INTERNATIONAL JOURNAL OF RESEARCH IN COMPUTER APPLICATION & MANAGEMENT

IJRCM

A Monthly Double-Blind Peer Reviewed (Refereed/Juried) Open Access International e-Journal - Included in the International Serial Directories

Indexed & Listed at:

Ulrich's Periodicals Directory ©, ProQuest, U.S.A., EBSCO Publishing, U.S.A., Cabell's Directories of Publishing Opportunities, U.S.A., Open J-Gage, India [link of the same is duly available at Inflibnet of University Grants Commission (U.G.C.)], Index Copernicus Publishers Panel, Poland with IC Value of 5.09 & number of libraries all around the world.

Circulated all over the world & Google has verified that scholars of more than 2022 Cities in 153 countries/territories are visiting our journal on regular basis.

Ground Floor, Building No. 1041-C-1, Devi Bhawan Bazar, JAGADHRI – 135 003, Yamunanagar, Haryana, INDIA

http://ijrcm.org.in/

CONTENTS

CALL FOR MANUSCRIPTS

We invite unpublished novel, original, empirical and high quality research work pertaining to recent developments & practices in the area of Computer, Business, Finance, Marketing, Human Resource Management, General Management, Banking, Insurance, Corporate Governance and emerging paradigms in allied subjects like Accounting Education; Accounting Information Systems; Accounting Theory & Practice; Auditing; Behavioral Accounting; Behavioral Economics; Corporate Finance; Cost Accounting; Econometrics; Economic Development; Economic History; Financial Institutions & Markets; Financial Services; Fiscal Policy; Government & Non Profit Accounting; Industrial Organization; International Economics & Trade; International Finance; Macro Economics; Micro Economics; Monetary Policy; Portfolio & Security Analysis; Public Policy Economics; Real Estate; Regional Economics; Tax Accounting; Advertising & Promotion Management; Business Education; Management Information Systems (MIS); Business Law, Public Responsibility & Ethics; Communication; Direct Marketing; E-Commerce; Global Business; Health Care Administration; Labor Relations & Human Resource Management; Marketing Research; Marketing Theory & Applications; Non-Profit Organizations; Office Administration/Management; Operations Research/Statistics; Organizational Behavior & Theory; Organizational Development; Production/Operations; Public Administration; Purchasing/Materials Management; Retailing; Sales/Selling; Services; Small Business Entrepreneurship; Strategic Management Policy; Technology/Innovation; Tourism, Hospitality & Leisure; Transportation/Physical Distribution; Algorithms; Artificial Intelligence; Compilers & Translation; Computer Aided Design (CAD); Computer Aided Manufacturing; Computer Graphics; Computer Organization & Architecture; Database Structures & Systems; Digital Logic; Discrete Structures; Internet; Management Information Systems; Modeling & Simulation; Multimedia; Neural Systems/Neural Networks; Numerical Analysis/Scientific Computing; Object Oriented Programming; Operating Systems; Programming Languages; Robotics; Symbolic & Formal Logic and Web Design. The above mentioned tracks are only indicative, and not exhaustive.

Anybody can submit the soft copy of his/her manuscript **anytime** in M.S. Word format after preparing the same as per our submission guidelines duly available on our website under the heading guidelines for submission, at the email address: **infoijrcm@gmail.com**.

GUIDELINES FOR SUBMISSION OF MANUSCRIPT

1. **COVERING LETTER FOR SUBMISSION:**

DATED: ____________

THE EDITOR
IJRCM

Subject: **SUBMISSION OF MANUSCRIPT IN THE AREA OF .**

(e.g. Finance/Marketing/HRM/General Management/Economics/Psychology/Law/Computer/IT/Engineering/Mathematics/other, please specify)

DEAR SIR/MADAM

Please find my submission of manuscript entitled '____' for possible publication in your journals.

I hereby affirm that the contents of this manuscript are original. Furthermore, it has neither been published elsewhere in any language fully or partly, nor is it under review for publication elsewhere.

I affirm that all the author (s) have seen and agreed to the submitted version of the manuscript and their inclusion of name (s) as co-author (s).

Also, if my/our manuscript is accepted, I/We agree to comply with the formalities as given on the website of the journal & you are free to publish our contribution in any of your journals.

NAME OF CORRESPONDING AUTHOR:
Designation:
Affiliation with full address, contact numbers & Pin Code:
Residential address with Pin Code:
Mobile Number (s):
Landline Number (s):
E-mail Address:
Alternate E-mail Address:

NOTES:
a) The whole manuscript is required to be in ***ONE MS WORD FILE*** only (pdf. version is liable to be rejected without any consideration), which will start from the covering letter, inside the manuscript.
b) The sender is required to mention the following in the **SUBJECT COLUMN** of the mail:
New Manuscript for Review in the area of (Finance/Marketing/HRM/General Management/Economics/Psychology/Law/Computer/IT/Engineering/Mathematics/other, please specify)
c) There is no need to give any text in the body of mail, except the cases where the author wishes to give any specific message w.r.t. to the manuscript.
d) The total size of the file containing the manuscript is required to be below **500 KB**.
e) Abstract alone will not be considered for review, and the author is required to submit the complete manuscript in the first instance.
f) The journal gives acknowledgement w.r.t. the receipt of every email and in case of non-receipt of acknowledgment from the journal, w.r.t. the submission of manuscript, within two days of submission, the corresponding author is required to demand for the same by sending separate mail to the journal.

2. **MANUSCRIPT TITLE**: The title of the paper should be in a 12 point Calibri Font. It should be bold typed, centered and fully capitalised.

