Productivity Analysis

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Productivity Analysis

Productivity is a vital indicator of economic performance of an economic system. Productivity is not an end in itself. In fact, it is a mechanism for improving the material quality of life. Productivity is fundamental to progress throughout the world. It is at the heart of economic growth and development, improvements in standards of living and quality of life.

Definition

Productivity is defined as the goods and services produced per unit of labour, capital or both. The ratio of output to labour and capital is a total productivity measure. In simple words, productivity is the output per unit of input employed. The basic definition of productivity is:

\[
\text{Productivity} = \frac{\text{Total Output}}{\text{Total Input}}
\]

Kopleman has defined productivity as the relationship between physical output of one or more of the associated physical inputs used in production. When single input is used to measure productivity, it is called ‘factor productivity’ and when all factors are combined together for the purpose, it is known as ‘total factor productivity.’²
Concept of Productivity in Banking

The concept and definition of productivity as applied in manufacturing industries cannot be applied as such in banking industry because it is primarily a service industry. In the field of banking, the various products are accounts, drafts, exchange remittances, cheques, travellers cheques, credit cards, debit cards, services for guarantees, various kinds of loans like housing loan, education loan, car loan etc. Identification and measurement of output in banking is very difficult exercise as it is not possible to bring various services to measure output. However, banking being an important economic activity cannot afford to lose sight of the concept of productivity. Application of the concept in the Indian banking industry becomes all the more difficult, as it gets associated with such diverse aspects like operational cost effectiveness, profitability, customer services, priority sector lending, mobilization of deposits, deployment of credit in rural and backward regions. But as we know that banks are the mirror of an economy. Therefore better functioning of banking sector may lead to the overall improvement of the economy. In fact, banks act as a link between those who want to save and those who want to invest, so improvement in the productivity of the banking sector is very much needed who want to save and obviously, difficulty is not in applying the broader concept of productivity as ratio of output and input, but is in measuring output in the form of services. The concept of
productivity analysis in banking sector may give misleading results, if not used carefully. If we see the productivity of PSBs in relation to the productivity of foreign banks, then it will be noticed that productivity of foreign banks (say business per employee) is much higher, but such comprise is misleading. Productivity at the national level is dependent on various factors like per capita income, saving habits and banking habits. In addition to it, there are regional variations which affect the productivity of various players in the banking field. So in order to have a reliable idea of productivity, it is necessary to analyze every segment, different sizes of banks and regionwise positioning of banks.

As in banking industry in India, volume of business became progressively imperative to secure more resources for meeting social objectives while maintaining viability of operations, business level may be preferred as being more representative of productivity.²

Productivity helps firms, industries and nations to achieve sustainable competitive advantage. Industry is a thrust area for countries in their quest for competitiveness. It must be noted that banks which have maintained the momentum of continuous growth, and profitability showed better ratio of manpower effectiveness. Each element has crucial sub-components which serve as building blocks for productivity. The Government policies effectively support competitiveness if they are structures around productivity driven reform mechanism, cost deflating tariff structure and technology and industry vision.³
C.B. Rao has proposed a productivity competitiveness model particularly for Indian environment. The model comprises of three elements *viz*.

2. Industry Strategies.

Competitive market conditions and liberalized economic and industrial policies demand more strident attention to productivity improvement and restructuring of industries. Continuous upgradation of technical knowledge, discovery of new ways for productivity improvement and flexible redeployment of skills in new activities are vital for the competitive age. Similarly introduction of systems of employee participation such as quality circles and TQM system would be necessary to keep the employees on the leading edge of their skills and motivation.

The level of productivity orientation in various elements affects the overall level of competitiveness. The three element dynamic model of productivity and competitiveness has been shown in Figure 3.1. The Indian government has launched a liberalisation programme to dismantle controls and for shifting towards market driven economy. To have the benefits from such measures, productivity driven reform mechanism is necessary, only then the real benefit of liberalization can be enjoyed.
Figure 3.1

Three Element Dynamic Model of Productivity and competitiveness

Government Policies
- Productivity Driven Reforms
- Cost-deflating tariff structure
- Technology and Industrial visions

Industry Strategies
- Structural Reshaping
- Structural Transformation
- Cooperative Innovation

Management Methods
- Productivity-Oriented generic strategies
- Technological simplification
- Production organization
- Human resource development

In the Figure 3.2 dynamic linkages between productivity and competitiveness has been illustrated. It also illustrates a few major avenues in which the productivity can affect competitiveness. Thus, productivity is seemed to be strategic to a whole range of economic activities.

