CHAPTER -V

Derivatives of Financial Viability of RRB: - An Application of Principal Component Analysis

5.1 Introduction:

The term ‘viability’ is derived from the French word ‘vie’, which means ‘capable of living’\(^{193}\). In general the word viability means the "capacity for survival" and more specifically it is used to mean “a capacity for living, developing, or germinating under favorable conditions”.\(^{194}\) However, it signifies different meaning depending on the users’ point of view. For example, from social point of view the term refers the capability of a project to become practical and useful; to the botanists, the term means ‘The possibility of germination’. From economic standpoint, the term is used to mean the capacity of normal growth and development of an enterprise or organisation.\(^{195}\)

In available literature\(^{196}\) on viability of financial institutions like banks, the term financial viability has been used, synonymously with operational efficiency, sustainability, self sufficiency, practicability, adaptability with the changing environment, capacity to generate profit in the current period as well as in the long run, and so on.

The two terms financial viability or simply viability and profitability are inter related. One can not think of viability of a project if it is not profitable. Similarly, if it is non-viable, then it can not be profitable. However, in broader sense of the term, it is possible for a project to be financially viable in spite of its losses in the current period and, at the same time; it is also possible that a project is non-viable even though it is currently profitable. This is because of the fact that

\(^{193}\)http://www.elook.org/dictionary/viability.html
\(^{194}\)http://www.answer.com/library/wikipedia/dictionary/viability.html

\(^{201}\)6) The follow up committee on Branch Profitability, NIBM, Pune, 1982.
financial viability of a project denotes its long run ability to meet its total cost out of its own resources and at the same time generate reserve or surplus for capital build up. It represents the ability of the project to function and grow as an independent unit. It not only means the earning of profit but a sustained profitability with the ability to function and grow as an independent unit. Thus, viability implies profitability with self sufficiency and sustained growth over a period of time.

5.2. Financial Viability of RRBs – Needs and Implications:

Financial viability of rural financial institutions like Regional Rural Banks is a crucial factor determining whether the RRBs will be capable of rendering services as a sound and healthy financial institution and as per the banking needs and aspirations of the rural clienteles. Further, it is of prime importance in the changing face of the rural credit delivery system, where commercial motives are paramount over the social welfare objectives in resonance with the liberalisation and global orientation of the Indian economy.

Since their inception in the 1975, the RRBs have been seen as a vital means of dispensing credit to lower-income groups in rural areas and have traditionally been assigned the primary responsibility of funding the government sponsored lending schemes intended for poor rural households. Their prime objective being social and economic development of rural areas, profit making was not given prime importance before the publication of the Report of Committee on Financial System in 1991. By virtue of their vintage social banking episodes towards rural clienteles, the RRBs have also largely escaped serious evaluation of their performance in commercial or financial terms, till 1991. Until then, it was believed that the question of viability of the RRBs could not be the same as that in other business ventures.

During the expansionary phase of RRBs, in late seventies and in the eighties, more emphasis was laid on outreach and not on commercial viability of the RRBs, what the mainstream academia and policy makers claim to be the case to day. As a result, between 1980 and 1987, while the number of RRBs increased a little more than two-fold, the number of branches of RRBs increased by more than

four-fold. With this rapid expansion in outreach, the RRBs had become the principal agency to finance the government sponsored rural development and anti-poverty programmes like IRDP. Providing credit to the priority sector, less developed and more difficult regions, and weaker sections has weakened financial viability of rural credit institutions. Competitive and populist politics and emphasis on achieving the targets of credit disbursement under government-sponsored programmes have worsened the quality of their loan assets. As a result, these banks were suffering from making enormous losses over the years and they were surviving on the strong support extended by the Central Government. These losses were accentuated by politically motivated decision-making, emphasis on subsidised lending and an overall welfare-orientation expected of such institutions (Sinha et al, 2003).

Going through the reviewed literature, we see that during the expansionary phase of RRBs, especially in the later part of 1980’s, more focus was on outreach and the notion of viability was much more nuanced than what it denotes under the neo-liberal reform era. It is true that the commercial principles of banking were put under stress during the earlier phase and needed corrective steps. Indeed many of the policy recommendations of that time were geared to improve recovery and reduce losses incurred by these banks. However, it was generally held that these improvements could be done (and had to be done) within the parameters set for the RRBs, with overall vision of rural banking for rural economic development and upliftment of the rural poor.

With the onset of the neo-liberal economic reforms and the liberalization of the financial system, once again, the RRBs came under the scanner. With the implementation of the National Industrial Tribunal Award (NITA) in 1992, bringing parity in wage structure of RRBs with that of commercial banks, the losses went up sharply. This pay parity negated the low cost structure of RRBs and more losses were accumulated and, the RRBs were being thought of as the non-viable financial institutions. In June 1993, out of 196 RRBs 172 were recorded

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198 The number of RRBs in 1980 in the country as a whole was 85 with 3279 branches spread over 144 districts which increased to 196, 13353 and 363 respectively in 1987.
unprofitable with an aggregate loan recovery performance of 40.8 percent. The low equity base of these banks didn't cover for the loan losses of most RRBs and as a result, in the case of a few RRBs, besides capital, there had also been an erosion of public deposits.

With the introduction of financial sector reform measures, it has been felt by the bankers, policy makers and academia that the RRBs could not survive as credit institutions if they remain non-viable for a long time. This is because, a catalytic role in rural economic development, through adequate and timely supply of rural credit, can not be expected from a financial institution that suffers from operational and financial inefficiency or which is financially nonviable. It has also been realised that the objective of serving the weaker sections effectively could only be achieved by self-sustaining credit institutions.

5.2.1. Committee Recommendations:

The financial viability of the RRBs has been a matter of concern since the 1980s, just five years after their existence, because of their huge losses. These losses had resulted to capital erosion and necessitated increasing dependence on external sources of refinancing. In 1981, the Committee to Review Arrangements for Institutional Credit for Agriculture and Rural Development (CRAFICARD) addressed the issue of financial viability of the RRBs. It recommended that 'the loss incurred by a RRB should be made good annually by the shareholders in the same proportion of their shareholdings'. Though this recommendation was not accepted, financial support was provided by the shareholders in the proportion of their shareholdings.

Subsequently, a number of committees have come out with different suggestions to address the issues on financial non-viability of RRBs. For instance, the Working Group headed by S.M. Kelkar (1986) observed that the Viability of the RRBs was strained as most of them were not profitable. The Group recommended that small and uneconomic RRBs should be merged in the interest of their economic viability.

202 Statistics on Regional Rural Banks As on 31st March, 1994, NABARD Mumbai, 1994
203 The paid up capital base of the RRBs was Rs. 25 Lakhs only.
In the year 1989, for the first time, the conceptualization of the entire structure of Regional Rural Banks was challenged by the Agricultural Credit Review Committee (Khusro Committee). The committee opined that the weaknesses of RRBs are endemic to the system and non-viability is built into it. Further, it argued that these banks have no justifiable cause for continuance and recommended their mergers with sponsor banks as the only option to make these institutions viable. But at that time such a policy move was politically unthinkable, so the Reserve Bank and the Government of India quite prudently pushed the Khusro Committee report under the carpet without any public debate.

However, under the changed policy environment following implementation of financial sector reform measures, financial viability of RRBs has been given prime importance. In doing so, the basic objective of RRBs as specialized institutions to provide easy credit facilities to the rural poor has also been annulled.

In order to impart viability to the RRBs, the Narasimham Committee suggested that

- The RRBs should be permitted to engage in all types of banking business;
- They should not be forced to restrict their operations to the target groups.
- Interest rates be deregulated,
- The priority sector should be redefined to comprise the small and marginal farmers, the tiny sector of the industry, small business, rural artisans and other weaker sectors and the credit targets for this redefined sector should be fixed at 40% of the aggregate credit.
- Capital adequacy norms be changed to increase the competitive strength of the Indian banks.
- Banking policy be guided more by the market than by the regulations set by the public authority.
- The widely accepted prudential norms of income recognition, asset classification and provisioning to the banking industry be applied to the RRBs.
- The SLR should be reduced to 25% over a period of 5 years in a phased manner.

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205 Report of the 'Agricultural Credit Review Committee' (Khusro Committee), 1989, GOI
• The CRR should be reduced from its present high level in a phased manner and the interest paid to the banks on their CRR and SLR should be increased.

• The interest rate on government securities may also be brought in line with market determined rates and concessional rates should be phased out.

• Balance sheets should be made transparent and full disclosure as recommended by the international Accounting Standards Committee.