3. **AUTHOR NAME (S) & AFFILIATIONS**: The author (s) **full name**, **designation**, **affiliation** (s), **address**, **mobile/landline numbers**, and **email/alternate email address** should be in italic & 11-point Calibri Font. It must be centered underneath the title.

4. **ABSTRACT**: Abstract should be in fully italicized text, not exceeding 250 words. The abstract must be informative and explain the background, aims, methods, results & conclusion in a single para. Abbreviations must be mentioned in full.

5. **KEYWORDS:** Abstract must be followed by a list of keywords, subject to the maximum of five. These should be arranged in alphabetic order separated by commas and full stops at the end.

6. **MANUSCRIPT**: Manuscript must be in ***BRITISH ENGLISH*** prepared on a standard A4 size ***PORTRAIT SETTING PAPER***. It must be prepared on a single space and single column with 1" margin set for top, bottom, left and right. It should be typed in 8 point Calibri Font with page numbers at the bottom and centre of every page. It should be free from grammatical, spelling and punctuation errors and must be thoroughly edited.

7. **HEADINGS**: All the headings should be in a 10 point Calibri Font. These must be bold-faced, aligned left and fully capitalised. Leave a blank line before each heading.

8. **SUB-HEADINGS**: All the sub-headings should be in a 8 point Calibri Font. These must be bold-faced, aligned left and fully capitalised.

9. **MAIN TEXT**: The main text should follow the following sequence:

   INTRODUCTION

   REVIEW OF LITERATURE

   NEED/IMPORTANCE OF THE STUDY

   STATEMENT OF THE PROBLEM

   OBJECTIVES

   HYPOTHESES

   RESEARCH METHODOLOGY

   RESULTS & DISCUSSION

   FINDINGS

   RECOMMENDATIONS/SUGGESTIONS

   CONCLUSIONS

   SCOPE FOR FURTHER RESEARCH

   ACKNOWLEDGMENTS

   REFERENCES

   APPENDIX/ANNEXURE

   It should be in a 8 point Calibri Font, single spaced and justified. The manuscript should preferably not exceed ***5000 WORDS***.

10. **FIGURES & TABLES**: These should be simple, crystal clear, centered, separately numbered &self explained, and **titles must be above the table/figure**. **Sources of data should be mentioned below the table/figure**. It should be ensured that the tables/figures are referred to from the main text.

11. **EQUATIONS**:These should be consecutively numbered in parentheses, horizontally centered with equation number placed at the right.

12. **REFERENCES**: The list of all references should be alphabetically arranged. The author (s) should mention only the actually utilised references in the preparation of manuscript and they are supposed to follow **Harvard Style of Referencing**. The author (s) are supposed to follow the references as per the following:

- All works cited in the text (including sources for tables and figures) should be listed alphabetically.
- Use (**ed.**) for one editor, and (**ed.s)** for multiple editors.
- When listing two or more works by one author, use --- (20xx), such as after Kohl (1997), use --- (2001), etc, in chronologically ascending order.
- Indicate (opening and closing) page numbers for articles in journals and for chapters in books.
- The title of books and journals should be in italics. Double quotation marks are used for titles of journal articles, book chapters, dissertations, reports, working papers, unpublished material, etc.
- For titles in a language other than English, provide an English translation in parentheses.
- The location of endnotes within the text should be indicated by superscript numbers.

PLEASE USE THE FOLLOWING FOR STYLE AND PUNCTUATION IN REFERENCES:

BOOKS

- Bowersox, Donald J., Closs, David J., (1996), "Logistical Management." Tata McGraw, Hill, New Delhi.
- Hunker, H.L. and A.J. Wright (1963), "Factors of Industrial Location in Ohio" Ohio State University, Nigeria.

CONTRIBUTIONS TO BOOKS

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

JOURNAL AND OTHER ARTICLES

- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

CONFERENCE PAPERS

- Garg, Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–22 June.

UNPUBLISHED DISSERTATIONS AND THESES

- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, KurukshetraUniversity, Kurukshetra.

ONLINE RESOURCES

- Always indicate the date that the source was accessed, as online resources are frequently updated or removed.

WEBSITES

- Garg, Bhavet (2011): Towards a New Natural Gas Policy, Political Weekly, Viewed on January 01, 2012 http://epw.in/user/viewabstract.jsp

MANAGEMENT OF SIZE, COST AND EARNINGS OF BANKS: COMPANY LEVEL EVIDENCE FROM INDIA

DR. A. VIJAYAKUMAR
ASSOCIATE PROFESSOR
ERODE ARTS & SCIENCE COLLEGE (AUTONOMOUS)
ERODE

ABSTRACT

As a result of globalization of financial markets, banking financial institutions face today a fast paced, dynamic and a competitive environment at the global scale. Within such a competitive environment, financial institutions are forced to examine their performance because their survival in the dynamic economics of Twenty-first century will be dependent upon their productive efficiencies. The present work is an attempt to analyze the overall efficiency of Indian banking sector with regard to management of their costs and earnings. Hence, in this study an attempt has been made to examine whether economies of scale operate, to investigate the relationship between size and earnings of the State Bank of India and its associates during the study period. The results of the study show that the relationship between size and cost should be negative. This negative relationship between operating cost and size proves the hypothesis of economics of scale. Further the analysis of relationship between size and earnings shows that there is a negative relationship between size and earnings of State Bank of India and its associate banks during the study period. This negative relationship between size and earnings proves the hypothesis of diseconomies of scale in terms of earnings. This is due to competition prevailing among the banks, in establishing their business during the study period.

KEYWORDS
Public Sector Banks, State Bank of India, Associates Banks, Size, Cost and Earnings and Economics of Scale.

