

Impact of Service Sector on Indian Economy: With Special Reference to Banking and Insurance Sector

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Abstract: With more than 7% GDP growth rate, India is one of the fastest growing economies in the world and moving fast to become largest economy by 2020. The biggest contributor to the Indian economy is Service Sector with around 65% share in the GDP. Similarly, Banks constitute the most important subsector of the service sector. But underlying the growth of service sector is the industrial activity. Some service sectors are merely the enabler but are not in the main frame. It increases the efficiency and thereby increases the productivity. In this study, the main emphasis is on the impact of the Indian banks on the Indian economy. It also empirically establishes the degree of association between information technologies (IT) and the productivity of the Indian Banks.

Keywords: GDP, Indian economy, NASSCOM, Service sector.

I. INTRODUCTION: OVERVIEW OF SERVICE SECTOR IN INDIA

Service sector is been considered as the backbone for the social and economic development of any country. Amongst the other sectors, service sector is one of the largest and fastest growing sector contributing more to global output (Contribution of service sector for India is more than half GDP), providing more employment opportunities (according to NASSCOM contribution of service sector to employment is 16%), GDP growth, trade and investment. According to Bhattacharya and Mitra (1990), service sector has been a major contributor to India's GDP growth. In spite of this fact majority of people are still trapped in the low productivity agricultural sector.

New economic policy (1991) has positively affected over the expansion of the service sector. In GDP during 1991 share of trade, transportation and communication, business and banking services and community services have shown the increase. However share of banking sector in GDP was reduced in 1991. The reason pointed out behind this was global slowdown.

World over impact of recession in the US market has diversified and its impact can be observed from the very fall in stock market, recession in jobs, availability and companies following downsizing in the existing available staff and cutting down of the peers and salary corrections.

II. CLASSIFICATION OF THE SERVICE SECTOR

Service sectors can be classified into two major categories:

- A. *Directly Contributing to Economy:* Transportation, telecommunication, banking, insurance, communication, trade, storage, travel and tourism, courier services, consultancy services, legal services.
- B. *Indirectly Contributing to Economy:* Many services are the key inputs to all or most other business e.g. infrastructure services such as energy, telecommunication, and transportation, financial services which facilitate transactions and provide access to finance for investment, health and education services which contribute to a healthy, well trained workforce, legal and accountancy services which are a part of the institutional framework required to underpin a healthy market economy.

Hussain (2004) have pointed out that banking system plays an important role in financial sector and accounts for 95% of this sector. According to Jain and Ninan (2010) liberalization and reforms can be considered as one the most important factors contributing to growth of service sector in India. After liberalization banking sector have faced many changes. Earlier there existed only public sector banks but presence of the private sector banks was marked by Narsimhan committee. The banking sector forming a portion of financial sector primarily works as financial intermediary generating money supply. According to banking regulation act of India, 1949 banking sector may be defined as "accepting for purpose of lending or investment of deposits of money from the public, repayable on demand or otherwise and withdrawal by cheques, debt, and order or otherwise".