In India the need of the hour is substantial improvement in productivity of PSBs. Since the performance of the bank will play an important role in deciding the overall performance of the real sector, their productivity is very critical to the overall productivity of the country. Studies have clearly brought out the extent to which the below mentioned factors are responsible for low productivity in Indian banks as compared to American banks. In the study, productivity is defined as number of transactions and the number of loans and deposit accounts per hour per employee. According to the study the three reasons for the wide gap between Indian and US banks are:

- Technology (Lack of branch automation and centralized processing).
- Systematic inefficiencies.
- Scale.

Productivity of a bank can be improved by reducing the cost of disintermediation and by raising the spread that is deploying capital
in the most effective way. The study has focused on how PSBs and old generation private sector banks can improve productivity by managing some of the important

Figure 3.2
Dynamic Linkages between Productivity and Factors of Competitiveness

- Domestic economic strength
  - More value added
  - Higher capital formation
  - Greater growth
  - Higher domestic savings

- Capital Intensity
  - Optimum capital output ratio
  - Productive employment
  - Greater growth
  - Productivity driven investments

- Human Resources
  - Higher skills
  - Global competitiveness
  - Positive attitude
  - Continuing education
  - Quality of life

- Science & Technology
  - Efficient and innovative applications
  - Fundamental break-through technologies
  - Technological virtuosity

- Product Range
  - More products
  - Higher quality
  - Better service
  - Global Market penetration
  - Fast product renewal

- Indigenous manufacturing base
  - Full range of processes
  - Full range of machines materials & components

- Government
  - Minimal state intervention
  - Redeployment of State resources
  - Market-oriented system

- Infrastructure
  - Modern, efficient transport, communication, power
  - State funding where necessary

- Management
  - Competitive price/Quality ratios
  - Core competencies
  - Best management practices

- Finance
  - Efficient use of capital
  - Venture financing
  - Global integration

- Export Competitiveness
  - Comparative advantage
  - Competitive efficiency
  - Net foreign exchange earnings

- Important dependence
  - Linkages to technologies
  - Value adding
  - Export fillip
  - De-bottlenecking
elements related to capital, technology, process, organization issues, labour in a better way.

**Sources of Productivity**

Jagwant Singh has studied following main sources of productivity:

1. Changes in capital/labour ratio.
2. Improvement in technological knowledge.
3. Improvement in managerial knowledge.
4. Education.
5. Demographic changes.
6. Changes in hours of work.
7. Reallocation of resources.
8. Regulations
9. Economies of scale and increased specialization.
10. Entrepreneurship and social attitudes.
11. Irregular factors.
12. Miscellaneous determinants.

Thus, attitudinal change, adaptability and openness to new ideas, techniques and technology by executives at all levels are the
The first prerequisite of success of any programme, be it long range planning or a programme of productivity improvement.5

**Why Productivity is Low in PSBs?**

Following factors are responsible for low productivity in PSBs:

1. **Dual control by RBI as well as government:**
   The banking system suffers from the fact that it is serving two masters. Both the Finance Ministry and RBI seem to have equal say in the affairs of the bank. The government should make its expectation from the banking system very clear and leave their realization to debt handling of RBI.

2. **Lack of autonomy**
   Lack of Aatonomy together with governmental fears like directed investment and directed credit programmes adds to the systemic inefficiencies and results in lower productivity. PSBs face excessive administrative and political interferences in internal credit decision-making and internal management.

3. **Unproductive competition:**
   The SBI, its seven associates and the additional 20 nationalized banks, have all been allowed to retain their individual entities. Different banks even though they themselves belong to the public sector, spend considerable time competing among themselves without increasing the total benefit to the system. As a result the focus on banks has shifted away from the areas of real productivity.
It is very difficult to speculate in what manner the 27 banks should be reformed and into what precise manner? However, the best option would be to divest government holding as promised, so that the mergers between banks could be market-driven rather than a bail-out consideration.

4. **Lock up of funds in NPAs:**

   Non-performing assets continue to be the primary source of misery and ever present Damocles swords threatening to question the fundamental efficiencies of banks. The major shortcoming is the absence of any systematic effort to identify, train and position officials with the required proficiency to handle the credit functions.

5. **Policy of appeasement towards the union**

   Though, over the last couple of years, Bank Union has been lying low yet they refuse to subscribe the principles and practices of participative management and have victimized the middle and branch management sheer collective power to stop work and cause around havoc. Although the bank unions have the guaranteed right to collective on behave of the employees, they have no right to go on strike.

6. **Work culture:**

   Productivity is a function not always related to the size and technology only but also to various other factors like work culture, service diversification etc. It should be noticed that personnel
functioning in Indian and foreign banks have different work culture. Particularly in PSBs, work culture is entirely discouraging.