INTRODUCTION
Among the financial entities, commercial banks are the predominant financial intermediaries. Commercial banks are the kingpin of all economic activities. The growing importance of these banks is reflected in business, agriculture and industries in India. These banks are most important in terms of their strength and sweep among the financial institutions. It is well recognized that the commercial banks are instrumental in shaping the economic destiny of a country. They are considered as the nerve centers of economic and finance of a nation and the parameters of its economic prospective. Since the banks have stupendous investment potential, they can make a significant contribution in eradicating poverty and unemployment and can bring about a progressive reduction in inter-regional/state, inter-sectoral and inter-personal disparities. As a result of globalization of financial markets, banking financial institutions face today a fast paced, dynamic and a competitive environment at the global scale. Within such a competitive environment, financial institutions are forced to examine their performance because their survival in the dynamic economics of Twenty-first century will be dependent upon their productive efficiencies. Hence, in response, banking firms have been trying to adopt and to adjust themselves to improve their productive efficiencies in the changing social and economic environment. The present work is an attempt to analyze the overall efficiency of Indian banking sector with regard to management of their costs and earnings.

STATEMENT OF THE PROBLEM
The last two decades of 20th century and beginning of 21st century witnessed an unprecedented spurt in the Indian Banking industry in terms of branch expansion in rural and urban areas, exploration of new avenues for credit deployment, particularly for the benefit of the under-privileged groups in both rural and urban communities. The number of State Bank of India and its associate's branches increased from 13069 in 1996-97 to 19256 in 2009-10. However, the rapid growth in the banking industry created some problems for the industry which became clear in the 1990s and beyond. One of the most important of these problems in recent years is declining profitability of many commercial banks, particularly those in the public sector. In view of their declining profitability and increasing operating cost, it is necessary to evaluate the working of these banks and also to develop suitable criteria for this purpose. In this context, a study of the relationship between size and cost and size and earnings seems important so as to determine the norms for operational efficiency. Hence, in this study an attempt has been made to examine whether economies of scale operate, to investigate the relationship between size and earnings of the State Bank of India and its associates during the study period.

The concept of economies of scale examines the relationship between size and cost of production per unit of output with size as the cause and cost as the consequence. Economies of scale arise from a more efficient use of inputs i.e., labour and capital. In conventional banking theory and in most studies of banks, an important relationship between size and cost is assumed. As economies of scale arise from a more efficient use of inputs i.e., Labour and Capital, it is necessary to examine the efficiency with which the labour input, is used. This is because banking is labour intensive industry and wages form a major component of the operating cost. Hence, it is appropriate to enquire whether economies of scale really operate with regard to labour. In order to examine empirically the size-costs and the size-earnings relationships, cross-sectional analysis has been resorted to. Statistical techniques, like regression analysis and correlation analysis have been used to discuss various empirical relationships.

SELECTION OF THE STATE BANK OF INDIA AND ITS ASSOCIATES
The State Bank of India is the biggest commercial bank in whole of Asia. It has occupied a unique place in the Indian money market, as it commands more than one-third of India's banking resources. It commands resources of public confidence through its dedicated service. The State Bank of India extends its co-operation to the government in its pursuit of building up an egalitarian society with a rising standard of living by designing its lending policies accordingly. In the present era of banking sector reforms, the State Bank of India has witnessed deregulation with a strong capital base and expenses-to-income rate which is comparable with world class banks. Moreover, the State Bank of India continued to retain its position of the pioneer in the Indian Banking Industry by reorienting itself in terms of market strategies, organizational structures systems and processes to enable it to meet the emerging challenges surely.

In the area of developing banking, the State Bank of India has eminently fulfilled its pioneering role during the five decades of its existence. To retain the banks position as the premier Indian financial services group with the world class standard and significant global business committed to excellence in customer and diversifying financial services sector, while continuing to emphasis on its development of banking role. Therefore, SBI and its associate's bank have been chosen to critically examine the size, cost and earnings performance of the banks for the present study.

SIGNIFICANCE OF THE STUDY
It is to the credit of Indian banks that the adjustment process to the reform measures has been smooth and bereft of any major eventuality. Today, most of the Indian banks can boast of moving progressively towards international benchmarks in terms of accounting standards, transparency, profitability and compliance with other important international norms. It is also to the credit of these banks, and the regulatory and supervisory climate that the Indian financial system by the large proved immune to the spate of recent contagions. As a result of reforms, attempts are now visible to right size of the operations, tone up the functional skills and build up a cushion against possible shocks from within and overseas. The most redeeming features of the reforms relate to its gradual nature as a result of which, banks have been afforded the necessary lead time to tide over possible adversities. There is a flip side as well to the success of banking reforms especially relevant to the Public Sector Banks.

More specifically, in connection with the profitability, last few years have seen many of the Public Sector Banks posting handsome profits and improving profitability levels. However, sustaining the profit momentum is best with issues like progressive of decline in interest spread, volatile business environment, fierce competitive pressures and the negative externalities associated with the large size of these banks. The ensuing banking sector will presuppose a shift in focus from size-related issues to concern about profitability, profit monitoring and efficiency in operations. Thus, the financial sector reforms made by the Government of India in 1991 and 1998, as per the recommendations of Narasimhan Committee, have brought significant improvement in the strength, resilience and competitiveness of the Indian Banking system. It is, therefore, relevant to study the efficiency with reference to the management of cost and earnings relationship of public sector banks in general and State Bank of India and its Associates in particular in the post reform era of banking sector.

HYPOTHESIS OF STUDY

The present study aims at testing the following two hypotheses with regard to size, cost and earnings.