II. CLASSIFICATION OF BANKS (IN INDIA)

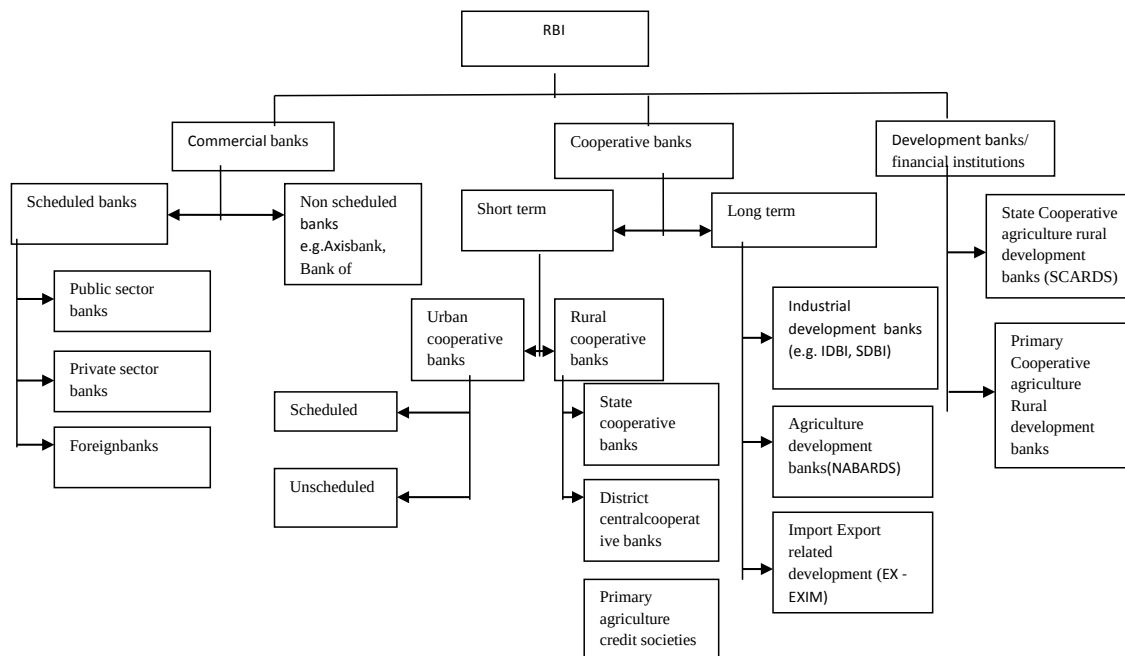


Fig. 1: Classification of Indian banks

IV. FINANCIAL GROWTH OF BANKING SECTOR

The financial growth of banking sector aims to

- Integrity of financial institution.
- Broaden and deepen capital markets.
- Bring technological transformation with providing quality services.
- Reduce technological transformation with providing quality services.
- Reduce the opportunity for corruption by reducing the number of state owned banks.

Main role played by banks in the Indian economy is as follows:

- Provide liquidity and payment services to the real sector and has accounted for the bulk of the financial intermediation process.
- Banking sector has contributed to the process of economic development by serving as a major source of credit to households, government, business and to the wealth sectors of economy.
- 30-40% of the gross house hold savings have been in banks deposits.
- 60% of the assets of all financial institutions accounted for by commercial banks.

The main emphasis in this paper is to determine the effect of the service sectors with primary focus on the banking sector on the Indian economy. The parameters considered to determine the impact of banks on the economy is efficiency change, technological change, pure technical efficiency change and

scale efficiency change. The paper is organised as: section II a brief review of literature is discussed followed by methodology used in section III. Section IV deals with the analysis of the secondary data collected. In the last section conclusions and the recommendations are dealt with.

V. LITERATURE REVIEW

Financial sector is one of the major subsector of the service sector. Large numbers of attempts have been made at different point of time to study the influence of the banking sector on the Indian economy. In the following section contributions of different researchers in both foreign and Indian context are briefly presented.

Researchers like Levine et al. (2000) supports that there exists a casual relation between financial sector development and economic growth implying that the establishment of financial institutions and markets increases the supply of financial services and that leads to economic growth. Levine and Beck et al. (2000) have evaluated upon the role of financial development in motivating economic growth and stated that higher banking sector development implies higher economic growth and total factor productivity growth. Arestis et al. (2001) suggested that banking sector could imply subsequent economic growth.

On the other hand researchers like Harrison et al. (1999) focussed on the fact that high economic growth creates demand for financial instruments and arrangements and the financial markets responds to these demands. Gordan and Gupta (2002) have stated that there are variation in growth and performance of different subsectors of services. Business services (including

IT), communication and trade have grown faster as compared to other service sector growth in India. Sectors such as real estate, legal services, transport, storage and personal administration and defence services have grown at the same rate as the overall services sector growth. Janki (2002) in her study have stated that public sector banks had highest efficiency followed by foreign banks. Private banks were found to be least efficient. Calderon and Liu (2003) in their study have implied that financial development leads to the economic growth in all countries. Further they suggested that financial deepening stimulates economic growth which further leads to the financial development. Harrison et al. (1999) argued that economic growth increases banking activity and profits and promotes the entry of more banks.

Levine and Zervos (1998) in their study have stated that after controlling for economic and political factors, that banking development and stock market growth positively impact future economic growth, capital formulation and enhanced productivity. Levine (2003) stated his findings as: Financial intermediaries and markets matter in that nations with more well developed financial sectors generally grow faster. He further stated that countries with more efficient financial sectors provide firms with expanded access to external capital and growth.

On the other hand Ram Mohan and Ray (2004) have stated that there was no significant difference in productivity growth between public and private sectors. The period of the study was 1992-2000. Rishi and Saxena (2004) further points out that IT improvements reduces cost and thereby improves the efficiency of the Banks. Technology efficiency leads in to lower transaction cost and thereby increased revenues for banks. The operational cost for technology and technology based services is one of the component of operating expenses.

