Basel Norms and Differential Performance of Banks in India – A Study of Post–Liberalisation Period 1991-92 to 2019-20

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ABSTRACT

Basel 1, 2, and 3 norms have enabled improvement in the banking sector across the globe. In India, these norms along with recommendations of the Narasimham and Khan committees report have led to changes in the functions of the banks for better performance. The present study aims to make a comparative differential analysis of four types of banks in India. It is hypothesised that the performance of all the four types of banks – Public Sector Banks (PSBs), Private Sector Banks (Pvt _SBs), Foreign Banks (FBs), and All Scheduled Commercial Banks (ASCBs) have been one of statistical significance. This means that with the introduction of new norms, there is better coverage of management and risks of banks. The data for the study has been collected from the Basel website, websites of banks annual reports, RBI website, EPWRF India Time Series database, and the like.

The main result of this study is that Basel norms are implemented in letter and spirit and have led to a higher level of performance of all the variables considered for the study. Given the global conditions of the threat of Bitcoins and other informal banking systems, there is an emergent need for Basel 4 norms.

Index Terms— Basel Norms, Bitcoins, Differential Performance, Risks, Types of Banks

I. BACKGROUND, MOTIVATION, AND OBJECTIVES

The Indian banking system got into crisis because of forex exchange issues in 1991-92. This had led to the recoupling of the banking system by measures in three phases. First is the tiding over the crises by lending gold for pound sterling. Secondly, initiation of banking reforms and thirdly declaration of economic reforms in phases by the process of Liberalisation, Globalisation, and Privatisation (LPG Reforms).

During the last 29 years from 1991-92 to 2019-20, the banking reforms, in particular, were a twin fold. One, The Reserve Bank of India initiated institutional reforms, and mergers and acquisitions effectively tide over Non-Performing Assets crises. Secondly, RBI introduced Basel Norms 1, 2, and 3 during the period. At present Basel norms, 1 and 2 are being continuously implemented and monitored. Whereas Basel 3 is made effective fully from January 1, 2022.

The present study aims at examining the impact of Basel Norms 1 and 2 and their reflections on the performance of three types of banks in India – the PSBs, the Pvt_SBs & the FBs. An aggregate assessment of All Scheduled Commercial Banks in India is also attempted.

The influence of Basel norms on the performance of banks in India is of interest to bankers, policymakers, and researchers. Some lessons are to be learned from the study which would be useful in developing Basel 4 Norms to link up domestic banks with international banking.

The main objectives of the study are to look into Basel Norms on the performance of banks:
1. To study whether there are differential in performance by type of banks.
2. To study whether Basel Norms have made an overall impact on performance.

The following hypotheses have been floated for verification:
H1: Pvt_SBs have performed better than PSBs.

H2: The overall performance ASCBs is different under Basel 1 and Basel 2.

II. STATEMENT OF CONTRIBUTION / METHODS

This study aims to contribute to further strengthening the banking system in India. The differential performance of three types of banks in India – PSBs, Pvt_SBs, and FBs are likely to throw up the areas of strengths and weaknesses of the Indian banking system by highlighting levels of performance of these types of banks during the post-liberalisation period – 1991-92 to 2019-20.

The required secondary data was gathered on 54 parameters of performance of banks in India during the periods of operations of Basel 1 – 1998-99 to 2019-20 and Basel 2 during 2004-05 to 2019-20. The overall performance of the banks across all the 54 parameters has been assessed between 1991-92 and 2019-20.

The three types of statistical tests have been identified to test the significance of 54 parameters (variables) during the study period. The statistical tests are:

1. Chi-square tests were in the asymptotic significance of the trend in parameters as measured by change during the year under reference as compared to the previous year. Any increase or decrease in the performance will be marked +1 or -1 or Zero depending upon change or no change. The level of significance is kept at $p = 0.05$ for marking out significance or otherwise.

2. The second statistical test is the binomial comparison of change i.e. increase or decrease over the year. This is expected to lead to a clear assessment of whether $p = \frac{1}{2}$ or $p = > $ or $< \frac{1}{2}$ as an alternate hypothesis. This is a two-tailed test and the p level is fixed at 0.05.