1. There is a negative relationship between the size and costs.

2. There is a positive relationship between the size and earnings.

RESEARCH METHODOLOGY

SAMPLE DESIGN

It is nearly more than 20 years since reform process has been started in Indian Banking Industry. It is necessary to know whether the reforms are being fruitful or not keeping in this view, it is decided to analyze the performance of public sector banks in globalized economy. The review of various study on literature on banking revealed that there is not enough study that covered the performance of State Bank of India and its Associates bank in relation to financial aspects. State Bank India is the biggest commercial bank in whole of Asia. It has occupied a unique place in the Indian banking system as it commands more than one-third of India's banking resources. Moreover even in the present era banking sector reform, State Bank of India continue to retain its position as the pioneer in the Indian banking industry by re-orienting itself in terms of market strategies, organizational structures, systems and process to enable it to meet the emerging challenges squarely. Therefore, this study is primarily based on financial performance of State Bank of India and its associates.

PERIOD OF STUDY

The period 1996-97 to 2007-08 is selected for this study. This 12 year period is chosen in order to have a fairly long, cyclically well balanced period, for which reasonable homogeneous, reliable and up-to-data financial data would be available. Further, the span chosen for the study is the period of the beginning of reform measures introduced by the Government of India. Hence, the period 1996-97 to 2007-08, is era of growth of performance in the banking sector and has got genuine economic significance of its own.

SOURCES OF DATA

This study is primarily based on secondary data. The major source of data analyzed and interpreted in this study related to all those selected banking companies is collected from PROWESS database, which is the most reliable on the empowered corporate database of Centre for Monitoring Indian Economy (CMIE). The database provides financial statements, ratio analysis, funds flow and cash flows etc. Besides the prowess database, relevant secondary data have been collected from capitaline database of Bombay Stock Exchange, Bombay Stock Exchange Official Directory, CMIE publication, various publications of RBI – Banking Statistics Research's (BSR's), Banking Statistics, Statistical tables relating to banking in India and Report on trends and progress of banking in India, Reports on Currency and Finance, Economic Survey, Libraries of various research institutions, Indian Banks Association bulletin, Indian Institute of Bankers Report and various Internet resources.

DATA ANALYSIS

In order to examine empirically the size-cost and the size-earnings relationships, cross-sectional analysis has been resorted to. Statistical techniques, like regression analysis and correlation analysis have been used to discuss various empirical relationships.

A. SIZE AND COST-EMPIRICAL RELATIONSHIP

In order to examine the size relationship, the operating cost i.e., the non-interest cost is considered in the present study. The interest cost is excluded from the total cost because there is no systematic relationship between size and interest cost and also the rate of interest is dependent on government policies and so is beyond the control of the bank management. It is also observed that the co-efficient of correlation for all the five variables namely deposits, advances, volume of business, gross earnings and total deposits are very high and found to be statistically significant at one per cent level. Table 5.1 implies that all these variables are highly correlated with each other and therefore, any one of these five indicators could be selected as proxy for size. The regression results presents in Table 5.1 also shows that the volume of business gives a better explanation in terms of R^2. One more justification for selecting the volume of business as a proxy for size is that the gross earnings and total assets are also reflected in it. On empirical grounds as well as the other justifications given above, the volume of business was finally selected as a proxy for size in the present study to test the hypothesis regarding economies of scale in the State Bank of India and its associates. Linear, Semi-log and double-log cost functions have been selected to examine empirically the relationship between size and cost.

Y = a + b1 + u …………… (1)

Y = a + b1 log X + u …….. (2)

Log Y = a + b1 log X + u……… (3)

Where Y is the ratio of operating cost to volume of business (as a percentage); a is a constant; b_1 is the regression co-efficient; X is the volume of business and u is the error term. The linear functions of size and cost postulates that operating costs is changed by a fixed amount for any given change in size, whereas, the double-log function indicates the percentage change in the operating costs for a given percentage change in the volume of business (size).

STATE BANK OF INDIA

It is obvious from the regression results presents in Table 5.2 that the regression co-efficient (b_1) is found to be statistically significant in all the three fitted functions with a negative sign. This negative relationship between operating cost and size proves the hypothesis of economies of scale. It implies that the State Bank of India which increases their size may decrease their unit operating cost by the value of regression co-efficient in the fitted functions. It is observed from the linear, semi-log and double-log function that an increase in size by one per cent would lead, on an average, to the decrease of cost by 0.000002 per cent, 2.16 per cent and 3.81 per cent respectively during the study period. All these coefficient are statistically significant at one per cent level. The linear, semi-log and double log model explain 80 per cent, 81 per cent and 86 per cent of the variation in operating cost. The overall explanatory power of regression appears to be good.

ASSOCIATES BANKS

It is obvious from the regression results presented in Table 5.3 to Table 5.9 that the regression co-efficient (b_1) are found to be statistically significant in all the three fitted functions with a negative sign in all the associates Banks of State Bank of India. This negative relationship between operating cost and size proves the hypothesis of economics of scale. It implies that all the associates Banks which increase their size may decrease their unit operating cost by the value of regression co-efficient in all the three fitted functions i.e., linear, semi-log and double log function with the different degree. All these co-efficient of statistically significant at one per cent level. The linear, semi-log and double-log model explain different degree of the variations in operating cost of associates of State Bank of India. The overall explanatory power of regressions appeared to be good as in the case of all the three fitted function except State Bank of Saurashtra.

B. SIZE AND EARNINGS-EMPIRICAL RELATIONSHIP

In order to examine the size-earning relationship, the following linear, semi-logarithmic and double-log functions were selected.

Y = $a + b_1 x + u$ ……… (1)

Y = $a + b_1 \log x + u$ ….. (2)

Log Y = $a + b_1 \log x + u$…… (3)

Where 'Y' is the ratio of earning to volume of business (as a percentage); 'a' is a constant; 'b_1'is the regression co-efficient; 'x' is the volume of business; and 'u' is the error term.