Kochhar et.al. (2006) found that the share of the public sector services including public administration is growing in laggard states while share of private sector services is growing in fast growing states. Another important finding of this study states that productivity, capital and risk taking tend to be determined jointly and that these compensated each other. Das and Ghosh (2006) had examined the relationship among risk, capital and productivity changes in the public sector banks in India (1995/96-2000/01). Their findings state that higher productivity leads to a decrease in credit risk and a positive influence on bank capitalization. Poor performers were more prone to risk taking than organisations which are performing better. According to Leeladhar (2006) by the adoption of IT in Indian banking sector there was increased share and enhanced competitiveness at the global level.

Mittal and Dhingra (2007) in their study have stated that private banks have taken more IT initiative were found to be more efficient in productivity and profitability of Indian banks than public banks. Al-Laham et al. (2009) studied the development of electronic money and its impact on the central bank role and monetary policy. Results implied that e-money, as a network

good, could become an important form of currency in the future. Such a development would influence the effectiveness and implementation of monetary policy. If an increased use of e-money substantially limits demand for central bank reserves, it would require changes in the operational target of the central bank and a closer coordination of monetary and fiscal policies. Bosworth and Maertens (2010) have stated that the growth in service sector has not been commensurate to income growth in the sector. Bhandari (2010) in his study have studied total factor productivity (TFP) in 68 Indian commercial banks between 1998-99 to 2006-07. He has decomposed TFP into technical change, technical efficiency change and scale (efficiency) change. Results of this study states that public sector banks adjusted themselves better to the changing environment as compared to the private and the foreign banks.

Jayaraman et al. (2010) tried to find out the relation between service quality delivery and its impact on customer satisfaction in banking sector in Malaysia.

Hansda (2001) and Joshi (2008) have pointed out that the increase in the export demand of IT has led to high device growth in India. In developing countries like India the service sector can lead to inclusive growth through backward and forward links (Banga 2005), by ensuring equitable access to basic services at low prices (Deloitte 2011), by creating employment opportunities, and by developing human capital. In India there has been a considerable shift from agriculture to service sector. Rajput et al. (2011) through his study have conveyed that all scheduled banks have shown significant improvement in their performance due to adoption of IT.

VI. RESEARCH METHODOLOGY

A. Research Design

The research work is secondary in nature

B. Research Objectives

- To investigate the impact of service sector on the Indian economy.
- To study the impact of banking sector amongst the other service sectors on India's GDP.
- To find out the factors affecting productivity in the Indian banks.
- To analyse the impact of technology change, scale change, efficiency change and pure technical change on the productivity of the Indian banks.

C. Tools Applied for the Study

For data collection: data collected is basically secondary in nature. A detailed literature survey in the area of service sectors was undertaken as the first step of the study. The data collected is tabulated as follows:

TABLE I: SECTORAL GROWTH RATES DURING THE PLANNING PERIOD (PERCENT PER ANNUM) (SOURCE: PLANNING COMMISSION OF INDIA)

Sector	1951-80	1981-90	1991-2000	1992-97	1997-2002	2002-07	2007-2012
Agriculture	2.1	4.4	3.1	4.8	2.5	2.5	3.7
Industry	5.3	6.8	5.8	7.3	4.3	9.3	7.2
Services	4.5	6.6	7.5	7.3	7.9	9.3	9.7
GDP	3.5	5.8	5.8	6.6	5.5	7.8	7.9

TABLE II: DECADAL AVERAGE OF THE YEAR ON YEAR SHARE OF THE DIFFERENT SECTORS IN INDIA'S GDP FOR THE PERIOD 1950-2010 (SRC: ECONOMIC SURVEY 2011-12, PUBLISHED BY GOI)

Sector	1950/51-1959/60	1960/61-1969/70	1970/71-1979/80	1980/81-1989/90	1990/91-2000/01	2000/01-2009/10
Agriculture	55.3	47.6	42.8	37.3	30.9	21.8
Industry	14.8	19.6	21.3	22.3	23.3	24.5
Services	29.8	32.8	35.9	40.3	45.7	53.7