7. **Deficient training systems**

Another main cause of low productivity in case of Indian banks is the deficiencies in the training systems. Training modules used these days are totally irrelevant. Training system should focus on the quality of services given to the customers. Training programme should enable every individual to work as a member of an effective team and realize the potential.

**Major Indicators of Productivity**

1. **Business Volume (Deposits + Advances) / No. of Employees**

   This is the most common productivity indicator used by banks. This ratio does not reflect fully the wide range of services provided by the banks. The business per employee is more than six times higher in foreign banks operating in India as compared to PSBs. This comparison may be biased representation of employee productivity because of the difference between technology, process and procedures followed by foreign banks as compared to PSBs.

2. **(Working Fund + Contingent Liability) / No. of Employees**

   This ratio represents the value of business based on both fund and nonfund related activities. The ratio shows that
foreign banks, on an average perform 30 times than PSBs. Private banks perform 10 times better than PSBs on this parameter. The largest share of this difference is due to non-fund businesses where foreign banks are very strong.

3. **Net Total Income/No. of Employees and Net Profit/No. of Employees**

The foreign banks perform 10 times better than PSBs on net total income per employee and about 20 times better on net profit per employee. The comparison clearly reflex that foreign and private banks have much higher operational efficiency as compared to PSBs.

4. **Working Fund/Establishment Cost**

This ratio indicates how effectively human resources has worked in generating business for the bank. However the private sector banks have performed better than foreign banks and PSBs on this parameter.

The following ratios have been used in order to study the productivity of PSBs.

**Per Employee Indicators (Labour Productivity)**

1. Deposit per employee
2. Advances per employee
3. Business per employee
4. Total expenditure per employee
Employee Productivity of PSBs

Human resource is the most important asset of an organization and banking business is no exception to it. But Indian PSBs are known for their excessive staff strength, it affects their productivity. In the present study, employee productivity of PSBs has been evaluated by taking eight ratios in consideration. A brief summary of all these ratios are as under:

1. **Deposits per Employee:**
This ratio has been computed by dividing the amount of total deposits by the number of employees in the bank. The ratio has shown an upward trend (in absolute terms) in general as shown in Table 3.1. In 1996 the ratio was the highest in the case of BOB with Rs. 33.00 lakh per employee and the lowest in case of SBM with Rs. 17.17 lakh per employee. In 2007, OBC with Rs.209.64 lakh per employee was on the top followed by COB with Rs.184.84 lakh per employee.

2. **Advances per Employee:**
   This ratio has been computed by dividing the amount of total advances by the number of employees in the bank. The ratio has shown an upward trend (in absolute terms) in general as shown in Table 3.2. In 1996 the ratio was the highest in the case of IB with Rs.21.90 lakh per employee and lowest in case of SBM with 9.64 lakh per employee. In 2007, UntBI with Rs.119.07 lakh per employee was on the top followed by COB with Rs.107.32 lakh per employee.

3. **Total income per employee:**
   This ratio has been computed by dividing the amount of total income by the number of employees in the bank. The ratio has shown an upward trend (in absolute terms) in general as shown in Table 3.3. In 1996 the ratio was the
highest in the case of IB with Rs. 3.91 lakh per employee and lowest in case of SBM with Rs. 1.95 lakh per employee. In 2007, OBC with Rs. 25.86 lakh per employee was on the top followed by UntBI with Rs. 25.14 lakh per employee.

4. **Total expenditure per employee:**
This ratio has been computed by dividing the amount of total expenditure by the number of employees in the bank. The ratio has shown an upward trend (in absolute terms) in general as shown in Table 3.4. In 1996 the ratio was the highest in the case of IB with Rs. 3.83 lakh per employee and the lowest in case of SBM with Rs. 1.92 lakh per employees. In 2007, OBC with Rs. 22.70 lakh per employee was on the top followed by UntBI with Rs.20.30 lakh per employee.

5. **Net profit per employee:**
This ratio has been computed by dividing the amount of total amount of net profits by the number of employees in the bank. The ratio has shown an upward trend (in absolute terms) in general as shown in Table 3.5. In 1996 the ratio was the highest in the case of CB with Rs.0.15 lakh per employee and the lowest in case of UCB and VB. In 2007, OBC with Rs.2.36 lakh per employee was on the top followed by SBP with Rs.1.97 lakh per employee.
6. **Spread per employee:**
   This ratio has been computed by dividing the amount of total amount of spread by the number of employees in the bank. The ratio has shown an upward trend (in absolute terms) in general as shown in Table 3.6. In 1996 the ratio was the highest in the case of OBC with Rs.0.88 lakh per employee and the lowest in case of SBP with Rs.0.37 lakh per employee. In 2007, UntBI with Rs.7.44 lakh per employee was on the top followed by OBC with Rs.7.15 lakh per employee.