These recommendations marked a major turning point in the functioning of RRBs. In the ensuing years, reforms of the RRBs largely followed the same set of policies and the same set of standards as that of the commercial banks to calibrate their performance, irrespective of the fact that their very role in the society required a special status and a different set of policies. Not surprisingly then, the RRBs have started aping the commercial banks as can be seen from their following activities –

• RRB branches are relocated to more promising areas;

• While banks are hesitant to increase their loan portfolios, investments in government securities and PSU bonds and debentures increased;

• Credit is extended mainly under non-priority sector and as a result, the proportion of priority sector declined despite the dilution of the priority sector definition in several ways;

• Interest rates on lending are deregulated which resulted in high interest rates charged by the RRBs;

• Credit to deposit ratio has become less than half of the pre-reform levels indicating increased net transfer of resources from the rural poor to the urban rich; and

• The small borrowers, the principal clients of the RRBs are overwhelmingly sidelined.

The Committee on Restructuring of RRBs, 1994 (Bhandari Committee) identified 49 RRBs for comprehensive restructuring. It recommended greater devolution of decision-making powers to the Boards of RRBs in the matters of business development and staff matters. As a part of comprehensive restructuring programme, recapitalisation of the RRBs was initiated in the year 1994-95, a process which continued till 1999-2000 and covered 187 RRBs with
aggregate financial support of Rs.2188.44 crore from the stakeholders. Simultaneously, prudential norms on income-recognition, asset classification and provisioning for loan-losses following customary banking benchmarks were introduced. From 1996-97, there has been a tendency to allow greater role and larger operational responsibilities to sponsor banks in the management of RRBs.

The option of liquidation again was unsettled by the Committee on Revamping of RRBs, 1996 (Basu Committee). The Expert Group on RRBs in 1997 (Thingalaya Committee) held that very weak RRBs should be viewed separately and possibility of their liquidation be recognised. They might be merged with neighbouring RRBs. The Expert Committee on Rural Credit, 2001 (Vyas Committee) was of the view that the sponsor bank should ensure necessary autonomy for RRBs in their credit and other portfolio management system. Subsequently, another committee under the Chairmanship of Chalapathy Rao in 2003 recommended that the entire system of RRBs may be consolidated while retaining the advantages of regional character of these institutions. As part of the process, some sponsor banks may be eased out. The sponsoring institutions may include other approved financial institutions as well, in addition to commercial banks. The Group of CMDs of Select Public Sector Banks, 2004 (Purwar Committee) recommended the amalgamation of RRBs on regional basis into six commercial banks - one each for the Northern, Southern, Eastern, Western, Central and North-Eastern Regions.

Thus one finds that a host of options, starting with vertical merger (with sponsor banks), horizontal merger (amongst RRBs operating in a particular region), restructuring, and even to liquidation of non-viable RRBs, suggested by different committees to redress the issues on viability.

More recently, a committee under the Chairmanship of A.V Sardesai revisited the issue of restructuring the RRBs (Sardesai Committee, 2005). The Sardesai committee held that ‘to improve the operational viability of RRBs and take advantage of the economies of scale, the route of merger/amalgamation of RRBs may be considered, taking into account the views of the various stakeholders’. The Committee expressed the view that merging a RRB with its sponsor bank would go against the very spirit of setting up of RRBs as the unique

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206. The infusion of fresh capital was in the same proportion as the issued capital by the different stakeholders, so that the ownership structure remains unchanged. The issued capital of a RRB is shared by the Government of India, the concerned State Government and the Sponsor Banks in the proportion of 50%, 15% and 35% respectively.
entities and for providing credit primarily to weaker sections. Having discussed various options for restructuring, the Committee opined that ‘a change in sponsor banks may, in some cases help in improving the performance of RRBs. A change in sponsorship may, inter alia; improve the competitiveness, work culture, management and efficiency of the concerned RRBs’.

With the recommendations of the Working Group (Chalapati Rao Committee) and more particularly, after the publication of the report of the ‘Internal Working Group on Regional Rural Banks’ in 2005, (headed by Shri A.V. Sardesai), re-organisation of RRBs through amalgamation and merger is being thought of as a means to viability.

However, the matter of fact is that the viability of RRBs depends not on the size alone; but on the factors like:

- i) Level of business,
- ii) Quality of loan assets, 
- iii) Recovery strategy, 
- iv) Internal control system, 
- v) Quality of staff and more importantly their morale and motivation, 
- vi) Quality of leadership provided by Chairman and the support from Sponsor Banks.

As these factors differ from bank to bank, as well as on a number of regional factors, such as agro-climatic condition of the operational region, infrastructural facilities available to the entrepreneurs, etc, no uniform solution or generalisation is possible to make RRBs viable.

### 5.3. Tools used for Viability Analysis of banks:

The measurement of viability of a bank is rather difficult task, as there is no uniform yardstick or parameter with regard to the measurement of viability of service industry like banks. Again, there is no absolute measure to judge the viability of a financial institution like RRB. Therefore, different scholars have used different relative or comparative measures to judge the viability of a bank. Some of the important parameters used by different scholars to measures of viability of banks are as follows:

The National Institute of Bank Management (NIBM) has used the following ratios as indicators of viability:

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208 The follow up Committee on Branch Profitability, NIBM, Pune, 1982
a) Interest Spread = \[(\text{Net interest income from business assets other than NPAs}) /\text{Business assets including NPAs})\times100\] – \[\text{(Interest Cost/ Business liability)} \times100\]

b) Burden efficiency Ratio = \[(\text{Burden / Total Business)} \times100\]
= \[(\text{Non int. expenses- Non int. income}) / \text{Total Business)} \times100\]
= \[(\text{Non int. Expenses / Total business}) \times100 - (\text{Non int. income / Total business}) \times100\]

c) Non interest revenue efficiency ratio = \[(\text{non-interest Revenue/ non-interest cost}) \times100\]

d) Total business turn over ratio = \[(\text{Total business/ total Burden}) \times100\]

e) Total business Growth ratio = \[\text{[(Current Period Business)} / \text{(Last period Business)} \times100\] - 1

f) Non interest income growth ratio = \[(\text{Current period non-interest income / Last period non- interest income}) \times100\] - 1

g) Credit Deployment Ratio = \[(\text{Total credit/ business Liabilities}) \times100\]

h) Priority sector Adv. Ratio = \[(\text{Priority sector Advances)} / \text{(Total Advances)} \times100\]

i) Non Performing Asset Ratio = \[(\text{Non performing Advances})/(\text{Total Advances}) \times100\]

j) Cash Leverage Ratio = \[(\text{Cash / Business Liabilities}) \times100\]

k) Per employee business turn over ratio = \[(\text{Total business})/(\text{Total no. of employees})\].

l) Per employee cost ratio = \[(\text{Total cost or expenses})/(\text{Total no. of employees})\].

m) Per employee income ratio = \[(\text{Total income})/ \text{(Total no. of employees)}\].

n) Efficiency Ratio = \[(\text{Profitability / Spread}) \times100\], where,
\[\text{Profitability} = \[(\text{Spread–Operating expenses})/(\text{Average working fund})\] \times100\]

Sathya Swarup (2002)\textsuperscript{209} used the following parameters as indicators of viability while assessing the viability of commercial banks in India:

a) Credit Deposit Ratio, f) Investment Deposit Ratio
b) Long term Deposit to total deposit g) Interest income to total income ratio
c) Non performing assets ratio h) Interest income to total asset ratio
d) Non interest income to total asset ratio i) Interest spread ratio
e) Wage bill/ total expenses ratio j) Cost of deposit and cost of borrowings

A.R Patel (2003)\textsuperscript{210}, while analyzing profitability and viability of Indian commercial banks in the globalized economy, gave thrust mainly, on the NPA and recovery percentage as the parameters determining viability. However, the other parameters used by him for determining the viability of commercial banks are: credit deposit ratio, staff productivity, interest margin or spread, burden cost of funds etc.

5.4. Viability of the RRB in South Assam (CGB) – A critical assessment:

As our basic model (1.8) clearly describes that efficient management is an important determinant of profitability and viability of RRB, the present chapter deals with the issues related to the viability in the RRB in South Assam, i.e., the Cachar Gramin Bank, a component of presently formed Assam Gramin Vikash Bank from the managerial perspective.