TABLE III: DECADAL AVERAGE OF THE YEAR ON THE YEAR SHARE OF SERVICES SUB-SECTORS IN TOTAL SERVICES SECTOR AND GDP (IN %) (SOURCE: NATIONAL INCOME ACCOUNTS, CSO, MOSPI)

Items	1970/71-1979/80		1980/81-1989/90		1990/91-2000/01		2000/01-2009/10	
	Share in services	Share in GDP	Share in services	Share in GDP	Share in services	Share in GDP	Share in services	Share in GDP
Community, social and personal service	35.1	12.6	33.2	13.4	30.3	13.9	26.1	14.0
Public administration and defence	14.3	5.1	15.2	6.1	13.2	6.2	11.2	6.0
Other services	21.0	7.5	18.0	7.3	16.7	7.6	14.9	8.0
Financing, insurance, real estate and business	20.3	7.3	22.0	8.9	26.2	12.0	27.3	14.7
Banking and insurance	5.9	2.1	7.6	3.1	10.7	4.9	12.0	6.5
Real estate ownership of dwellings and business services	14.3	5.1	14.5	5.8	15.5	7.1	15.3	8.2
Trade, hotels and restaurant	30.2	10.8	29.3	11.8	28.5	13.0	29.4	15.8
Trade	28.0	10.0	27.3	11.0	26.2	12.0	26.7	14.3
HOTELS AND RESTAURENTS	2.1	0.8	2.0	0.8	2.2	1.0	2.6	1.4
Transport, storage and communication	14.5	5.2	15.5	6.2	15.0	6.9	17.3	9.3
Railways	4.5	1.6	3.9	1.6	2.9	1.3	2.1	1.1
Transport by other means	8.3	3.0	9.5	3.8	9.6	4.4	9.8	5.3
Storage	0.3	0.1	0.3	0.1	0.2	0.1	0.1	0.1
Communication	1.6	0.6	1.7	0.7	2.3	1.0	5.3	2.8

TABLE IV: PERCENT SHARE OF SERVICE SUBSECTORS IN EMPLOYMENT (SOURCE: VARIOUS ROUNDS OF NSS DATA ON EMPLOYMENT AND UNEMPLOYMENT)

Year	Trade, hotels and restaurants	Transport, storage and communication	Financing, insurance, real estate and business services	Community, social and personal services
1961	29.24	11.13	1.53	58.10
1971	30.14	14.43	2.84	52.60
1981	31.83	14.66	2.25	51.26
1991	36.10	13.66	2.25	48.00
2001	37.21	15.65	7.56	39.59

2004	39.27	14.47	8.51	37.74
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TABLE V: TOTAL FACTOR PRODUCTIVITY FOR DIFFERENT SECTORS (SOURCE: BOSWORTH AND MAERTENS (2010))

Sector	1980-1990	1990-2000	2000-1006
Total economy	2.2	1.8	2.1
Agriculture (primary sector)	1.9	0.7	0.9
Industry (secondary sector)	1.5	0.6	1.6
Services (tertiary sector)	2.1	3.1	1.9

TABLE VI: DECOMPOSITION OF TOTAL FACTOR PRODUCTIVITY IN INDIAN BANING SECTOR (2005-12) SOURCE: RBI.ORG.IN

Indices					
All Banks	Efficiency change (EC)	Technological change(TC)	Pure technical efficiency change (PTEC)	Scale efficiency change (SEC)	Total factor productivity (TFP)
2005	1.0490	0.9520	0.9950	1.5040	0.9990
2006	1.0230	0.9360	1.0120	1.0110	0.9580
2007	1.0710	0.7830	1.0250	1.0460	0.8390
2008	0.9650	1.0460	0.9720	0.9930	1.0100
2009	0.9470	1.0570	0.9920	0.9550	1.0010
2010	0.7120	1.9040	0.9190	0.7750	1.3550
2011	1.2230	0.7560	1.2060	1.1930	0.9250
2012	1.0140	0.6830	1.0500	0.9660	0.6930

TABLE VII: DECOMPOSITION OF TFP (TOTAL FACTOR PRODUCTIVITY) IN INDIAN BANING SECTOR FOR 2005-12 CATEGORY WISE (SRC: RBI.ORG.IN)