3. The third test that is considered is the runs test wherein the null hypothesis is that the performance parameter acquires values at random. The alternate hypothesis is that performance parameters acquire values, not at random. The acceptance of the alternate hypothesis indicates the effect of the performance. This test is applied to all aggregate figures of performance parameters which will enable us to look at each aggregate figure as an aggregate random variable. This aggregate random variable which is a performance parameter exhibits systematicity in the efforts leading to definitive results. The implementation of Basel norms is one such effort along with the institution's efforts by the people and the system.

The time-series data are collected from secondary sources. The secondary sources of data are:
a. Website of RBI [1]
b. Compiled data EPWRF India time series [2]
c. Banks' websites and
d. Basel website [3]

The duration of data refers to is between 1991-92 and 2019-20. The duration of Basel 1 norms is between 1998-99 and 2019-20. The duration of Basel 2 norms is between 2004-05 and 2019-20. The parameters considered for the study are 1 – 54 variables. The aggregate data for the type of banks are collected on all these parameters.

III. RESULTS AND DISCUSSION

Basel 1

The analysis now refers to the results of the Basel 1 period from 1998-99 to 2019-20. The results of Chi-square analysis show that Public Sector Banks have significantly delivered advances (Chi-square 6.545, p=0.011) and acquired deposits (4.54, 0.033). Along with advances and deposits, the other liabilities and provisions have increased (5.45, 0.033), the total liabilities of PSBs further increased significantly (5.45, 0.033). Given the increases in advances, deposits, and also liabilities, the PSBs total income (6.545, 0.011), interest expanded (9.909, 0.007). Total expenses (4.545, 0.033) all increased at a high level of significance. Net Interest Income (8.909, 0.003) increased along with standard assets (8.909, 0.003) at an extremely high level of significance. Public Sector Banks total advances (11.636, 0.001) at an extremely high level of significance. Under Non-Performing Assets, Gross advances (8.909, 0.003), assets (4.545, p=0.033), and net advances (8.9090, 0.003) are statistically significant to reckon with this mean along with the acquisition of advances, the NPA advances and NPA assets are also increasing beyond limits. The Net Non-Performing Assets to Net Advances

ratio (9.909, 0.007), Bank credit (4.545, 0.033), bank deposits (6.545, 0.011) all have grown. The total number of officers in the PSBs had recruitment at a high level of significance (18.182, 0.000). The role of PSBs in agriculture (4.545, 0.033) and direct finance show the best role being played by PSBs. The total bank credit (4.545, 0.033) has shown high growth.

The Pvt_SBs advances (11.636, 0.001) show a high level of significance with that of Cash and balance with RBI (4.545, 0.033). The Pvt_SBs' total assets and deposits show the same level of significance with Chi-square 11.636, p=0.001 respectively. The other liabilities and provisions, total liabilities, and interest earned all are moving up the ladder of growth. This corroborates with the total income (8.9090, 0.003), interest expenses (8.909, 0.003) and Operating Expenses (6.545, 0.011) of Pvt_SBs. The total expenses (8.909, 0.003), operating profits (4.545, 0.033) and net profits (6.545, 0.011) show significance. The Net Interest Income and standard assets show the same level of significance with Chi-square 8.909, p=0.003 each respectively. The standard assets (8.909, 0.003) and doubtful assets of Pvt_SBs are also increasing at a high level of significance Chi-square 4.545, p=0.033. The total advances (11.636, 0.001), assets (6.545, 0.011), gross advances (6.545, 0.011), and net advances (19.727, 0.000) all show varying level of significance. The Other Scheduled Commercial Banks Credit (6.545, 0.011), and deposits (11.636, 0.001), had increased significantly. The Other Scheduled Commercial Banks (Pvt_SBs) opened up offices (18.182, 0.000) and recruited officers (14.727, 0.000) for expanding operations. The total bank credit of Pvt_SBs increased because of higher transactions with Chi-square 8.9090, p=0.003.