STATE BANK OF INDIA

When earnings are regressed on a size fitting linear model, it can be seen from the Table 10 that the regression co-efficient (b_1) is found to be statistically significant but with negative sign. This negative relationship between size and earnings disproves the hypothesis of diseconomies of scale in terms of earnings. It implies that the State Bank of India which increases their size may decrease their earnings by the value of regression co-efficient in the fitted functions. It is observed from the linear, semi-logarithmic and double-log functions that an increase in size by one per cent would lead, on an average, to the decrease of earnings by 0.000006 per cent, 6.40 per cent and 0.34 per cent respectively. All these co-efficient are statistically significant at one per cent level. The linear, semi-logarithmic and double-log functions explain 90 per cent, 93 per cent and 83 per cent of the variations in earnings. It is also apparent from the table that the size and earnings relationship is better explained with the help of all the three functions. This can be seen from the value of the regression co-efficient and R^2. Thus, the regression results substantiate the postulated negative relationship between size and earnings with relation to SBI.

ASSOCIATES BANKS

When earnings are regressed on a size fitting linear model, it is evident from the Table 5.11 to Table 5.17 that the regression co-efficient (b_1) is found to be statistically significant but with negative sign in all the associates Banks of State Bank of India. This negative relationship between size and earnings disproves the hypothesis of diseconomies of scale in terms of earnings of all associates banks. It implies that all the associates banks which increase their size may decrease their earnings by the value of regression co-efficient in the fitted functions. It is also observed from the semi-logarithmic and double-log functions that an increase in size may leads to decrease in their earnings by the respective regression co-efficient. All these co-efficient are statistically significant at one per cent level. It is also apparent from the tables that the size and earnings relations are better explained with the help of a linear functions compared to semi-logarithmic and double logarithmic functions. This can be observed from the value of regression co-efficient and R^2. Thus, the regression results substantiate the postulated negative relationship between size and earnings.

CONCLUSION

The results of the study show that the relationship between size and cost should be negative. This negative relationship between operating cost and size proves the hypothesis of economics of scale. It implies that State Bank of India and its associate banks which increase their size may decrease their unit operating cost. The same trends are observed from the linear, semi-log and double-log function tested for this purpose. Further the analysis of relationship between size and earnings shows that there is a negative relationship between size and earnings of State Bank of India and its associate banks during the study period. This negative relationship between size and earnings proves the hypothesis of diseconomies of scale in terms of earnings. It implies that State Bank of India and its associate which increases their size may decrease their earnings. This is due to competition prevailing among the banks, in establishing their business during the study period.

REFERENCES

1. Ahmed, Abdulkadar Mohamed; Khababa, Nourredine, (1999), "Performance Banking sector" in Saudi Arabia, *Journal of Financial Management and Analysis*, Vol.12, No.1, pp. 30-37.
2. Batra, Amita, (1996), Bank Profitability with a Hybrid Profit Function: "*The Indian Case*", IER, Vol. XXXI No. 2, pp.223-24.
3. Bhatt, P.R. (1999),'Profitability of Commercial Banks in India', *Indian Journal of Economics* (March), pp. 202-214.
4. Chandra, M. (1992), "On Increasing Profitability of Public Sector Banks – A Note" *Pigmy Economic Review*, Vol.33, No. 2 and pp.20-38.
5. Das, Abhiman, (1999), '*Profitability of Pubic Sector Banks*: A Decomposition Model', Reserve Bank of India occasional Papers Vol.20, No.1, pp.1-10.
6. Donatila Kaino, Boaz Meso, (2008), Financial Liberalization and Bank Efficiency; The Case of Commercial Banks in Kenya, *The Icfaian Journal of Applied Economics*, Vol. 7, No. 3, pp. 7-22.
7. Edward, P.M. Gardener, (2004), "Analyzing the *Determinants of Bank Efficiency*: The Case of Italian Banks, Applied Economics, Vol. 36, No.2, pp. 215-227.
8. Harish Kumar Singla, (2008), Financial performance of Banks in India. The Icfai Business School, *The Icfai Journal of Bank Management*, Vol.7, No.1, pp. 50-62.
9. Kannan, R. and Aditya NarainGosh, Saibal, (2001), Determinates of Net Interest Margin under Regulatory Requirements, An Econometric Study', *Economic and Political Weekly*, Vol.36, No.4, pp.337-344.
10. Manish Mittal, and Aruna Dhade, (2007), Profitability and Productivity in Banks a Comparative Study, *Journal of Business Management*, Vol.1, No.2, pp.137-152.
11. Mercan, M. and Yolalan, R. (2001): "An Empirical Study on Measuring Operating Efficiency and Profitability of Bank Branches", *European Journal of Operation Research,* V. 46n.3: pp.282-94.
12. Pitre,V. (2003),"Measuring Bank Efficiency: *Productivity versus Profitability*", Businessline . Vol.12, No.1, pp.20-28.
13. Sanjay, J.Bhayani, (2006), *"*Performance of New Indian Private Sector Banks: A Comparative study, *The Icfai Journal of Management Research*, Vol.5, No.11, pp.53-70.
14. Saveeta and Verma, Satish (1999), "*Factors Determining Profitability* of Public Sector Banks in India: An Application of Multiple Regression Model", Prajnan, Vol.XXVII, No.4, January-March, pp.433-446.
15. Silvio John Camilleri, (2005), An *Analysis of the Profitability*, Risk and Growth Indicators of Banks Operating in Malta, University of Malta, FEMA Bank of Valetta Review, Vol.31.No.2, pp-52-60.
16. Singh, Inderjit, & Kumar, P. (2006), "Liberalization and Efficiency: The Case of Indian Banking", *Indian Management Study Journal*, Vol.10, No.1, pp. 77-93.
17. Singla, A, and Arora, R.S. (2005), "Financial Performance of Public Sector Banks: A Comparative Study of Canara Bank and Indian Bank", Punjab *Journal of Business Studies*, Vol. 1, No.2, pp.87-93.
18. Siva Reddy Kalluru, and Sham Bhat K. (2008), an Empirical Analysis of Profitability Determinants in Indian Commercial Banks during Post Reform Period, *The ICFAI University Journal of Industrial Economics*, Vol. 5, No. 4, pp 37-56.
19. Steven Fries, Damien Nvaen & Pauel Seabright, (2002), "Bank Performance in transition Economies". *The Icfaian Journal of Bank Management*, Vol.3, No.3, pp.61-76.
20. Toni Uhomoibhi Aburime, (2008), "Determinants of Bank Profitability: Company"-Level Evidence from Nigeria, *Banking and Finance* Research Group. Vol.7, No.3, pp.133-146.