7. **Business per employee:**
   This ratio has been computed by dividing the amount of total business by the number of employees in the bank. The ratio has shown an upward trend (in absolute terms) in general as shown in Table 3.7. In 1996 the ratio was the highest in the case of BOI with Rs.54.02 lakh per employee and lowest in case of SBM with Rs.26.79 lakh per employee. In 2007, OBC with Rs.313.83 lakh per employee was on the top followed by COB with Rs.292.16 lakh per employee.

8. **Burden per employee:**
   This ratio has been computed by dividing the amount of total burden by the number of employees in the bank. The ratio has shown an upward trend (in absolute terms) in
general as shown in Table 3.8. In 1996 the ratio was the highest in the case of OBC with Rs.0.66 lakh per employee and the lowest in case of SBP with Rs.0.25 lakh per employee. In 2007, SB with Rs.2.94 lakh per employee was on the top followed by UntBI with Rs.2.60 lakh per employee.
Branch Productivity of PSBs

While evaluating the results in terms of infrastructural facilities utilized by the banks at various locations, places, again eight indicators have been used. A brief summary of these ratios are as under:

1. **Deposits per branch:**
   
   This ratio has been computed by dividing the amount of total deposits by the number of branches in the bank. The ratio has shown an upward trend (in absolute terms) in general as shown in Table 3.9. In 1996 the ratio was the highest in the case of BOI with Rs. 748.33 lakh per branch and the lowest in case of BOM with Rs.305.63 lakh per branch. In 2007, SBI with Rs.2978.10 lakh per branch was on the top followed by OBC with Rs.2946.06 lakh per branch.

2. **Advances per branch:**
   
   This ratio has been computed by dividing the amount of total advances by the number of branches in the bank. The ratio has shown an upward trend (in absolute terms) in general as shown in Table 3.10. In 1996 the ratio was the highest in the case of BOI with Rs.480.84 lakh per branch and the lowest in case of DB with Rs.151.66 lakh per branch. In 2007, COB with Rs.1667.29 lakh per branch was on the top followed by UntBI with Rs.1639.82 lakh per branch.

3. **Total income per branch:**
   
   This ratio has been computed by dividing the amount of total income by the number of branches in the bank. The ratio has shown
an upward trend (in absolute terms) in general as shown in Table 3.11. In 1996 the ratio was the highest in the case of BOI with Rs.80.58 lakh per branch and the lowest in case of DB with Rs.33.83 lakh per branch. In 2007, SBI with Rs.374.07 lakh per branch was on the top followed by OBC with 363.43 lakh per branch.

4. **Total expenditure per branch:**

   This ratio has been computed by dividing the amount of total expenditure by the number of branches in the bank. The ratio has shown an upward trend (in absolute terms) in general as shown in Table 3.12. In 1996 the ratio was the highest in the case of BOI with Rs.79.62 lakh per branch and the lowest in case of DB with Rs. 33.06 lakh per branch. In 2007, OBC with Rs.319.04 lakh per branch was on the top followed by SBI with Rs.307.54 lakh per branch.

5. **Net profit per branch:**

   This ratio has been computed by dividing the amount of total NP by the number of branches in the bank. The ratio has shown an upward trend (in absolute terms) in general as shown in Table 3.13. In 1996 the ratio was the highest in the case of SBP with Rs.2.56 lakh per branch and the lowest in case of UCB. In 2007, COB with Rs.46.75 lakh per branch was on the top followed by OBC with Rs.33.15 lakh per branch.

6. **Spread per branch:**

   This ratio has been computed by dividing the amount of total spread by the number of branches in the bank. The ratio has shown an upward trend (in absolute terms) in general as shown in Table
3.14. In 1996 the ratio was the highest in the case of CB with Rs.19.08 lakh per branch and the lowest in case of AIIB with Rs.6.23 lakh per branch. In 2007, UNtBI with Rs.102.50 lakh per branch was on the top followed by OBC with Rs. 100.52 lakh per branch.

7. Business per branch:

This ratio has been computed by dividing the amount of total business by the number of branches in the bank. The ratio has shown an upward trend (in absolute terms) in general as shown in Table 3.15. In 1996 the ratio was the highest in the case of BOI with Rs. 1229.17 lakh per branch and the lowest in case of DB with Rs.449.65 lakh per branch. In 2007, COB with Rs. 4538.94 lakh per branch was on the top followed by OBC with Rs. 4410.16 lakh per branch.