5.4.1. The Hypothesis:

The hypothesis undertaken for the purpose is:

\[ H_0^4: \text{'The operational efficiency of the RRB under consideration has not improved despite the implementation of banking sector reform measures'}. \]

[This hypothesis is attuned to our general hypothesis \( H_3 \) in our model]

5.4.2. Variables considered in the study:

For the purpose of analyzing viability from managerial point of view, we have considered following 11 widely accepted variables, encompassing the aspects of normal banking business, productivity, income and expenditure. The efficiency parameters along with their definitions and significance for achieving viability of the bank are presented in Table-5.1, hereafter.

5.4.3. Statistical tools used:

The changes in respect of these 11 variables for the bank under study, over the pre and post reform periods, were examined by comparing their means, coefficients of variation and trends following standard statistical tools and techniques. Further, ‘Paired Sample t-test’ was used to confirm whether the adopted banking reform measures, have affected the efficiency parameters to improve the viability status of the bank or not. Besides these, an endeavour has

\textsuperscript{210} A.R Patel (2003) Profitability and Viability of Indian commercial banks in the globalised economy, SBI Monthly Review, May 2003
been made to identify the factors determining the viability of RRB under study and find out relative significance of the factors in affecting the viability. For the purpose, the application of Principal Component Analysis has been applied.

**Table-5.1**

**Variables considered for viability analysis of RRB under study**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Variables</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Business efficiency</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Total business Growth ratio (TBGR)</td>
<td>([(\text{Current Period Business} / \text{Last period Business}) - 1]) x100</td>
</tr>
<tr>
<td>2</td>
<td>Business efficiency Ratio (BER)</td>
<td>[\frac{\text{Net profit earned by the RRB during the year}}{\text{Volume of business of that year}}]</td>
</tr>
<tr>
<td><strong>B. Employee efficiency</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Number of business accounts per employee (NBAPE)</td>
<td>[\frac{\text{(Total number of deposits accounts) } + \text{(number of loans and advance accounts outstanding with the RRB during the year)}}{\text{(Total number of employees of the RRB)}}]</td>
</tr>
<tr>
<td>4</td>
<td>Per employee business turnover ratio. (PEBTR)</td>
<td>[\frac{\text{(Total volume of deposits mobilized) } + \text{(volume of loans and advances disbursed by the RRB during the year)}}{\text{(Total number of employees of the RRB)}}]</td>
</tr>
<tr>
<td><strong>C. Branch level efficiency</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Number of business accounts per branch (NBAPB)</td>
<td>[\frac{\text{(Total number of deposits accounts) } + \text{(number of loans and advance accounts outstanding with the RRB during the year)}}{\text{(Total number of branches of the RRB)}}]</td>
</tr>
<tr>
<td>6</td>
<td>Per branch business turnover Ratio (PBBTR)</td>
<td>[\frac{\text{(Total volume of deposits mobilized) } + \text{(volume of loans and advances disbursed by the RRB during the year)}}{\text{(total number of branches of the RRB)}}]</td>
</tr>
<tr>
<td><strong>D. Income efficiency</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Income efficiency ratio (IER)</td>
<td>[\frac{\text{Total income of the RRB during the year}}{\text{Total expenditure incurred by it during the year}}]</td>
</tr>
<tr>
<td>8</td>
<td>Non-interest income to interest income ratio (NIITIIR)</td>
<td>[\frac{\text{Amount of non-interest income}}{\text{Total interest income}}]</td>
</tr>
<tr>
<td><strong>E. Expenditure efficiency</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Business cost efficiency ratio (BCER)</td>
<td>[\frac{\text{Total expenditure incurred by the RRB during the year}}{\text{Volume of business during the year}}]</td>
</tr>
<tr>
<td>10</td>
<td>Employee cost efficiency ratio (ECER)</td>
<td>[\frac{\text{Total expenses on salaries and allowances of the employees during the year}}{\text{Volume of business of the year}}]</td>
</tr>
<tr>
<td>11</td>
<td>Operating cost efficiency ratio (OCER)</td>
<td>[\frac{\text{Total operational expenses of the RRB during the year}}{\text{Total volume of business of the RRB during the year}}]</td>
</tr>
</tbody>
</table>
5.5. Results and interpretations:
The results of statistical analysis on these parameters and their implications are interpreted hereafter in the following paragraphs:

5.5.1. Total business growth ratio (TBGR):

Total business growth ratio is an important index of measuring the viability of a bank. For viability of a bank, the business growth ratio should be positive and increasing over the years also. The growth rate of business also represents the competitive strength of the organisation in the market. A lower business growth compared to that in the previous year means that the enterprise is lagging behind compared to the other competitors in the market and gives signal to find out the ways and means to improve its strength in the market. The results of statistical analysis (Table-5.2) show that:

a) There has been a decline in the average business growth rate in the post reform period (mean =26.763) as compared to that in the earlier period (Mean = 54.63). However, the change in the average of the total business growth rate is not statistically significant (t=1.600, p=0.141). The decline in the total business ratio is perhaps due to the following facts:

i) After 1991 there has not been any branch expansion by the RRB, and

ii) There is an increased competition in rural banking, owing to the liberalization in banking policies following the recommendations of the Narashimham Committee reports (1991).

b) The lower growth rate of the volume of business in the post reform period is further reaffirmed by the lower slope of the trend line for the period concerned (15.09 for the earlier period and 0.0891 for the later).

c) A greater degree of variability in the growth rate of business in the earlier period as reflected by the higher C.V. in the concerned period (C.V. =106.939 for pre reform period and 21.164 for post reform period) is mainly, because of the rapid increase in the volume of business as a result of branch expansion during the earlier period.

d) The decline in the business growth rate in the present era of aggressive competition in banking is possibly due to:
i) The inability of the bank under study to compete with the other financial intermediaries functioning in rural areas such as, rural branches of the commercial banks and non-banking financial intermediaries.

ii) A considerable part of rural savings are taken away by the chit funds because of their simplicity in opening deposit accounts, convenient and door to door collection procedure through local agents (most of whom are either their relatives or well known persons in the locality).

iii) Inadequate publicity of the bank in comparison to that of their counter parts, especially commercial banks.

iv) People’s perception about the reputation of the bank is very low because of its region specific banking activities. As a result, under the wider choice domain of banking institutions, the choice rank of the RRB under study is at the bottom to a sizeable section of the people.

**Table-5.2**

Results of the statistical analysis for the selected efficiency parameters

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Variables</th>
<th>Pre reform period</th>
<th>Post reform period</th>
<th>Paired Sample t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean₁, C.V₁, b₁</td>
<td>Mean₂, C.V₂, b₂</td>
<td>t (d.f.=10)</td>
</tr>
<tr>
<td>1</td>
<td>TBGR (%)</td>
<td>54.632, 106.939, 15.09</td>
<td>26.763, 21.164, 0.0891</td>
<td>1.601</td>
</tr>
<tr>
<td>2</td>
<td>BER</td>
<td>-0.034, 66.585, 0.427</td>
<td>0.012, 230.788, 1.115</td>
<td>0.802</td>
</tr>
<tr>
<td>3</td>
<td>NBAPE</td>
<td>434, 32.04, 40.107</td>
<td>788, 23.66, 49.9</td>
<td>9.781</td>
</tr>
<tr>
<td>4</td>
<td>PEBTR (Rs.lakh)</td>
<td>6.35, 50.79, 96.745</td>
<td>66.69, 71.0, 1386.7</td>
<td>4.523</td>
</tr>
<tr>
<td>5</td>
<td>NBAPB</td>
<td>1636, 41.47, 201.52</td>
<td>3197, 23.16, 197.16</td>
<td>12.033</td>
</tr>
<tr>
<td>6</td>
<td>PBBTR (Rs.lakh)</td>
<td>24.26, 55.62, 434.22</td>
<td>268.08, 71.28, 5583.9</td>
<td>4.568</td>
</tr>
<tr>
<td>7</td>
<td>IER</td>
<td>0.684, 21.689, -0.031</td>
<td>1.088, 57.33, 0.18</td>
<td>1.819</td>
</tr>
<tr>
<td>8</td>
<td>NHITIIR</td>
<td>0.028, 102.32, 0.006</td>
<td>0.058, 31.838, -0.002</td>
<td>1.918</td>
</tr>
<tr>
<td>9</td>
<td>BCER</td>
<td>0.102, 18.54, 0.002</td>
<td>0.094, 31.779, -0.008</td>
<td>0.748</td>
</tr>
<tr>
<td>10</td>
<td>ECER</td>
<td>0.039, 28.896, 0.00</td>
<td>0.026, 42.454, -0.003</td>
<td>1.564</td>
</tr>
<tr>
<td>11</td>
<td>OCER</td>
<td>0.064, 33.166, -0.001</td>
<td>0.043, 67.094, -0.007</td>
<td>1.605</td>
</tr>
</tbody>
</table>

Note: 'b' refers to the slope of the trend line, suffixes 1 and 2 refer to the pre and post reform periods respectively.