TABLES

TABLE 5.1: SELECTION OF VARIABLES FOR SIZE OF BUSINESS-CORRELATION MATRIX (STATE BANK OF INDIA)

Variables	Deposits	Advances	Volume of Business	Gross Earnings	Total Assets
Deposits(x_1)	1.000				
Advances(X_2)	0.960*	1.000			
Volume of Business (X_3)	0.991*	0.989*	1.000		
Gross Earnings (X_4)	0.991*	0.935*	0.975*	1.000	
Total Assets (X_5)	0.998*	0.972*	0.996*	0.990*	1.000

* Significant at 0.01 Level; Source: Computed.

SELECTION OF VARIABLES FOR SIZE-REGRESSION RESULTS (STATE BANK OF INDIA)

[Dependent variable: Ratio of Operating Cost to Volume of Business]

Independent variables	Constant (a)	Regression Co-efficient (b1)	R^2	F ratio
Deposits(x_1)	4.10	0.000004	0.81	48.43
		(6.96)*		
Advances(X_2)	3.71	0.000004	0.75	30.44
		(5.52)*		
Volume of Business(X_3)	3.93	0.000002	0.84	42.34
		(6.50)*		
Gross Earnings (X_4)	4.39	0.0004	0.81	41.47
		(6.44)*		
Total Assets (X_5)	4.10	0.000003	0.83	47.88
		(6.92)*		

Figures in the parenthesis below regression co-efficient are't' values
Significant at 0.01 level; Source: Computed.

TABLE 5.2: RELATIONSHIP BETWEEN SIZE AND COST-REGRESSION RESULTS (STATE BANK OF INDIA)

[Dependent variable: Ratio of Operating Cost to Volume of Business Independent variable: Volume of Business]

Particulars	Regression Co-efficient	Linear	Semi- Logarithmic	Double-Logarithmic
Constant	b_0	3.92	15.13	2.58
Volume of Business	b1	-0.000002	-2.16	-3.81
		(6.51)*	(6.54)*	(7.88)*
Co-efficient of determination	R^2	0.80	0.81	0.86
Adjusted Co-efficient of determination	Adj R^2	0.79	0.79	0.84
F - Ratio	-	42.33	42.77	62.09

Figures in the parenthesis below regression co-efficient are't' values.
* - Significant at 0.01 level; Source: Computed

TABLE 5.3: RELATIONSHIP BETWEEN SIZE AND COST -REGRESSION RESULTS (STATE BANK OF SAURASHTRA)

[Dependent variable: Ratio of Operating Cost to Volume of Business Independent variable: Volume of Business]

Particulars	Regression Co-efficient	Linear	Semi- Logarithmic	Double-Logarithmic
Constant	b_0	3.93	6.08	0.99
Volume of Business	b_1	-0.00004	-0.66	-0.12
		(2.79)*	(3.80)*	(4.02)*
Co-efficient of determination	R^2	0.26	0.06	0.10
Adjusted Co-efficient of determination	Adj R^2	0.18	0.04	0.01
F - Ratio	-	3.22	0.64	1.05

Figures in the parenthesis below regression co-efficient are't' values.
* - Significant at 0.01 level; Source: Computed

TABLE 5.4: RELATIONSHIP BETWEEN SIZE AND COST-REGRESSION RESULTS (STATE BANK OF TRAVANCORE)

[Dependent variable: Ratio of Operating Cost to Volume of Business Independent variable: Volume of Business]

Particulars	Regression Co-efficient	Linear	Semi- Logarithmic	Double-Logarithmic
Constant	b_0	4.63	13.47	1.62
Volume of Business	b1	-0.00004	-2.29	-0.25
		(6.82)*	(4.71)*	(3.07)*
Co-efficient of determination	R^2	0.82	0.69	0.49
Adjusted Co-efficient of determination	Adj R^2	0.81	0.66	0.43
F – Ratio	-	46.52	2.20	9.45

Figures in the parenthesis below regression co-efficient are 't' values.
* - Significant at 0.01 level; Source: Computed

TABLE 5.5: RELATIONSHIP BETWEEN SIZE AND COST-REGRESSION RESULTS (STATE BANK OF BIKANER)

[Dependent variable: Ratio of Operating Cost to Volume of Business Independent variable: Volume of Business]

Particulars	RegressionCo-efficient	Linear	Semi- Logarithmic	Double-Logarithmic
Constant	b_0	3.53	10.67	1.80
Volume of Business	b1	-0.00003	-1.82	-0.32
		(5.32)*	(5.06)*	(5.10)*
Co-efficient of determination	R^2	0.74	0.72	0.72
Adjusted Co-efficient of determination	Adj R^2	0.71	0.69	0.69
F - Ratio	-	28.27	25.57	26.02