Indices					
	Efficiency change (EC)	Technological change (TC)	Pure technical efficiency change (PTEC)	Scale efficiency change (SEC)	Total factor productivity (TFP)
Public sector Banks					
2005	1.0013	0.9618	1.0028	0.9985	0.9631
2006	1.0238	0.9132	1.0007	1.0230	0.9351
2007	1.0061	0.7539	1.0142	0.9920	0.7588
2008	0.9326	0.9911	0.9420	0.9900	0.9243
2009	0.8941	1.0102	0.9488	0.9422	0.9031
2010	0.6750	1.6252	1.0349	0.6523	1.0970
2011	1.3167	0.6976	0.9683	1.3597	0.9185
2012	1.0370	0.9403	0.9650	1.0748	0.9749
Private sector Banks					
2005	1.0459	1.0250	0.9839	1.0629	1.0720
2006	1.1091	0.9529	1.0695	1.0371	1.0569
2007	1.1747	0.6860	1.0674	1.1005	0.8058
2008	0.9604	1.1563	0.9564	1.0042	1.1105
2009	0.9602	0.9962	1.0257	0.9361	0.9564
2010	0.7121	1.5093	0.9181	0.7756	1.0746
2011	1.2451	0.7650	1.0252	1.2144	0.9524
2012	0.9692	0.7018	1.0208	0.9495	0.6801

Foreign banks					
2005	1.3153	0.8694	0.9951	1.1409	0.9870
2006	0.9428	0.9586	0.9759	0.9658	0.9037
2007	1.0822	0.9492	1.0003	1.8019	1.0271
2008	1.0263	1.0335	1.0405	0.9863	1.0607
2009	1.0240	1.0786	1.0314	0.9929	1.1044
2010	0.8199	1.3727	0.8243	0.9947	1.1256
2011	1.0755	0.8476	1.1055	0.9729	0.9115
2012	0.9972	0.3913	1.1816	0.8441	0.3906

VII. DATA ANALYSIS

Different statistical tools are applied for data collection. Percentage changes and correlation analysis is done for this purpose. Data collected is analysed using SPSS 16.

VIII. RESULTS AND DISCUSSIONS

Table 1 illustrates the sectoral growth rates for agriculture, industry, services sector and of the GDP during planning period 1951 to 2012. It has been clearly observed from the above table that agriculture sector has shown the growth rate of 2.1% during 1951-1980. The steep rise of 1.0955 % was observed during the period 1981-90. But a downfall of 0.393% was witnessed in the agricultural sector during 1991-2000 further followed by an increase of 0.5483% in the year 1992-97. But again during the period 1997-2002 a downfall of .479 % was observed. Year 2002-07 has neither witnessed any rise or fall. Year 2007-12 has experienced an increase by .48%. The data was further extrapolated using the linear trend. The regression line calculated was $y=0.014x+3.224$, where y is the percentage growth rate, x is the time period and 3.224 is the constant. Similar observations have been made in the industrial sector. In the year 1951-80 the percentage growth rate was 5.3%. In the year 1981-90 the growth of further 0.283% was been noticed. Followed was the downfall of 0.147% in the year 1991-2000. Again in the year 1992-97 growth of 0.258% was recorded. For the year 1997-2002 the decline of 0.41096 was observed. Industrial sector witnessed a growth of 1.162% in the year 2002-07. In the year 2007-12 there was no growth rather a fall of 0.22585 % was noticed. The data was further extrapolated by using a linear trend line. The regression line was calculated to be $y=0.328x+5.257$, where y stands for the growth rate in percentage, x is the time period and the value for constant is 5.257. Amongst the agriculture, industry and service sector it is clear from the data that service sector has shown more growth as compared to the other sectors. Service sector has witnessed the growth by 4.5% in the year 1951-80. In the year 1981-90 the growth was further enhanced by 0.4666%. The growth was further increased by 0.136% in the year 1991-2000. A slight decrement of 0.026% was observed in the year 1992-97. But service sector recovered and the growth by 0.082% was further tabulated. There was a decrement in the year 2002-07

by 0.17722. The value was further increased by 0.04301. The linear trend line was calculated to be $y=0.764x+4.485$ where y is the growth rate in percentage, x is the time period and the value of the constant is 4.485. The same facts and figures were even supported in one of the article reported in the hindu(<http://www.thehindu.com/business/budget/india-has-second-fastest-growing-services-sector/article6193500.ece>) stating that India has the second fastest growing service sector with its compound annual growth rate at 9% during the time period 2001 to 2012. It further pointed that the growth of services sector GDP has been higher than that of the overall GDP between the financial year 2001-2014. Indeed the service sector constitutes the major portion of the India's GDP with a 57% share at a factor cost in 2013-14.