Data source: Annual Reports of CGB from 1983 to 2004-05

5.5.2. Business efficiency ratio (BER):

Business efficiency ratio represents the degree of efficiency to earn profit from its business. In order to be viable, the business efficiency ratio of the bank is to be positive with an increasing trend over time.

# Like Sahara India Ltd and Peerless Finance Ltd.
The results of the econometric analysis for BER (Table-5.2) illustrate that:

a) The average of the business efficiency ratio of the RRB has improved over the period from -0.034 to 0.012 for the two periods respectively. However, the improvement is found to be statistically insignificant. It discloses the fact that in spite of earning profit since 1998-99, the banks business is not efficient enough to generate adequate profit for its growth and viability.

b) The negative mean value of ‘Business efficiency ratio’ during the pre reform period might have occurred due to the unfavourable policy conditions under which the bank had to function along with the objective of maximizing welfare of the rural poor.

c) However, the negligibly positive value of the BER reveals that the RRB under study has not been able to exploit the opportunities opened up before it because of some built in inadequacy within the system itself. Some of these inadequacies are:

- Low business potential because of the economic backwardness of the operational area with poor rural people as its clientele base.
- Small size of transactions per account and hence a higher transaction costs.
- Discouraging business atmosphere due to lower recovery rate and political interventions in banking business,
- Increasing competition in rural money market because of the reasons mentioned earlier.

Thus, the study finds that, although the bank is now earning profit during the recent years and have a positive trend, as revealed by the slopes of the trend lines (0.427 and 1.115 for the two periods respectively), it requires more attention to the above noted aspects and find out the ways and means to maintain the business efficiency ratio at positive level in order to achieve a higher degree of viability.

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* a) Average deposits per account was Rs. 997.41 (with min=Rs. 553.27 and max=1428.79) and Rs. 7272.18 (with minimum= Rs. 1709.76 and maximum=Rs. 11423.73) for the pre and post reform periods respectively.

b) The average of volume of loans and advances disbursed per account was Rs.2694.23 (with min=Rs. 2087.09 and max=Rs. 3677.55) and Rs. 1017.34 (with minimum = Rs. 4079.91 and maximum= Rs. 23735.88) during the two respective periods.

# The average recovery rate for pre reform period is 42.63% and the same for post reform period is 51.50%.

211 The RRB under study has earned profit for the first time in 1998-99 and since then it has been earning profit.
5.5.3. Number of Business Accounts per Employee (NBAPE):

The number of business accounts per employee is a widely accepted measure of employee productivity or employee efficiency. Other things remaining the same, a higher NBAPE reduces the transaction cost. For viability of a bank, this efficiency is needs to be increased at a higher rate over time. Further, with the Industry Tribunal Award in 1992, the salaries of the RRB employees are now at par with that of their counterparts in the sponsor banks. Therefore, the NBAPE should also increase at a proportionate rate, at least logically.

As the volume of business is directly related to the number of business accounts, the volume of working fund, its volume of business, lending capacity, volume of income, cost of deposit mobilization, etc. are largely determined by per employee (and / or per branch) number of deposits accounts. Hence it is an important factor influencing viability of a bank.

The study observed that the mean of NBAPE increased significantly from 434 to 788 respectively over the periods under consideration (t = 9.781, p = 0.000).

However the NBAPE was found to be relatively steadier in the post reform period as demonstrated by the decline in the CV from 32.04 to 23.66 over the two periods.

The higher CV for the pre reform period was mainly due to the galloping increase in NBAPE following the rapid branch expansion adopted during the period concerned. The relatively steady position in NBAPE in the post reform period, on the other hand is mainly due to: (a) unchanged number of branches, (b) increased competition an (c) cautious selection of beneficiaries by the bank following commercial approach.

The growth rates of NBAPE for the post reform period is found to be higher than that of the previous period as reflected by the increase in ‘b’ value from 40.107 to 49.9 in the two periods respectively.

The above improvements in employee productivity in terms of NBAPE are possibly because of the liberalization of target group obligations and broader exposure of the bank as a result of relocation of branches to more potential areas.

$ The correlation coefficient of volume of business of the RRB with the number of Business accounts per employee is found to be 0.943 (p= 0.024).
5.5.4. **Per employee business turnover ratio (PEBTR):**

*Per employee business turnover ratio* is one of the widely accepted indicators of employee productivity. An increase in per employee business turnover ratio is highly necessary to reduce the cost of business. Therefore, for greater viability, the per employee business turnover ratio is required to grow over time. Further, with the technological innovations and automation in banking sector, the PEBTR is supposed to increase at a higher rate.

The econometric analyses on PEBTR (Table-5.2) describe that:

a) There has been a statistically significant improvement in employee productivity or efficiency, in terms of PEBTR as revealed from the statistically significant increase in the Mean of PEBTR from Rs.635310 in the pre reform period to Rs.6668950 in the later period ($t = 4685, p = 0.001$).

b) The higher C.V. during the post reform period in comparison to that in the pre reform one reflects a greater variability due to increase in the PEBTR over the years ($C.V_1 = 50.79$ and $C.V_2 = 71.00$ in the two periods respectively).

c) The improvement in PEBTR is also supported by the higher slope (b value) of its trend line ($b_1 = 96.745$ and $b_2 = 1386.70$ for the two periods respectively).

The causes of such improvements may be attributed to the shift in operational goal of the bank under study from social welfare to commercial profit.

5.5.5. **Number of business accounts per branch (NBAPB):**

a) It has been observed that a large number of new deposit accounts are opened up by the villagers in every year, in order to avail the opportunities in the form of subsidies from various government schemes and programmes of self employment and rural development such as Swarnajyoti Gramin Rozgar Yojana (SJGRY), Prime Minister's Rozgar Yojana (PMRY), etc. However, after availing the benefits of these schemes, these deposit accounts are hardly maintained.

b) A statistically significant and positive increase in average number of deposit accounts per branch has been observed in the post reform period in
comparison to that of the earlier period [Mean of NBAPB = 1636 and 3197 for the two periods respectively, with t = 13.781, p = 0.000].

c) Further, the decline in C.V. from 41.47 to 23.16 for the above two periods respectively delineates that the NBAPB remained relatively steadier in the post reform period.

The higher slope of the trend line for NBAPB for the post reform period coupled with lower C.V. also demonstrate its higher and steady growth in the concerned period (b₁ =201.52, b₂ = 287.16).

d) Thus, the study observed an improvement in the branch level productivity in terms of the above efficiency parameter in the period following the implementation of banking sector reforms. The increase in the NBAPB reflects that suitable relocation of branches has generated a positive impact on the RRB by attracting more depositors towards it. Further, a considerable increase in the number of deposit accounts per branch is due to the steps taken for vigorous deposits mobilization drives under Development Action Plan²¹² and the Memorandum of Understanding with the sponsor bank.

5.5.6. Per branch business turnover ratio (PBBTR):  

Per branch business turnover ratio (PBBTR) is another important widely used efficiency parameter of a bank as well as a measure of branch productivity. The econometric analysis on PBBTR discloses that

a) There has been a statistically significant increase in the PBBTR during the post reform period. This is divulged by the increase in the average PBBTR from Rs.2426280 during the pre reform period to Rs. 26808200 (more than 11 times) during the post reform period (t= 4.757, p=0.001) [Table 5.2].

b) The higher C.V. with a positive and higher slope of the trend line, during the post reform period, as compared to that in the pre reform period (C.V. =64.31 and 69.3; and slopes of the trend lines are 268.69 and 4322.6 respectively for the pre and post reform periods) represent an improvement in the performance of the RRB branches after the implementation of reform measures.

c) Further, as shown in Table-5.2, the trend line of PBBTR in the post reform period is steeper than that of the earlier period (b₁ =434.22 and b₂ =

²¹² The bank under study formulated a Development Action Plan along with recovery action plan in 1993-94 as per the instruction of NABARD and had fixed a target of total turn around by the end of the financial year 1997-98.
5583.90). This demonstrates a higher growth rate of the PBBTR during the period following the implementation of banking sector reform measures. The above improvement in the branch productivity is mainly, the result of
a) Increase in employee productivity,
b) Increase in number of deposit accounts per branch,
c) Greater access to the big depositors due to relocation of branches and
d) The development action plan followed by the memorandum of understandings with the sponsor bank as mentioned earlier.

