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LIQUIDITY ANALYSIS OF PUBLIC SECTOR BANKS IN INDIA

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Abstract

CAMEL model is used to rating the banks according to their performance. An analysis has been made by computingmeanrankandoverallrankofthebanksunderstudy.Here mean rank has been computed as the average of final ranks obtained by each bank on the basis of ratios under different measures of CAMEL Rating Model and then overall rank has been assigned to the banks based on their mean ranks on the rationale of assigning highest overall rank based on least meanrank.From the overall analysis, it can be concluded that State Bank of India performed best followed by PNB and BOB which also showed good performance in various measures of CAMEL Model. Central Bank of India secured overall third and last position.

Introduction

Liquidity is a measure of the ability and ease with which assets can be converted to cash. Liquid assets are those that can be converted to cash quickly if needed to meet financial obligations; examples of liquid assets generally include cash, central bank reserves, and government debt. To remain viable, a financial institution must have enough liquid assets to meet its near-term obligations, such as withdrawals by depositors.Capital and liquidity are distinct but related concepts. Each plays an essential role in understanding a bank's viability and solvency.

Liquidity of a bank implies its ability to meet current liabilities within a year from it's current assets. For a bank, current assets include cash in bank, balances with RBI and other Banks. Current liabilities include deposits in current accounts and overdue term deposit accounts.Banks do have much liquidity with them as they get regular deposit from public. In case of need, they borrow from RBI or call money markets at a higher rate of interests for

short term requirements.

Following ratios have been analysed to ascertain liquidity of the banks under study.

Liquid Assets to Total Assets

Liquid assets as a percentage of total assets is a measure of liquidity which is widely used in research. This measure of liquidity indicates the percentage of a bank's total assets in liquid form. Higher the percentage better is the liquidity andvice versa.

Formula:

Liquid Assets to Total Assets Ratio = [Liquid Assets – Total Assets] * 100

Table 1 shows the percentage of liquid assets of total assets of the selected banks for the period from 2015-16 to 2019-20.

Table 1 Liquid Assets to Total Assets Ratio of PSBs under Study (2015-16 to 2019-20)
(Ratio in Percent)

Year	SBI	PNB	CBI	BOB
2015-16	7.40	8.24	19.81	9.21
2016-17	8.54	9.29	20.57	8.69
2017-18	7.41	11.08	19.94	10.36
2018-19	8.47	10.31	19.34	11.57
2019-20	9.63	11.68	21.16	12.46
Average	8.29	10.12	20.16	10.46
S.D.	0.93	1.38	0.71	1.58
C.V. (%)	11.21	13.63	3.51	15.07

Source : Computed from Annual Reports and Accounts of the Banks for the period from 2015-16 to 2019-20.

As can be seen from Table 1, the average ratio was highest for CBI at 20.16 percent followed by BOB at 10.22 percent, SBI at 9.83 percent and lowest for PNB at 9.78 percent which indicate that CBI had huge quantity of liquid assets and other banks were far behind from it during the period under study. Standard deviation and coefficient of variation were moderate for all the public sector banks under study which indicate low fluctuations and goodconsistencyoftheliquidityratio.

Liquid Assets to Total Deposits

The liquid assets to total deposits ratio measures the liquidity available in proportion to the total deposits of a bank. This ratio is determined using following formula

Formula:

Liquid Assets to Total Deposits Ratio =[Liquid Assets/ TotalDeposits] 100

In this formula, liquid assets include

- cash in hand, balances with RBI, balances with others banks in India and outside India, money at call on short notice;whereas
- total deposits include demand deposits, savings deposits, term deposits and otherdeposits.

Liquid assets as a percentage of total deposits of the selected banks for the period 2015-16 to 2019-20 are shown in the Table 2.

Table 2 Liquid Assets to Total Deposits Ratio of the PSBs under Study (2015-16 to2019-20) (Ratio in Percent)

Year	SBI	PNB	CBI	BOB
2015-16	9.51	10.02	13.00	11.65
2016-17	11.09	11.15	14.02	12.26
2017-18	9.67	13.31	15.32	12.82
2018-19	10.31	13.50	16.67	13.61
2019-20	11.55	14.93	18.02	14.75
Average	10.43	12.58	15.41	13.02
S.D.	0.88	1.97	2.01	1.21
C.V. (%)	8.48	15.64	13.04	9.27

Source : Computed from Annual Reports and Accounts of the Banks for the period from 2015-16 to 2019-20.