Figures in the parenthesis below regression co-efficient are 't' values.
- Significant at 0.01 level; Source: Computed

TABLE 5.6: RELATIONSHIP BETWEEN SIZE AND COST-REGRESSION RESULTS (STATE BANK OF INDORE)

[Dependent variable: Ratio of Operating Cost to Volume of Business Independent variable: Volume of Business]

Particulars	Regression Co-efficient	Linear	Semi - Logarithmic	Double - Logarithmic
Constant	b_0	4.52	15.82	1.81
Volume of Business	b1	-0.00008 (9.46)*	-3.10 (6.93)*	-0.32 (4.28)*
Co-efficient of determination	R^2	0.90	0.82	0.64
Adjusted Co-efficient of determination	Adj R^2	0.89	0.81	0.61
F – Ratio	-	89.57	48.14	18.32

Figures in the parenthesis below regression co-efficient are 't' values.

* - Significant at 0.01 level; Source: Computed

TABLE 5.7: RELATIONSHIP BETWEEN SIZE AND COST-REGRESSION RESULTS (STATE BANK OF HYDERABAD)

[Dependent variable: Ratio of Operating Cost to Volume of Business Independent variable: Volume of Business]

Particulars	Regression Co-efficient	Linear	Semi- Logarithmic	Double-Logarithmic
Constant	b_0	4.46	15.77	2.44
Volume of Business	b1	0.00004 (5.83)*	-2.82 (4.91)*	-0.44 (5.70)*
Co-efficient of determination	R^2	0.77	0.70	0.76
Adjusted Co-efficient of determination	Adj R^2	0.75	0.67	0.74
F – Ratio	-	33.95	24.07	32.53

Figures in the parenthesis below regression co-efficient are 't' values.

* - Significant at 0.01 level; Source: Computed

TABLE 5.8: RELATIONSHIP BETWEEN SIZE AND COST-REGRESSION RESULTS (STATE BANK OF PATIALA)

[Dependent variable: Ratio of Operating Cost to Volume of Business Independent variable: Volume of Business]

Particulars	Regression Co-efficient	Linear	Semi- Logarithmic	Double-Logarithmic
Constant	b_0	3.44	15.14	2.16
Volume of Business	b1	-0.00004 (5.45)*	-2.91 (6.52)*	-0.39 (5.12)*
Co-efficient of determination	R^2	0.74	0.80	0.72
Adjusted Co-efficient of determination	Adj R^2	0.72	0.79	0.69
F - Ratio	-	29.69	42.47	26.17

Figures in the parenthesis below regression co-efficient are't' values.

* - Significant at 0.01 level; Source: Computed.

TABLE 5.9: RELATIONSHIP BETWEEN SIZE AND COST –REGRESSION RESULTS (STATE BANK OF MYSORE)

[Dependent variable: Ratio of Operating Cost to Volume of Business Independent variable: Volume of Business]

Particulars	Regression Co-efficient	Linear	Semi- Logarithmic	Double-Logarithmic
Constant	b_0	4.12	13.33	1.80
Volume of Business	b1	-0.00006 (7.05)*	-2.49 (2.96)*	-0.31 (2.39)*
Co-efficient of determination	R^2	0.83	0.46	0.36
Adjusted Co-efficient of determination	Adj R^2	0.81	0.41	0.30
F – Ratio	-	49.76	8.77	5.75

Figures in the parenthesis below regression co-efficient are 't' values.

* - Significant at 0.01 level.

TABLE 5.10: RELATIONSHIP BETWEEN SIZE AND EARNINGS-REGRESSION-RESULTS (STATE BANK OF INDIA)

(Dependent variable: Ratio of earnings to Volume of Business)

Independent Variable	Regression Co-efficient	Linear	Semi- Logarithmic	Double-Logarithmic
Constant	a	10.81	43.98	2.78
Volume of Business	b_1	-0.000006 (9.41)*	-6.40 (11.27)*	-0.34 (7.98)*
Co-efficient of determination	R^2	0.90	0.93	0.86
Adjusted Co-efficient of determination	Adj R^2	0.89	0.92	0.85
F – Ratio	-	88.49	127.00	63.66

Figures in the parenthesis below regression co-efficient are 't' values.

* - Significant at 0.01 level

TABLE 5.11: RELATIONSHIP BETWEEN SIZE AND EARNINGS-REGRESSION RESULTS (STATE BANK OF SAURASHTRA)

(Dependent variable: Ratio of earnings to Volume of Business)

Independent Variable	Regression Co-efficient	Linear	Semi- Logarithmic	Double-Logarithmic
Constant	a	11.57	31.08	2.09
Volume of Business	b_1	-0.0002 (15.75)*	-5.56 (3.32)*	-0.29 (3.08)
Co-efficient of determination	R^2	0.96	0.55	0.51
Adjusted Co-efficient of determination	Adj R^2	0.96	0.50	0.46
F – Ratio	-	247.96	10.99	9.51

Figures in the parenthesis below regression co-efficient are 't' values.