Same findings are further supported in Table 2 depicting the decadal average of the year on year share of the different sectors in India's GDP (1950-2010). From Fig. 2 it is clear that for agriculture sector the downward trend has been there. The linear trend calculated for the same has come out to be $y=-0.637x+61.59$ where y is the decadal average, x is the time period and 61.59 is the constant. For industrial sector growth has been observed. The trend regression line calculated comes out to be $y=1.731x+14.90$. Again here y stands for the decadal growth, x is the time period and 14.90 is the constant value. The trend line calculated for the service sector is $y=4.645x+23.44$. If we assume regression line to be $y=ax+b$ where y is the dependent variable, x is the independent variable, a and b are the constant values then from the above calculated trend lines it can be easily illustrated that service sector ($a=4.645$, $b=23.44$) has shown the tremendous growth and there by contribution on the India's GDP as compared to the industrial sector ($a=1.731$, $b=14.90$). On the other end agricultural sector has depicted the negative growth rate ($a=-.637$ and $b=61.57$).

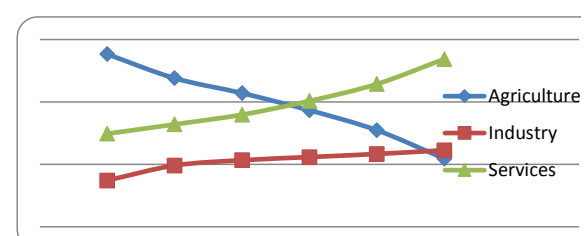


Fig. 2: Trend lines for share of different sectors on the economy

Table 3 talks about the decadal average of the year on year share of the service subsectors in the total services sector and GDP in percentage for the time band 1970/71 to 2009/10. From the given data it can be clearly seen that the share in services and share in GDP for the financing, insurance, real estate and business has shown a continuous increase. When banking and insurance sector is compared to the real estate ownership of dwellings and business services it can be seen that the banking sector has greater share as compared to the real estate.

Table 4 depicts the percent shares of employment in the services subsectors. For trade, hotels and restaurants service sector mean rate of the percent employment is 33.965. Standard deviation is 3.569 and the median is 33.965. It has been observed that this sector provided employment of 29.24%. This was increased to 30.14% in 1971. Further in 1981 it was observed to be 31.83. In 1991 the employment rate further increased to 36.1%. 2001 the rate was observed to be 37.21. In 2004, 39.27% was the employment rate. Further the observed data was extrapolated using time series in excel sheet. The regression line which was best fitted was $y=0.236x-435.8$, x is the independent variable i.e the time period and y is the dependent variable i.e. percentage rate of employment. In transport, storage and communication sector mean is 14, standard deviation is 1.7067. Median of the observed data is 14.45. From the table it is clearly observed that percentage employment in the year 1961 was 11.13. In the year 1971 the employment rate gradually increased to 14.43. In the year 1981 there was a slight increase of only 0.33. In the year 1991 the employment rate has shown a slight decrease of 1% which was further increased to 15.65% in the year 2001. Further there was a decrement to 14.47%. The best fitted linear regression line was calculated to be $y=0.064x-114.8$. In financing, insurance, real estate and business services mean of the data collected is 4.15, standard deviation is 2.4339 and the median noticed is 2.545. Further from the table it is depicted that finance sector provided only 1.53% followed by a slight increase to 2.84% in the year 1971. In 1981 the employment provided was reduced to 2.25%. In the year 1991 the employment rate was stagnant to 2.25%. In the year 2001 there was a steep rise and the employment rate was 7.56%. Further in 2004 the employment rate was up to 8.51%. The regression line which was best fitted was calculated to be $y=0.149x-291.7$. For community, social and personal services observed mean was 47.88. Standard deviation was 7.87 and the median is 49.63. In the year this sector provided 58.1% employment. In the year 1971 it fell to 52.6. In the year 1981 the employment rate was 51.26%. Which was further lowered to 48% in the year 1991. In the year 2004 it was 37.74%. The linear regression line which was best fitted in to this data was calculated to be $y=-.450x+942.5$. It can be summed up financing, insurance, real estate and business services; transport, storage and communication sector; trade, hotels and restaurants have shown an increasing trend where as community, social and personal services have shown a downfall. A report in times of India stated that that services share in world GDP was 65.9% but its share in employment was only 44% in 2012. (<http://timesofindia.indiatimes.com/budget-2015/>

economic-survey-2015/Economic-Survey-India-has-second-fastest-growing-services-sector/articleshow/38086352.cms)