As can be seen from Table 2, the average ratio was highest for CBI at 15.41 percent followed by BOB at 13.02 percent, PNB at 12.58 percent and lowest for SBI at 10.43percent which indicate that CBI had highest percent of liquid assets and other banks having lower liquid assets in comparison to total deposits during the period under study. Standard deviation and coefficient of variation were moderate for all the public sector banks for the period under study which indicate low fluctuations and good consistency of this liquidity ratio.

Liquid Assets to Demand Deposits

Liquid asset as a percentage of demand deposits is one of the most important measures of the liquidity position of a bank. This ratio measures the ability of a bank to meet the demand for withdrawal of cash from demand deposits in a particular year. It is determined by dividing liquid assets from total demand deposits. Liquid assets include cash in hand, balances with RBI, balances with banks in India and outside India, money at call on short notice. Higher this

ratio better is the liquiditypositionofthebankandviceversa.

Table 3 shows the liquid assets as a percentage of demand deposits of the selected banks for the period from 2015-16 to 2019-20.

Table 3 Liquid Assets to Demand Deposits Ratio of the PSBs under Study (2015-16 to2019-20)
(Ratio in Percent)

Year	SBI	PNB	CBI	BOB
2015-16	117.06	143.55	161.49	152.64
2016-17	140.37	166.56	180.98	145.09
2017-18	119.78	203.62	186.67	186.14
2018-19	128.96	210.03	201.70	190.15
2019-20	141.90	229.38	209.36	213.09
Average	129.61	190.63	188.04	177.42
S.D.	11.42	34.79	18.69	28.15
C.V. (%)	8.80	18.25	9.94	15.86

Source : Computed from Annual Reports and Accounts of the Banks for the period from 2015-16 to 2019-20.

As shown in Table 3, the average ratio was highest for PNB at 190.63 percent followed by CBI at 188.04 percent, BOB at 177.42 percent and lowest for SBI at129.61 percent which indicate that CBI had highest percent of liquid assets and other banks having somewhat lesser liquid assets during the period under study. Standard deviation and coefficient of variation were moderate for all the public sector banks for the period under study which indicate low fluctuations and good consistency of this liquidity ratio.

Composite Liquidity

Now, according to the average of different ratios calculated to ascertain liquidity of the public sector banks under study, ranks have been given in Table 4. This table shows the average values and ranks of theselectedbanksrelatingtodifferentmeasuresofliquidity.

Table 4 Rank of the selected Public Sector Banks under different measures of Liquidity

Particulars	Mean LA to TA (%)	Rank	Mean LA to TD (%)	Rank	Mean LA to DD (%)	Rank
SBI	8.29	4	10.43	4	129.61	4
PNB	10.12	3	12.58	3	190.63	1

CBI	20.16	1	15.41	1	188.04	2
BOB	10.46	2	13.02	2	177.42	3

Source: Tables 7.1, 7.3 and 7.5.

LA = Liquid Assets, TA = Total Assets, TD = Total Deposits, DD = Demand Deposits

Table 4 shows the ranks of the selected banks according to different measures of liquidity. It can be observed from this Table that out of three measures of liquidity, all the selected PSBs performed siginficantly different in different parameters.Table 4 showed that out of the four public sector banks under study, the mean liquid assets to total assets ratio of CBI is the highest which is computed at 20.16 percent and the bank occupies 1st rank, followed byBOB at 10.46 percent and PNB at 10.12 percent while the average liquid assets to total assets ratio in SBI is lowest (8.29 percent) and is given the fourth rank.The mean liquid assets to total deposits ratio of CBI is highest which is computed at 15.41 percent and the bank occupies 1st rank, followed by BOB at 13.02 percent and PNB at 12.58 percent while the average in SBI is lowest (10.43 percent) and is occupied the last rank.