5.5.7. Income Efficiency Ratio (IER):
The income efficiency ratio (IER) represents the degree of income earning efficiency of a bank. It is the amount of income generated by the bank out of spending one rupee in total on different heads of expenditure, during a given year. It is an important indicator of viability because, any value of IER lower than one (i.e. $\text{IER} < 1$) means expenditure is more than income. On the other hand, if the ratio is equal to unity (i.e. $\text{IER} = 1$), it represents income higher than expenditure. Therefore a bank can only be viable provided the ratio is greater than one (i.e. $\text{IER} > 1$).

The increase in the mean value of IER (Table 6.2) from 0.684 to 1.088 in the two respective periods under study implies the following:
i) On average there has been an increase in the income efficiency of the bank under study, during the post reform period.

ii) The huge loss of the RRB in the pre reform period was because of the inability of the RRB to earn greater than what it had spent during each of the years in that period. Mean of IER during the pre reform period was 0.684. This means that to earn an income amounting to Rs. 684, the RRB under study had to spend Rs.1000 on average in each year during the period prior to the implementation of banking reforms. Thus the RRB failed to generate any surplus during the period; rather it had depleted its working fund. The factors accountable for such a lower IER were perhaps:
a) lack of efficient fund management practices,
b) lack of professionalism and commercial attitude among the employees because of the existence of a protectionist umbrella of the government above the RRBs; so long as the objective of increasing social welfare was there
c) the management gave more attention towards achieving the target amount of loans to the priority sector and other government sponsored employment generation schemes and least consideration to the commercial aspect.
d) higher rate of directed lending at subsidised rates of interest,
e) inefficient loan follow-up and loan supervision leading to low recovery rate,
f) higher operational costs due to opening of new branches,
g) higher man-power expenses because of implementation of Industry Tribunal Award in 1992 which increased the salaries of the RRB staffs at par with those of their counterparts in sponsor bank, and so on.

iii) However, in the post reform period the income efficiency ratio has increased and it has become greater than unity (mean of $\text{IER} = 1.088$). This implies that the bank under study, on average, has earned Rs.1088 out of spending of Rs. 1000 in a year and thus generated a surplus of Rs. 88 out of that expenditure (i.e. 8.8%). This improvement in income efficiency ratio has become possible mainly because of the following steps taken by the bank under study:

a) more rational approach in expenditure,
b) increase in volume of business,
c) increase in employee efficiency,
d) increase in branch level efficiency,
e) prohibition on fresh recruitment after 1991,

iv) But, the result shows that the above increase in income efficiency is not statistically significant ($t = 1.819, p = 0.099$). This delineates the fact that there is further scope for increase in income with similar expenditure. In other words, more income generating avenues are to be created within the existing set up.

5.5.8. Non-interest income to interest income ratio (NIITIIR):

This ratio is considered as an index of business diversification. It also reflects the adaptability of the bank with modern business trends and environment. In the changing milieu of rural banking, the differences between the RRB and other scheduled commercial banks have now almost disappeared and the RRBs are now allowed to carry out all kind banking business. In their move to increase the volume of total profit, the RRBs have now entered into a variety of non-traditional banking activities, like, providing financial advisory
services, underwriting services, and various other non-fund-based or fee-based activities such as commission, exchange and brokerage, sale/purchase of investment, and exchange transactions, etc. Thus, they are now emphasizing on various off-balance sheet (OBS) and non-interest income generating activities. Therefore, the share of non-interest income to interest income ratio is expected to increase in case of the RRB under study for its viability.

The results of the statistical analysis (Table -6.2) show that,

i) An increase in the NIITIIR from 0.028 in the previous period to 0.058 post reform period reflecting the diversification of its business from traditional to fee based and non-interest income earning activities.

ii) However, the change is not statistically significant (t = 1.918, p = 0.084). This suggests that the increase in the NIITIIR is not sufficient and there are further scopes for increasing non interest income by the RRB under study. Important factors responsible for the insufficient increase in NIITIIR may be

(a) There is little scope of non-fund based business because of the socio-economic backwardness of the region.

(b) There is increased competition in the field of fee-based services with the entry of private players in the rural sector.

Hence, the RRB under study is required to innovate new products to suit the need of the rural people and increase its competitive strength in the market.

5.5.9. The business cost efficiency ratio (BCER):

The business cost efficiency ratio (BCER) represents the managerial efficiency of the bank in containing cost of the business. The BCER reflects the cost per unit of business of the bank. A reduction in cost of production for a given business (or doing a higher volume of business with same cost) leads to an increase in profitability of the bank and viability. A decline in BCER increases the competitive strength of a bank also. Therefore, viability of a bank is largely affected by its BCER and the ratio is required to decrease over time. This is because the technological innovations and their applications in banking sector, particularly the use of computers and information technology has made a paradigm shift in the supply of banking services and at the same time, has reduced the business costs.
So far as our study is concerned,

i) No significant decline (i.e. improvement) in the business cost efficiency ratio (BCER) is observed in the post reform period in comparison to that of the earlier period \((t=0.748, p = 0.472)\).

ii) However, the marginal improvement (decline) in the BCER in the period concerned, is mainly because of

a) Reduction in operational cost as there was neither branch expansion during the period nor any increase in the number of employees, especially after 1991.

b) Improvement in employee productivity and branch productivity.*

c) Use of computers, though not extensively, and,

d) Increase in the volume of business.

iii) The statistically non-significant t-value \((t=0.748, p = 0.472)\) reveals bank’s inability to manage the relevant costs in comparison to the volume of business.

iv) This observation is further confirmed by the negative but nearly zero slope of the trend line \((-0.008)\) in the post reform period and urges for an appropriate cost reducing strategies by the bank.

5.5.10. **Employee cost efficiency ratio (ECER):**

The employee cost efficiency ratio represents the manpower cost per unit of business cost of employees being a considerable part of total cost of business of a bank, the ECER plays an important role in determining the viability status of the bank. The study shows that

i) Like business cost efficiency ratio, the employee cost efficiency ratio also has improved marginally, as evidenced by the decline in the average from 0.039 to 0.031 during the two periods under comparison respectively \((t = 1.564 \text{ and } p=0.149)\) and has similar implication as in the case for (BCER).

The marginal improvement in the employee cost efficiency is mainly because of the following reasons:

a) The relocation of branches helped to increase the volume of business per employee,

* As has already been observed for the variables, NDACPE, VDPE, NLACPB, VLPB, NDACP, VDPB, NLACP, and VLPB.
b) The embargo on fresh recruitment helped the bank to contain employee cost to a great extent.

However, the factors responsible for statistically insignificant change in the ECER are:

- Though, the salaries and allowances of the employees are increasing at par with the rate of their sponsor bank counter parts, following the National Industries Tribunal Award, 1992; the volume of business didn’t increase at the same pace because of the typical rural orientation of the RRB.

- The graying of staffs has pushed the employees to a higher scales but their traditional banking outlook is perhaps, detrimental to the progress of the bank under study as they are not in a position to accept challenges of competition and dynamism in the banking sector of the country.

Hence new recruitment procedures needs to be started to appoint young energetic youths with new outlook, more professional attitude and capacity to accept the new challenges before the bank under study so that the AGVB branches in Barak valley can be geared up and pushed on the track of viability.

5.5.11. Operational cost efficiency ratio (OCER):

The statistical analysis on OCER has the following findings:

i) There is marginal and not statistically significant improvement in the operational cost efficiency as can be observed from the marginal fall in the average of the ratio from 0.054 to 0.043 in the two periods under study. \( (t = 1.605, p = 0.140) \)

ii) The trend lines are almost parallel for both the periods implying that the ratio has remained almost unchanged irrespective of the time period.

iii) The above findings have similar implications on the RRB under study and therefore the RRB has to reduce operational cost per unit of business in order to remain commercially viable in the long run.

5.6. A comparative analysis of viability status of RRBs of the state as a whole:

To get the relative viability position of the RRB under study in the State of Assam we have performed a comparative analysis of five erstwhile RRBs of the state in respect of the above selected parameters. Out of the five RRBs of Assam 4
RRBs, Viz. Cachar Gramin Bank (CGB), Praggyotish Gaonlia Bank (PGB), Subansiri Gaonlia Bank (SGB) and Lakhimi Gaonlia Bank (LGB) were under the sponsorship of United Bank of India*. The other RRB - Longpi Dehangi Rural Bank (LDRB) is under the State Bank of India’s sponsorship.