The FBs had an increased fixed asset (19.182, 0.000), Capital (4.545, 0.033), Reserves and Surpluses (4.545, 0.033) and deposits (8.273, 0.016) during the study period. The total expenses of (16.455, 0.000) FBs and standard assets (6.545, 0.011) increased expenses weighing more than standard assets. The gross advances (11.545, 0.003) and net advances (4.545, 0.033) of FBs moved up with gross advances moving up at a higher rate than that of the net advances. The ratio of net NPAs to Net advances (11.545, 0.003) and total credit (9.909, 0.007) increased beyond expectations. The CD ratio of FBs had a value at Chi-square 10.182, p=0.006. The Credit Deposit Ratios have shown significance during Basel 1 period. The FBs have recruited more bottom-line employees (11.545, 0.003) and subordinates (12.636, 0.002). The direct finance (8.273, 0.016) of FBs has grown faster and the indirect finance has not grown as expected (not significant). The total bank credit of FBs has shown the best improvement with Chi-square 11.545, p=0.003.

The ASCBs which include PSBs, Pvt_SBs, FBs, and Regional Rural Banks in the Indian Banking system, all the parameters show a high level of statistical significance at varying levels. The causes of concern are Substandard assets, Money at call and short notice, Gross NPAs, Net NPAs to net advances ratio, CD ratio, total bank employees, other credit, industry credit, and professional and other services and personal loans. These are the areas where PSBs should concentrate in the coming years to further improve. The overall working of the banking sector is satisfactory with clear differences in PSBs as against Pvt_SBs and the Pvt_SBs as against FBs. The trend of growth of Pvt_SBs during the Basel 1 period can be rated as the best in terms of business transactions of credit, advances, controlling expenses, and managing the recruitment of officers. Some pruning is necessary for clerks and subordinates in PSBs. The bottom heaviness of PSBs can be removed by making the organization lean in the PSBs.

The binomial tests and run tests give out strong similar asymptotic results indicating that the Pvt_SBs and FBs are doing better than the PSBs.

* The values given parenthesis are Chi-Square values and p values.

Basel 2

The Basel 2 norms were introduced in the Indian Banking System from 2004-05 onwards. The study period of 15 years is enough to set a trend and highlight those parameters which are significant. This will enable us to decide on the level of success in enabling the improvement of the system. The two important risks covered in Basel II are market risk and credit risk. In addition to this, operational risk is covered along with rigorous reviews and maintenance of market discipline in the system by well-defined parameters such as Capital to Risk-Weighted Assets Ratio (CRAR). The PSBs during Basel II show underperformance while the advances (6.250, 0.012), Reserves and Surpluses (4.000, 0.046), and Deposits (4.000, 0.046) increased significantly. The investments, Fixed Assets, Other Assets, Cash balance with RBI, money at call and short notice, capital did not improve as much it should have been. The PSBs Reserves and Surpluses and deposits showed significance at the

same level with Chi-square 4.000, p=0.046 respectively.

The liabilities of PSBs, interest earned and banks total income increased significantly with Chi-square 4.000, p=0.046 each respectively. The total income (4.000, 0.046), operating expenses (4.000, 0.046), total expenses (4.000, 0.046) and operating profit (4.000, 0.046) were on the increase. The Net interest income, standard assets had improved well with Chi-square 9.000, p=0.003 and Chi-square 6.250, p=0.012 respectively. This shows that there were some acquisitions of income and assets building. The gross advances and net advances all together increase with Chi-square 6.250, p=0.012 each respectively. The way PSBs moved in terms of managing heavy expenses and advances had a bearing on the overall banking institutions. One positive aspect of the operation of Basel 2 is that the NPAs are under control. There was an expansion of PSBs officers to reach under customers which are indicated by recruiting more officers and fewer clerks and subordinates during this period. The PSBs have done reasonably well in agriculture credit (6.250, 0.012), Direct finance (4.000, 0.046) and on credit to transport operators (4.000, 0.046). The credit to trade (4.000, 0.046) was also at the same level as that of credit to transport operators.