8. Burden per branch:

This ratio has been computed by dividing the amount of total burden by the number of branches in the bank. The ratio has shown an upward trend (in absolute terms) in general as shown in Table 3.16. In 1996 the ratio was the highest in the case of CB with Rs. 15.32 lakh per branch and the lowest in case of BOB with Rs. 7.06 lakh per branch. In 2007, SB with Rs. 42.99 lakh per branch was on the top followed by UntBI with Rs. 35.89 lakh per branch.

After computing, the per employee and per branch ratios, the Mean and S.D. of these ratios have been computed. The Mean and S.D. of Indicators has been shown in the Table 3.17 and Table 3.18.
Average T-Scores and Ranking

In the research methodology given in the first chapter of the present study, it was decided that average t-scores will be used to standardize the performance indicated by various indicators. It was also decided that separate average t-scores for per employee and per branch will be worked out. Their- after, average t-scores, by taking relevant indicators would be computed to indicate total productivity and ranks determined on the basis of average t-scores will be compared. This section deals with this aspect.

Employee Productivity

Table 3.19 shows that according to employee productivity in 1996, BOI was ranked 1st followed by IB, BOB and OBC. SBI was ranked 8th, SBBJ (25th) and SBM was at bottom. SBI improved its ranking to 5th in 1997 and 1st in 1998. Thereafter its position shuffled. On the other hand BOB was able to maintain its position in almost each and every year. The table shows that there were some changes in the ranking of various banks at different stages of study. As far as ranking at the beginning and at the end of study period is concerned, the table shows that IB moved from 2nd to 24th, IOB from 7th to 13th. No major change was noticed in the case of SBBJ and SB. Average T-Scores shows that at times, for certain banks different ranks were determined on the basis of fractional differences. However, OBC
continuously improved its performance, average t-scores and emerged as clear leader by 2005 and remained on the top up to 2007, the last year of the study. It is also clear that relatively SBH performed extremely well as compared to other subsidiaries of SBI. It is the leader of the group in employee productivity. Another bank which improved its rank considerably was SBT.

**Branch Productivity**

Table 3.20 shows that there were some changes in rank according to branch productivity at various stages of the study. SBI at all stages was on the first five positions according to branch productivity indictors. Only once in 2003 its rank slipped to 6th position, but it regained its position in 2006. The average t-scores indicate that other major players for the first five positions from 1996 to 2007 were CB, OBC, BOB and BOI.

In 2006 and 2007, UntBI has made a remarkable improvement in its rank which is quite encouraging to note. The banks whose ranking was in the last were SBBJ, AIIB, CBI, DB and UCB. As far as ranking at the beginning and at the end of study period is concerned, the table shows that the position of BOI moved from 1st to 5th, UCB from 8th to 26th and COB from 14th to 1st. In the SBI group SBI was the leader followed by SBP in every years.

**Overall Productivity**

Average t-scores for determining overall productivity performance are based on the combined results of average score of
employee productivity and average T-Scores of branch productivity. It shows that BOB, BOI, SBI, COB, OBC have top rankers whereas the ranking of SBBJ, SB, AIIB, SBM and UCB was far from satisfaction. As far as ranking at the beginning and at the end of study period is concerned, the table shows that IB moved from 3rd to 23rd, UntBI from 16th to 7th and VB from 23rd to 18th. As far as SBI group is concerned SBI remained the leader followed by SBP in almost every year.

**Conclusions**

To conclude, it can be said that growth in business per employee, Net profit per employee and total income per employee shows moderate growth in employee productivity. As far as burden per branch is concerned, it has shown a mixed phenomenon. As far as productivity is concerned, it has shown a mixed phenomenon. As far as productivity is concerned, SBI has remained the leader in the State Bank group. It is very much clear from the result that as a result of liberalization, work culture of PSBs has improved, which has favourably affected the productivity ratios. As far as branch productivity is concerned freedom in this field have favourably affected the productivity is concerned freedom in this field have favourably affected the productivity of PSBs. On the basis of T-Scores (Overall Productivity) also, it becomes evident that BOB, BOI, SBI, COB, OBC have top rankers whereas the ranking of SBBJ, SB, AIIB, SBM and UCB was far from satisfactory. As far as ranking at the beginning and at the end of study period is concerned, the table
shows that IB moved from 3rd to 23rd, UntBI from 16th to 7th and VB from 23rd to 18th. As far as SBI group is concerned SBI remained the leader followed by SBP in almost every year.

References