For the purpose of comparative analysis of viability of RRBs of the state, ‘Paired Sample t-Test’ has been performed for the selected 15 variables (presented in Table-5.1) and for all the five RRBs of the state; over the two periods under consideration**. The results of the analysis are presented hereunder in Table-5.3.

The Table-5.3 exhibits that

- All the RRBs, operating in the state, have performed efficiently during the post reform period, particularly in respect of NBAPE, PEBTR, NBAPB and PBBTR. This is revealed by the statistically significant (p<0.05) increase in their mean values. However all of these variables are in absolute terms.

The major factors those contributed to the improvements in the mentioned variables, possibly, are:

i) Macroeconomic factors like increase in money supply, increase in income of the people, increase in propensity to save, increase in infrastructural facilities like transport and communications, etc. following national plans, over the periods. Greater exposure of the RRBs due to the relocation of branches.

ii) Greater autonomy of the RRBs regarding the selection of beneficiaries, fixation of interest rates, etc.

iii) Redefinition of priority sector and relaxation with regard to priority sector lending, expansion of business through increase in the variety of deposits and credit schemes, etc.

iv) Greater commercial orientation of the staffs.

- The SGB and LGB have outweighed the remaining 3 RRBs of the state in respect of TBGR (p<0.05), while only the PGB had achieved statistically significant increase in BER over the periods.

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* These four RRBs, Viz. Cachar Gramin Bank, Praggyotish Gaonlia Bank, Subansiri Gaonlia Bank and Lakhimi Gaonlia Bank are now merged together to give birth a new RRB with nomenclature - Assam Gramin Vikash Bank with effect from 12-01-2006.

** The two periods are a) from 1983 to 1993-94 and b) from 1994-95 to 2004-05.

# The improvements in respect of no. of loan accounts per branch and volume of loans per branch are not statistically significant in LDRB.
These improvements in the mentioned banks may be to a large extent because of their locational advantages.

On the other hand, in respect of income efficiency ratio (IER), no bank had performed well during the post reform period (p>0.05)

The PGB, SGB and LGB have increased their share of non-interest income in the total income significantly during the post reform period (p<0.05).

The Table also exhibits that only the PGB among the RRBs of the state has managed its cost components (BCER and ECER) during the post reform period.

<table>
<thead>
<tr>
<th>Banks</th>
<th>Variables</th>
<th>Cachar Gramin Bank</th>
<th>Pragiyotish Gaonlia Bank</th>
<th>Subansin Gaonlia Bank</th>
<th>Lakhmi Gaonlia Bank</th>
<th>Longpi Dehangi Rural Bank</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean, t, p</td>
<td>Mean, t, p</td>
<td>Mean, t, p</td>
<td>Mean, t, p</td>
<td>Mean, t, p</td>
<td>Mean, t, p</td>
</tr>
<tr>
<td>TBGR</td>
<td>54.63, 26.76, 1.598, 141</td>
<td>52.71, 29.43, 1.554, 149</td>
<td>48.16, 28.41, 2.431, 0.035</td>
<td>39.54, 29.64, 4.786, 0.001</td>
<td>32.22, 20.01, 1.783, 0.105</td>
<td></td>
</tr>
<tr>
<td>BER</td>
<td>-3.39, -2.05, 0.442, -2.884, -0.032</td>
<td>4.222, 0.002</td>
<td>-4.621, -2.244, 1.419, 0.186</td>
<td>-3.811, -3.115, 1.843, 0.095</td>
<td>-5.676, -2.486, 1.506, 0.163</td>
<td></td>
</tr>
<tr>
<td>NIAPE</td>
<td>434, 788, 9.781, 0.000</td>
<td>493, 804, 11.044, 0.000</td>
<td>402, 785, 4.524, 0.001</td>
<td>351, 643, 3.637, 0.005</td>
<td>306, 482, 3.471, 0.006</td>
<td></td>
</tr>
<tr>
<td>PEBTR (RS '000)</td>
<td>635.31, 6668.95, 4.523, 0.001</td>
<td>562.12, 7384.47, 2.266, 0.047</td>
<td>448.41, 5241.15, 15.438, 0.001</td>
<td>142.65, 5857.36, 4.821, 0.001</td>
<td>313.10, 4045.82, 3.927, 0.003</td>
<td></td>
</tr>
<tr>
<td>NBAPB</td>
<td>1636, 3197, 12.03, 0.000</td>
<td>1708, 4087, 10.808, 0.000</td>
<td>1404, 3156, 7.663, 0.000</td>
<td>1396, 4129, 5.991, 0.000</td>
<td>1288, 4124, 3.913, 0.003</td>
<td></td>
</tr>
<tr>
<td>PEBTR (RS '000)</td>
<td>2426.28, 28608.20, 4.568, 0.001</td>
<td>301.05, 1557.06, 5.883, 0.000</td>
<td>292.33, 1438.07, 5.791, 0.000</td>
<td>268.59, 1148.08, 8.176, 0.000</td>
<td>248.55, 985.45, 3.777, 0.004</td>
<td></td>
</tr>
<tr>
<td>IER</td>
<td>0.684, 1.088, 1.819, 0.099</td>
<td>0.863, 1.108, 706, 497, 778, 986, 532, 616, 633, 1.096, 1.638, 132, 708, 979, 1.383, 196</td>
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<tr>
<td>NITIR</td>
<td>0.028, 0.058, 1.916, 0.084</td>
<td>0.041, 0.096, 2.383, 0.041, 0.032, 0.073, 2.702, 0.022, 0.024, 0.046, 2.205, 0.052, 0.019, 0.028, 1.562, 0.154</td>
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<tr>
<td>BCER</td>
<td>0.102, 0.094, 0.749, 4.72</td>
<td>0.996, 0.991, 3.993, 0.003, 108, 097, 1.616, 140, 112, 101, 1.518, 161, 121, 106, 1.451, 178</td>
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<tr>
<td>ECER</td>
<td>0.039, 0.026, 1.564, 0.149</td>
<td>0.041, 0.024, 2.277, 0.046, 0.044, 0.029, 1.819, 0.099, 0.036, 0.033, 1.913, 0.083, 0.054, 0.036, 1.552, 147</td>
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<tr>
<td>OCER</td>
<td>0.065, 0.043, 1.605, 1.40</td>
<td>0.063, 0.040, 1.396, 1.93, 0.072, 0.047, 5.36, 0.603, 0.053, 0.051, 1.841, 0.095, 0.074, 0.052, 7.31, 481</td>
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</table>

Source: Calculated on the basis of variables derived from the published annual reports of the respective banks for the periods 1994-05 to 2004-05

* Bold figures indicate statistically significant t-values

However, all the RRBs have failed to manage the operational cost (OCER), strategically, over the period of time (p>0.05)

So far as the bank under study is concerned, it does not reveal any statistically significant improvement in respect of the efficiency parameters like BER, IER, BCER, ECER and OCER during the post reform period. But in case of PGB, a statistically significant improvement has been observed in respect of BER, BCER and ECER during the post reform period.

Further, while in case of PGB, improvements in respect of 8 variables are found to be statistically significant, for each of SGB and LGB it is for 6 variables and for both the CGB and LDRB it is only 4. Thus, it can be said that
the rank of the RRB under the study area in respect of viability status is at the bottom of the list when compared among the RRBs of the state with PGB occupying the first position and both the SGB as well as the LGB are having the second position.

The above econometric analysis discloses that all the RRBs of the state have performed well in respect of the routine business operations like mobilization of deposits and disbursement of credits. But, so far as their efficiency levels in respect increasing the income or in managing the costs are concerned, their performances are not admirable.

The analysis, thus, reveals that there are hindrances that thwarted the viability of the bank under study. The major factors are:

a) The TBGR is lower than the three other RRBs under the same sponsor bank (mean = 26.76 for CGB but 29.43, 28.41 and 29.64 for PGB, SGB and LGB respectively). Though the BGR has increased during the post reform period, it is not statistically significant (p>0.05)

b) Though BER has improved in the post reform period in comparison to that of the earlier period (improved from -3.39 to -2.05) it is still negative (p = 0.442).

c) The increase in IER is not statistically significant (p = 0.099).

d) The NIITIIR has increased in the post reform period but it is not statistically significant (p = 0.084).

e) Though BCER, ECER and OCER have improved over the period under study, but the improvements are not statistically significant (p>0.05)

We, therefore, can safely argue that the RRB under study (i.e. the AGVB at present) should endeavour to a) increase its BGR, b) improve its efficiency levels of business, c) diversify its business to non-interest income earning activities and d) reduce BCER, ECER and OCER; in order to improve its viability.

