $H_0$	Accept $H_0$

df (n-1) for t tabulated at 5% level of significance is 8

*Standard Chartered Bank:* The t-calculated value (-11.39) is less than t-tabulated value (-1.86) for Standard Chartered bank. Therefore,  $H_0$  is rejected, implying that there is significant difference between the short-term liquidity positions of Standard Chartered bank as compared to the foreign bank group, as represented by their current ratio. The short-term liquidity performance of Standard Chartered bank is relatively poor to the foreign bank group.

*Citibank:* In case of Citibank, t-calculated (3.43) is greater than t-tabulated (1.86). Hence,  $H_0$  is rejected, emphasizing the existence of a significant difference in the short-term liquidity position of Citibank with respect to that of the foreign bank group. Citibank shows better liquidity performance than the foreign bank group in the short-term.

*HSBC Bank:* HSBC bank has smaller t-calculated value (1.10) than t-tabulated value (1.86). Therefore,  $H_0$  is accepted, implying that there is no significant difference in the short-term liquidity positions of HSBC bank and foreign bank group in India.

TABLE IV COMPARISON OF SHORT-TERM LIQUIDITY OF SELECTED FOREIGN BANKS: STUDENT'S T-TEST

Testing of Hypothesis	Standard Chartered Bank and Citibank	Citibank and HSBC Bank	HSBC Bank and Standard Chartered Bank
t calculated	-7.25	0.75	3.48
t tabulated (left-tailed)	-1.75	-	-
t tabulated (right-tailed)	-	1.75	1.75
Acceptance/ Rejection of $H_0$	Reject $H_0$	Accept $H_0$	Reject $H_0$

df ( $n_1+n_2-2$ ) for t tabulated at 5% level of significance is 16

### E. Interpretation and Results

Table IV presents the results of student's t-test for determining the difference in short-term liquidity

performance between the three foreign banks – Standard Chartered Bank, Citibank and HSBC Bank, for the post crisis period.

*Standard Chartered Bank and Citibank:* The t-calculated value (-7.25) is less than t-tabulated value (-1.75), therefore  $H_0$  is rejected. This means that there is significant difference between the short-term liquidity management of Standard Chartered bank as compared to that of Citibank. The alternative hypothesis  $H_1$  is accepted suggesting that short-term liquidity performance of Citibank is higher than Standard Chartered bank.

*Citibank and HSBC Bank:* Here, the t-calculated (0.75) is smaller than t-tabulated (1.75). Hence,  $H_0$  is accepted against the alternative hypothesis. Hence, there is no significant difference between the short-term liquidity positions of Citibank and HSBC bank.

*HSBC Bank and Standard Chartered Bank:* The t-calculated value (3.48) is higher than t-tabulated value (1.75). Therefore,  $H_0$  is rejected and the alternative hypothesis  $H_3$  is accepted implying that there is significant difference in the short-term liquidity position of HSBC bank and Standard Chartered bank. The HSBC bank shows better short-term liquidity management than Standard Chartered bank.

## VI. CONCLUSION

The study has attempted to examine the liquidity management of selected foreign banks in India for the analysis period 2008-09 to 2016-17. The three banks – Standard Chartered Bank, Citibank and HSBC Bank were assessed for their liquidity management capacity on parameter of short-term liquidity performance. For short-term liquidity performance of the foreign banks, current ratios were estimated and analyzed on the basis of their mean and CAGR values.

All the three foreign banks under study have a current ratio < 1, which fails to match the preferred criteria of a current ratio equal to 1.3 for short-term liquidity for banks in India. Citibank has a short-term liquidity or current ratio of nearly 1:1. Hence, it is better placed in terms of its short-term liquidity management as compared to HSBC and Standard Chartered banks, with a current ratio of 0.8 and 0.3 respectively. Even the average current ratio of foreign bank group is only 0.7. The comparison of short-term liquidity management of foreign banks with their bank group reveals that although Citibank exhibits better liquidity management than foreign bank group, the latter stands better than Standard Chartered bank. HSBC bank is at par with the bank group in terms of their liquidity management capacity. Between the three individual foreign banks; Citibank ranks

first in terms of short-term liquidity management, followed by HSBC bank and Standard Chartered bank consecutively.

## VII. LIMITATIONS OF THE STUDY AND SCOPE FOR FURTHER RESEARCH

The study mainly focuses on short-term liquidity management of foreign banks in India. The time period covered for the study tracks only the post financial crisis experience. The study could be further extended for domestic banks as well, covering a larger number of banks and spread over pre and post crisis phases, involving a comparison between short-term and long-term liquidity management by foreign banks.

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