The Pvt_SBs advances during this period of Basel II along with the building of total assets were statistically significant with Chi-square 6.250, p=0.012 each respectively. The Pvt_SBs capital and the total liabilities along with interest earned, other income, interest expanded, operating expenses, and total expenses were all statistically significant with Chi-square 4.000, p=0.046 each respectively. The operating profits, Net profits, Net interest income are statistically highly significant with Chi-square 6.250, p=0.012 each respectively. The standard assets of Pvt_SBs had Chi-square 4.000, p=0.046. This speaks of the efficiency of Pvt_SBs in holding standard assets and keeping substandard assets, doubtful assets, and loss assets to the minimum. While the gross NPAs were minimum, the NPA advances and assets show significance with Chi-square 6.250 & 4.000 with p= 0.012 and 0.046 respectively. The NPA net advances of Pvt_SBs bear high significance with Chi-square 12.873, p=0.002. The entire Pvt_SBs have shown higher levels of efficiency in advances, deposits, income earned acquisitions of, and keeping the other parameters to the barest minimum. The Pvt_SBs are acquiring a higher degree of competitiveness concerning PSBs. The Other Scheduled Commercial Banks are generally considered as Private Sector Banks wherein the direct finance (9.000, 0.003), transport operators credit (4.000 with 0.046), trade credit (4.000 with 0.046), and total credit (4.000 with 0.046) each respectively.

The FBs have strong fixed assets with deposits acquired Chi-square 12.500 with p=0.002 and Chi-square 6.125 with p=0.047, total expenses Chi-square 9.875 with p=0.007. The standard assets of FBs stunned out with Chi-square 4.000, p=0.046 followed by strong gross advances with Chi-square 6.125 with p=0.047. The NPA advances and assets are not statistically significant for FBs. The NNPAs to Net Advances ratio, the total credit, and CD Ratio show moderate significance (7.625, 0.022); (6.125 with 0.047) and (6.500 with 0.039) respectively. The overall total bank credit has made Foreign Banks better with Chi-square 9.875 with p=0.007. The ASCBs show strong significant values in investments, fixed assets, cash and balance with RBI, money at call and short notice, capital, borrowings, other liabilities, augmentation of income, interest expanded, acquiring operating profits and overall profits. The substandard assets have acquired a high value (4.000 with 0.046). The standard assets, net NPAs and GNPAs to GA ratio show a significance (4.000 with 0.046), (4.000 with 0.046), and (6.125, 0.047) respectively. The ASCBs have recruited more number officers and employees with Chi-square 12.250 with p=0.000 and Chi-square 6.250 with p=0.012. The indirect finance credit to agriculture, transport operators credit finance show that banks have performed well with varying levels of significance during the Basel II period. The direct finance in agriculture by ASCBs is worth noting with Chi-square 9.875 with p=0.007. The overall credit to agriculture, indirect finance to agriculture, and also industry credit does not show significance. The area of personal loan credit which has been captured by Private Sector Banks is yet to be captured by Public Sector Banks to deliver an acknowledged level of performance. The performance of banks in Basel II is one of the high levels of efficiency exhibited by Private Sector Banks by capturing innovative areas in credit – agriculture, transport operators credit, and personal loans. The Private Sector Banks need to restructure their target for they have exhibited below-average level performance.

* The values given parentheses are Chi-Square values and p values.

CONCLUSION

The overall analysis is clear. The fact that Private Sector Banks are performing exemplary well in comparison

with Public Sector Banks during Basel 1 and Basel 2 is established. The Public Sector Banks have expanded their offices and made recruitment of officers and clerks during Basel 1 and Basel 2 period. However, they are yet to fine-tune their system to put up a better performance despite an army of officers. The Foreign Banks had a limited role to play and have done well in strengthening standard assets and covering their defined area in advances, credit, and borrowings. The Basel 1 and Basel 2 norms have affected all three types of banks at different levels. However, a new plan needs to be envisaged for Public Sector Banks to tone up and compete with Private Sector Banks. The economies of Private Sector Banking need to be the economies of Public Sector Banking keeping Private Bank's role constant. The informal banking system through Bitcoins is going to create a pandemic in the coming years.

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