5.7. Identification of Factors Affecting Viability of the RRB (Factor Analysis):

In order to determine the very specific components affecting the viability of the RRB under study along with their relative significance, 'Factor Analysis' has been performed following Principal Component Analysis with Oblique
Rotation, a method which is widely adopted for extraction of factors where the variables are inter related. The analysis has been done using statistical software SPSS for Windows Version 11.0. In this regard instead of considering business of the bank as a whole, we have separately treated deposits and credits for an in-depth analysis of the impact of these two components of business on viability of the bank. Thus, the total number of variables considered for Principal Component Analysis is 15 instead of earlier analysed 11.

Table 5.4: Correlations Matrix

<table>
<thead>
<tr>
<th></th>
<th>TBGR</th>
<th>BER</th>
<th>NDAPB</th>
<th>VDPE</th>
<th>NCAPB</th>
<th>VCPB</th>
<th>IER</th>
<th>NITTIR</th>
<th>BCER</th>
<th>Eoyer</th>
<th>OCER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total business</td>
<td>1.00</td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td>growth ratio (TBGR)</td>
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<td>1.00</td>
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<tr>
<td>Business efficiency</td>
<td>-0.244</td>
<td>1.00</td>
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<td>Ratio (BER)</td>
<td>(0.47)</td>
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<tr>
<td>No. of Deposits A/C</td>
<td>-0.567</td>
<td></td>
<td>0.482</td>
<td>0.943</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>per employee (NDAPB)</td>
<td>(0.049)</td>
<td></td>
<td>(0.134)</td>
<td>(0.000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume of deposits</td>
<td>-0.577</td>
<td></td>
<td>0.704</td>
<td>0.943</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>per employee (VDPE)</td>
<td>(0.045)</td>
<td></td>
<td>(0.016)</td>
<td>(0.000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of Credit</td>
<td>-0.759</td>
<td></td>
<td>0.527</td>
<td>0.888</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>accounts per employee</td>
<td>(0.007)</td>
<td></td>
<td>(0.096)</td>
<td>(0.000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume of O/S/Credit</td>
<td>-0.562</td>
<td></td>
<td>0.539</td>
<td>0.989</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>per employee (VCPE)</td>
<td>(0.072)</td>
<td></td>
<td>(0.087)</td>
<td>(0.000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of deposits</td>
<td>-0.571</td>
<td></td>
<td>0.473</td>
<td>0.940</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>accounts per branch</td>
<td>(0.067)</td>
<td></td>
<td>(0.141)</td>
<td>(0.000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(NDAPB)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume of deposits</td>
<td>-0.577</td>
<td></td>
<td>0.706</td>
<td>0.942</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>per branch (VDPB)</td>
<td>(0.063)</td>
<td></td>
<td>(0.015)</td>
<td>(0.000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of Credit A/C</td>
<td>-0.768</td>
<td></td>
<td>0.515</td>
<td>0.888</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>per branch (NCAPB)</td>
<td>(0.006)</td>
<td></td>
<td>(0.105)</td>
<td>(0.000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Volume of O/S credit</td>
<td>-0.565</td>
<td></td>
<td>0.540</td>
<td>0.990</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>per branch (VCPB)</td>
<td>(0.041)</td>
<td></td>
<td>(0.080)</td>
<td>(0.000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income efficiency</td>
<td>-0.543</td>
<td></td>
<td>0.815</td>
<td>0.876</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ratio (IER)</td>
<td>(0.084)</td>
<td></td>
<td>(0.002)</td>
<td>(0.000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-interest income</td>
<td>0.312</td>
<td>-0.614</td>
<td>0.200</td>
<td></td>
<td>0.363</td>
<td>-0.197</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to interest income</td>
<td>(0.389)</td>
<td></td>
<td>(0.044)</td>
<td>(0.555)</td>
<td>(0.272)</td>
<td>(0.561)</td>
<td>(0.497)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ratio (NITIR)</td>
<td></td>
<td></td>
<td></td>
<td>(0.000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business cost</td>
<td>0.389</td>
<td>-0.896</td>
<td>-0.770</td>
<td>-0.912</td>
<td></td>
<td>-0.762</td>
<td>-0.814</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>efficiency ratio</td>
<td>(0.236)</td>
<td></td>
<td>(0.000)</td>
<td>(0.016)</td>
<td>(0.000)</td>
<td>(0.006)</td>
<td>(0.002)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(BCER)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.001)</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Employee cost</td>
<td>0.429</td>
<td>-0.825</td>
<td>-0.740</td>
<td>-0.889</td>
<td></td>
<td>-0.793</td>
<td>-0.784</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>efficiency ratio</td>
<td>(0.048)</td>
<td></td>
<td>(0.002)</td>
<td>(0.009)</td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.004)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ECER)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operational cost</td>
<td>0.201</td>
<td>-0.969</td>
<td>-0.502</td>
<td>-0.727</td>
<td>-0.546</td>
<td>-0.570</td>
<td>-0.492</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>efficiency ratio</td>
<td>(0.554)</td>
<td></td>
<td>(0.000)</td>
<td>(0.115)</td>
<td>(0.011)</td>
<td>(0.082)</td>
<td>(0.067)</td>
<td>(0.124)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(OECER)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.011)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* The value of the Determinant of the correlation matrix = 0.0134 > 0.0001

Note: 1. Figures in parentheses represent p-values.

2. Bold figures highlight significant correlation coefficients at 5% level.

Data Source: Annual reports of the CGB for the years from 1994-95 to 2004-05

To judge the applicability of the method, the correlation matrix was derived at first. The correlation matrix (presented in Table 5.4) shows that the correlation coefficients are significant in most of the cases. Further, the determinant of the correlation matrix is 0.0134 which is greater than 0.0001. This justifies the adoption of above technique of extraction of components.

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213 As the variables under analysis are mutually interrelated therefore Oblique rotation method has been applied instead of Varimax Rotation, which is the appropriate technique for mutually independent variables.
In order to extract the number of components we have selected only those components whose Eigen values are greater than 1. This process yielded two factors which explain 88.515% of total variance. The number of factors extracted by the process is also supported by the ‘Scree Plot’ test. The Scree Plot also shows the point of inflexion after two factors as shown below and thus justifies the number of factors extracted.

![Scree Plot Diagram](image)

Table-5.5 represents Eigen values, variance explained, and cumulative variance explained for the factor solution. The first panel gives values based on initial eigen values. For the initial solution, there are as many components or factors as there are variables. The initial Eigen values associated with each variable represent the variance explained by that particular linear component along with the percentage of variance explained.

![Table-5.5](image)

<table>
<thead>
<tr>
<th>Component</th>
<th>Initial Eigenvalues</th>
<th>Extraction Sums of Squared Loadings</th>
<th>Rotation Sums of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>% of Variance</td>
<td>Cumulative %</td>
</tr>
<tr>
<td>1</td>
<td>11.428</td>
<td>76.185</td>
<td>76.185</td>
</tr>
<tr>
<td>3</td>
<td>.942</td>
<td>6.279</td>
<td>94.794</td>
</tr>
<tr>
<td>4</td>
<td>.558</td>
<td>3.718</td>
<td>98.512</td>
</tr>
<tr>
<td>7</td>
<td>3.709E-02</td>
<td>.247</td>
<td>99.842</td>
</tr>
<tr>
<td>8</td>
<td>1.479E-02</td>
<td>9.859E-02</td>
<td>99.940</td>
</tr>
<tr>
<td>9</td>
<td>8.756E-03</td>
<td>5.837E-02</td>
<td>99.999</td>
</tr>
<tr>
<td>10</td>
<td>2.170E-04</td>
<td>1.447E-03</td>
<td>100.000</td>
</tr>
<tr>
<td>11</td>
<td>4.243E-16</td>
<td>2.829E-15</td>
<td>100.000</td>
</tr>
<tr>
<td>12</td>
<td>1.533E-16</td>
<td>1.022E-15</td>
<td>100.000</td>
</tr>
<tr>
<td>13</td>
<td>1.449E-17</td>
<td>9.662E-17</td>
<td>100.000</td>
</tr>
<tr>
<td>14</td>
<td>-1.265E-16</td>
<td>-8.431E-16</td>
<td>100.000</td>
</tr>
<tr>
<td>15</td>
<td>-2.424E-16</td>
<td>-1.616E-15</td>
<td>100.000</td>
</tr>
</tbody>
</table>

Note: Extraction Method: Principal Component Analysis.
Source: calculated on the basis of variables derived from annual reports of the CGB for the years from 1994-95 to 2004-05
The "Total" column gives the amount of variance in the observed variables accounted for by each component or factor. The "% of Variance" column gives the percent of variance accounted for by each specific factor or component, relative to the total variance in all the variables. Thus from the table we find that the First component explains 76.185% and the second component explains 12.330% of total variance. It is to be noted that the first few components explains relatively large amount of variance (especially factor 1) whereas the second factor explains relatively small amount of variance.