From Table 4, it can be seen that amongst the four selected PSBs, the average liquid assets to demand deposits ratio of PNB is the highest which is computed at 190.63 percent and the bank occupies 1st rank position, followed by CBI (188.04 percent) second, BOB (177.42 percent) third rank while the average ratio in SBI is lowest (129.61 percent) and is given the fourth rank.Out of these public sector banks under study, CBI showed best performance in all three ratio parameters of liquidity analysis followed by BOB in all three parameters as well which clearly indicate that according to this analysis, both these banks showed better liquidity during the period under study. PNB and SBI remained at lower end as far as liquidity isconcerned.Now, to look at the overall rank of the banks in liquidity, for assigning final rank, firstly, all the ranks occupied by individual bank based on mean values of four measures, first rank is given to the bankwhose total score is the lowest, then the second lowest one and so on as given in Table 8.

Table 5 Composite and Final Rank of the selected PSBs based on different measures of Liquidity

Bank	Rank in Mean			Composite Rank	Final Rank
	LA to TA (%)	Mean LA to TD (%)	Mean LA to DD (%)		
SBI	4	4	4	12	3
PNB	3	3	1	7	2
CBI	1	1	2	4	1
BOB	2	2	3	7	2

Source: Table 4.

From the Table 5, on the basis of the composite score or composite rank, the Central Bank of India (CBI) has been given the 1st rank position for occupying the lowest composite score of 4. PNB and BOB equally given the 2nd rank position for the second lowest composite rank

total of 7 each. In the case of State Bank of India (SBI), the third rank is computedatcompositescore12forliquidityanalysis.

OVERALL RANKING

As stated earlier, CAMEL model is used to rating the banks according to their performance. An analysis has been made by computingmeanrankandoverallrankofthebanksunderstudy.Heremean rank has been computed as the average of final ranks obtained by each bank on the basis of ratios under different measures of CAMEL Rating Model and then overall rank has been assigned to the banks based on their mean ranks on the rationale of assigning highest overall rank based on least meanrank.

Table 6 shows mean rank and overall rank of the selected banks as a whole on the basis of different ratios of five indicators under CAMEL Model.

Table 6 Mean Rank and Overall Rank of selected Public Sector Banks in CAMEL Model

Banks	C	A	M	E	L	Mean Rank Score	Overall Rank
SBI	2	1	1	3	7	1
PNB	1	3	2	2	8	2
CBI	3	2	3	1	9	3
BOB	2	2	2	2	8	2

It is clearly evident from the Table 6 that on the basis of mean rank score of four selected Public Sector Banks taken together, the State Bank of India (SBI) is given the 1st overall rank position for the lowest mean rank score of 7. Similarly the Punjab National Bank and Oriental Bank ofCommerce(ONC)jointlygiventhe2^{nd}overallrankpositionforthesecond lowest mean rank of 8 each. Central Bank of India scored 9 and got 3rd overall rank position of CAMEL Model performance measures analysis.

Statistical Analysis: F-test

Following hypothesis has been tested for the ratio:

H_0: There is no significant difference between CAMEL Ranks of the banks understudy.

H_1: There is significant difference between CAMEL Ranks of the banks under study.

Table 7 shows one way ANOVA statistics computed for CAMEL Ranks of banks for the period from 2015-16 to 2019-20.

Table 7 One Way ANOVA for CAMEL Ranks

Source of Variation	Sum of Square	Degree of Freedom	Mean Sum of Square	F_c	F_t

Between Sample	10.0000	3	3.3333	0.8333	3.24
Within Sample	64.0000	16	4.0000		
Total	74.0000	19			

Decision: "F" test indicates that the calculated value of F = 0.8333 and tabular value of F = 3.24 at 5% level of significance. As the calculated value of F is less than table value of F ($F_c \ \square F_t$), the null hypothesis has been accepted. It means there is no significant differencebetween CAMEL ranks of the banks under study.

Conclusion

Although difference is not significant between banks according to CAMEL ranking but from the overall analysis, it can be concluded that State Bank of India performed best followed by PNB and BOB which also showed good performance in various measures of CAMEL Model. Central Bank of India secured overall third and last position.

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