* - Significant at 0.01 level

Source: Computed

TABLE 5.12: RELATIONSHIP BETWEEN SIZE AND EARNINGS-REGRESSION RESULTS (STATE BANK OF TRAVANCORE)

(Dependent variable: Ratio of earnings to Volume of Business)

Independent Variable	Regression Co-efficient	Linear	Semi- Logarithmic	Double-Logarithmic
Constant	a	10.54	35.70	2.42
Volume of Business	b_1	-0.00009 (6.66)*	-6.347 (13.11)*	-0.35 (15.78)*
Co-efficient of determination	R^2	0.81	0.94	0.98
Adjusted Co-efficient of determination	Adj R^2	0.79	0.93	0.96
F – Ratio	-	44.47	171.74	249.15

Figures in the parenthesis below regression co-efficient are't' values.
* - Significant at 0.01 level

TABLE 5.13: RELATIONSHIP BETWEEN SIZE AND EARNINGS-REGRESSION RESULTS (STATE BANK OF BIKANER)

(Dependent variable: Ratio of earnings to Volume of Business)

Independent Variable	Regression Co-efficient	Linear	Semi- Logarithmic	Double-Logarithmic
Constant	a	11.46	36.87	2.44
Volume of Business	b_1	-0.0001 (9.97)*	-6.535 (10.58)*	-3.52 (9.44)*
Co-efficient of determination	R^2	0.90	0.91	0.94
Adjusted Co-efficient of determination	Adj R^2	0.90	0.91	0.89
F – Ratio	-	99.49	112.07	89.25

Figures in the parenthesis below regression co-efficient are 't' values.
* - Significant at 0.01 level

TABLE 5.14: RELATIONSHIP BETWEEN SIZE AND EARNINGS-REGRESSION RESULTS (STATE BANK OF INDORE)

(Dependent variable: Ratio of earnings to Volume of Business)

Independent Variable	Regression Co-efficient	Linear	Semi- Logarithmic	Double-Logarithmic
Constant	a	10.52	27.60	2.04
Volume of Business	b1	-0.0001 (6.29)*	-4.73 (4.05)*	-0.278 (4.01)*
Co-efficient of determination	R^2	0.79	0.62	0.61
Adjusted Co-efficient of determination	Adj R^2	0.77	0.58	0.57
F – Ratio	-	39.64	16.40	16.07

Figures in the parenthesis below regression co-efficient are 't' values.
* - Significant at 0.01 level

Source: Computed

TABLE 5.15: RELATIONSHIP BETWEEN SIZE AND EARNINGS-REGRESSION RESULTS (STATE BANK OF HYDERABAD)

(Dependent variable: Ratio of earnings to Volume of Business)

Independent Variable	Regression Co-efficient	Linear	Semi- Logarithmic	Double-Logarithmic
Constant	a	10.12	33.40	2.29
Volume of Business	b_1	-0.00007 (8.42)*	-5.77 (8.88)*	-0.315 (8.74)*
Co-efficient of determination	R^2	0.87	0.88	0.88
Adjusted Co-efficient of determination	Adj R^2	0.86	0.87	0.87
F – Ratio	-	70.99	78.82	76.27

Figures in the parenthesis below regression co-efficient are 't' values.
* - Significant at 0.01 level

TABLE 5.16: RELATIONSHIP BETWEEN SIZE AND EARNINGS-REGRESSION RESULTS (STATE BANK OF PATIALA)

(Dependent variable: Ratio of earnings to Volume of Business)

Independent Variable	Regression Co-efficient	Linear	Semi- Logarithmic	Double-Logarithmic
Constant	a	8.96	28.01	2.22
Volume of Business	b1	-0.00006 (7.32)*	-4.741 (10.41)*	-0.309 (9.32)*
Co-efficient of determination	R^2	0.84	0.91	0.89
Adjusted Co-efficient of determination	Adj R^2	0.82	0.90	0.88
F – Ratio	-	53.57	108.20	86.72

Figures in the parenthesis below regression co-efficient are 't' values.
* - Significant at 0.01 level

TABLE 5.17: RELATIONSHIP BETWEEN SIZE AND EARNINGS REGRESSION-RESULTS (STATE BANK OF MYSORE)

(Dependent variable: Ratio of earnings to Volume of Business)

Independent Variable	Regression Co-efficient	Linear	Semi- Logarithmic	Double-Logarithmic
Constant	a	10.13	30.64	2.38
Volume of Business	b_1	-0.0001 (6.87)*	-5.46 (3.87)*	-.35 (4.69)*
Co-efficient of determination	R^2	0.82	0.60	0.68
Adjusted Co-efficient of determination	Adj R^2	0.80	0.56	0.65
F – Ratio	-	47.27	14.98	22.07

Figures in the parenthesis below regression co-efficient are 't' values.
* - Significant at 0.01 level

Source: Computed

REQUEST FOR FEEDBACK

Dear Readers

At the very outset, International Journal of Research in Computer Application and Management (IJRCM) acknowledges & appreciates your efforts in showing interest in our present issue under your kind perusal.

I would like to request you to supply your critical comments and suggestions about the material published in this issue as well as on the journal as a whole, on our E-mail **infoijrcm@gmail.com** for further improvements in the interest of research.

If you have any queries please feel free to contact us on our E-mail infoijrcm@gmail.com.

I am sure that your feedback and deliberations would make future issues better – a result of our joint effort.

Looking forward an appropriate consideration.

With sincere regards

Thanking you profoundly

Academically yours

Sd/-

Co-ordinator

ABOUT THE JOURNAL

In this age of Commerce, Economics, Computer, I.T. & Management and cut throat competition, a group of intellectuals felt the need to have some platform, where young and budding managers and academicians could express their views and discuss the problems among their peers. This journal was conceived with this noble intention in view. This journal has been introduced to give an opportunity for expressing refined and innovative ideas in this field. It is our humble endeavour to provide a springboard to the upcoming specialists and give a chance to know about the latest in the sphere of research and knowledge. We have taken a small step and we hope that with the active co-operation of like-minded scholars, we shall be able to serve the society with our humble efforts.

Our Other Journals