The Eigen Values associated with these factors are again displayed along with their percentage of variance explained in the column labeled 'Extraction Sums of Squared Loadings'. This part of the table gives information regarding the extracted factors or components. For principal components extraction, these values will be the same as those reported under Initial Eigen values, except that the values for the discarded factors are ignored.

The final part of the Table-5.5 labeled 'Rotated Sums of Squared Loadings' displays the Eigen values of the factors after rotation. The variance accounted for by rotated factors or components may be different from those reported for the extraction.....but the Cumulative % for the set of factors or components will always be the same. Rotation has the effect of optimizing the factor structure. One consequence for these is that the relative importance of the three factors is optimized. Thus, before rotation the two factors explained 76.185% and 12.330% of variance respectively but after rotation the extracted two factors explain 56.877% and 31.638% of total variance of viability.

5.7.1. Classification of factors affecting viability:

The Table 5.6 represents rotated component matrix. This table (also called the Pattern Matrix for oblique rotations) reports the factor loadings for each variable on the components or factors after rotation. Each number represents the partial correlation between the item and the rotated factor. These correlations help to formulate an interpretation of the factors or components. This is done by looking for a common thread among the variables that have large loadings for a particular factor or component. The table shows that there are 2 factors and the variables load very highly onto the first factor (the components of each factor are highlighted with bold figures).
From the Table-5.6 one can find that there are 9 variables under the first factor and the second factor which includes 6 variables. The variables under the first factor are mainly related to the operational aspects of banking business and therefore may suitably be brought under the nomenclature Operational Factor.

Similarly the variables extracted under the second factor relate to the managerial efficiency of business and therefore, labeled as "Efficiency Factor".

Table - 5.6
Rotated Component Matrix

<table>
<thead>
<tr>
<th>Variables</th>
<th>Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Total business Growth ratio</td>
<td>-.715</td>
</tr>
<tr>
<td>Business efficiency ratio</td>
<td>.261</td>
</tr>
<tr>
<td>No. of deposit A/C per employee</td>
<td>.940</td>
</tr>
<tr>
<td>Per employee Deposit2 (Rs.'000)</td>
<td>.845</td>
</tr>
<tr>
<td>No. of Loans/ Adv. Accounts per employee</td>
<td>.921</td>
</tr>
<tr>
<td>Loans / Adv per employee</td>
<td>.917</td>
</tr>
<tr>
<td>No. of deposit A/C per branch</td>
<td>.942</td>
</tr>
<tr>
<td>Per branch deposit (Rs.'000)</td>
<td>.844</td>
</tr>
<tr>
<td>No. of loans/adv. Accounts per branch</td>
<td>.922</td>
</tr>
<tr>
<td>Volume of Loans / Adv. per Branch(Rs. ,000)</td>
<td>.917</td>
</tr>
<tr>
<td>Income efficiency ratio</td>
<td>.652</td>
</tr>
<tr>
<td>Non-interest income to interest income ratio</td>
<td>-1.818E-02</td>
</tr>
<tr>
<td>Business cost efficiency ratio</td>
<td>-.602</td>
</tr>
<tr>
<td>Employee cost efficiency ratio</td>
<td>-.629</td>
</tr>
<tr>
<td>Operating cost efficiency ratio</td>
<td>-.299</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis  Rotation Method: Oblique with Kaiser Normalization  2 components extracted (Rotation converged in 13 iterations) Bold figures represent the components under each factor

Data Source: Annual reports of the CGB for the years from 1994-95 to 2004-05

The Table-5.7 below summarizes the results of the factor analysis. It discloses that the variables related to the Operational factor is of prime importance (explaining 56.877% of total variance), so far as the viability of the bank under study is concerned. Therefore, the bank is required to give more concentration on the this factor and improve the volume of business through its enhanced operational activities.
At the same time the bank is to provide adequate attention on improving the efficiency factor (explaining 31.638% of variation in viability) in order to achieve greater viability.

### Table-5.7
**Factors Influencing Viability of RRB in South Assam**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Operational factor</td>
<td>Efficiency factor</td>
</tr>
<tr>
<td>1. Total Business Growth Ratio</td>
<td>1. Business efficiency ratio</td>
<td></td>
</tr>
<tr>
<td>2. No. of Deposits A/C Per Employee</td>
<td>2. Income Efficiency Ratio</td>
<td></td>
</tr>
<tr>
<td>3. Volume of Deposits Per employee (Rs.'000)</td>
<td>3. Non-interest income to interest income ratio</td>
<td></td>
</tr>
<tr>
<td>5. Volume of Loans / Adv. Per Employee</td>
<td>5. Employee cost efficiency ratio</td>
<td></td>
</tr>
<tr>
<td>6. No. of Deposit A/C Per Branch</td>
<td>6. Operating cost efficiency ratio</td>
<td></td>
</tr>
<tr>
<td>7. Volume of Deposits Per Branch (Rs.'000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. No. of Loans/Adv. Accounts Per Branch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Volume of Loans / Adv. Per Branch (Rs.,000)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Total Eigen Values | 8.532 | 4.746 |
| % of Variance explained | 56.877 | 31.638 |
| Cumulative % | 56.877 | 88.515 |

Source: Calculated on the basis of variables derived from annual reports of the CGB for the years from 1994-95 to 2004-05.

5.8. Major findings and testing of hypothesis:

In the context of recent reform measures initiated by the Reserve Bank of India in (a) strengthening prudential norms, (b) effecting structural changes in the system, and (c) redefining its regulatory role, the study on the problems of financial viability of RRB has the following observations:

The reform measures provided both opportunities as well as challenges to the regional rural banks. The de-regulation of financial institutions, competitive operating environment and integration of various institutions of the financial
sector are not necessarily be advantageous to the rural institutions unless they are well equipped to face the new challenges of competition in mobilising of deposits as much as in deploying funds.

In terms of number of business accounts per employee (NBAPE) and per branch (NBAPB), as well as in terms of the per employee and per branch business turnover ratio (PEBTR and PBBTR) the bank under study has achieved statistically significant improvement [\( p(t) < 0.05 \)]. these signify an improvement in employee efficiency and branch level efficiency of the bank over the period.

The increment in employee efficiency and branch efficiency could not help the bank much in improving the viability status because of the inefficient cost management as revealed by the statistically insignificant changes [\( p(t) > 0.05 \)] in BCER, ECER and OCER.

The total business growth ratio (TBGR) of the bank instead of increasing has declined during the post reform period. Further, it is found to be lower than that in the other three RRBs sponsored by United Bank of India during the post reform period. These delineate the weaknesses of the bank to face the aggressive competition with the financial intermediaries functioning in the rural areas. This weak competitive strength in market is posing a threat to the viability of the bank under study.

The business efficiency ratio (BER), representing the degree of efficiency to earn profit out of its business, has turned to be positive in the post reform period from its earlier negative value. But the improvement is not statistically significant [\( p(t) > 0.05 \)]. this signifies the lack of efficiency of the bank to tap the opportunities of profit earning.

The income efficiency ratio (IER), representing the degree of income earning efficiency, is very low and the improvement over the period is found to be statistically insignificant [\( p(t) > 0.05 \)].

No statistically significant improvement is noticed in the non-interest income to interest income ratio (NIITIIR) over the period. this demonstrates that a considerable degree of inefficiency of the bank to diversify its business in non-traditional areas.
The comparative viability status of the bank under study (erstwhile CGB, now the branches of AGVB Cachar Zone) is comparatively lower than that of the two other erstwhile RRBs of the state.

The factors extracted by applying Principal component analysis disclosed that 88.51% of the viability of the bank is mainly determined by the operational activities like mobilization of deposits, disbursement of credit, engagement in non-fund fee based business, etc supported by adequate efficiency in the field of cost containment, fund management, credit portfolio management and recovery management. The bank has achieved a considerable degree of improvement in operational factor but in terms of efficiency factor, it is lagging behind.

Thus, based on the above findings, we partially accept our null hypothesis and conclude that the viability of the bank has not much improved due to weak efficiency factor. Therefore it is suggested that the presently formed AGVB should concentrate more on the efficiency factor with due importance on the operational aspects to achieve a greater degree of viability and serve the rural clientele being a healthy financial institution.