Table 5 shows the decomposition of total productivity in Indian banking sector. For the given data percentage change for efficiency change, technology change, pure technical efficiency, scale efficiency change and total productivity factor. For efficiency change it has been found that in the year 2006 the value was decreased by 0.247%. A slight increase of 0.0469 was calculated in the year 2007. Further in the year 2008 there was a decrement of 0.0989% which was further reduced by 0.01865% in the year 2009. In 2010 a reduction of 0.248 was calculated. It was observed that in the year 2011 an increment of 0.417 was noticed. It was further decreased by 0.17% in the year 2012. For technology change for the year 2006 the percentage value was reduced by 0.0168 in comparison to the year 2005. In the year 2007 there was further a decrement of 0.1634%. In 2008 the percentage value was increased by 0.3358. A slight increase of 0.0105 was noticed in the year 2009. Again in the year an increment of 0.80132 was noticed. Further in the year decrement of .6029% was noticed. Reduction of 0.1708 was further noticed in the year 2012. In case of pure technical efficiency the positive percentage change of 0.01708 was calculated for the year 2006. Again in the year 2007 an increment of 0.0128 was noticed followed by the slight decrement of 0.517% in the year 2008. For the year 2009 an increment of 0.0205 was calculated as compared to the year 2008. For 2010 the percentage change in technology was reduced by 0.0794 followed by a increase of 0.3122%. Further in the year 2012 the value was further reduced by 0.129%. For scale efficiency a slight decrement of 0.00032 was observed for the year 2006. The value was increased by 0.346% in the year 2007. Again a decrement of 0.050% was noticed in the year 2008. In the year 2009 the value was further reduced by 0.038%. In the year 2010 the value was further reduced by 0.1884%. But in the year 2011 an increment of 0.5393% was calculated. In the year 2012 the percentage change in the scale efficiency change was further reduced by 0.1902. Finally percentage changes in total productivity were calculated. The values have shown a decrement of 0.041% and 0.124% in the year 2006 and 2007 respectively. An increase of 0.2038% was recorded in the year 2008 followed by further decrease of 0.0089% in the year 2009. The total productivity factor further increased by 0.3536% in the year 2009 followed by decrement of 0.3173% in the consecutive year. Furthermore a decrement by 0.2508% was calculated in the year 2012. Further correlation coefficient was calculated to estimate that weather the parameters efficiency change, technology change, pure technical efficiency and scale efficiency change are positively or negatively related with total factor productivity. It has been found from the analysis of the collected data that value of the correlation coefficients are -0.718, 0.944, -0.5389 and -0.238 respectively for efficiency change, technology change, pure efficiency change and scale efficiency change. This indicates that only total productivity factor is positively related only to technology change stating that technological change is enhancing the core banking value, revamping the digital

agenda. Moreover Banks are moving to electronic modes of payment rather than the cash there by dealing with a changing risk regime. Technological change mars its presence in terms of internet banking, business intelligence, customer management, risk management and information security, technology in training and e-learning, financial inclusion, mobile banking and in payment systems.

In Table 6 the data on total factor productivity for private sector Banks, public sector Banks and foreign Banks is been tabulated. Firstly talking about public sector Banks. It has been observed that there was an increase of 0.0224% in the year 2006 as compared to the year 2005. The decrement of 0.172%, 0.073%, 0.0412%, 0.245% was seen in the consecutive years 2007, 2008, 2009 and 2010 respectively. An increase of 0.95066% was seen in the year 2011 followed by the decrease of 0.2131% in the year 2012. The correlation coefficient of efficiency change to total productivity was -0.4586. In private sector Banks the percentage change in efficiency change in the year 2006 is observed to be 0.0604% as compared to year 2005. Similarly in the year 2007 the percentage change was observed to be 0.0591%. In the year 2008 the decrement of .1824 was shown further followed by the decrement of 0.00020 in the next consecutive year. In the year 2010 the percentage change was further decreased by .258. In the year 2011 slight increment of .7484% was reported. In the year 2012 the decrement of 0.2215 was noted. Again the coefficient of correlation between efficiency change in the private sector banks and the total productivity factor was -0.01088. In case of foreign banks it was observed that in the year 2006 the value of the percentage change was decreased by 0.2832%. Again in the year 2007 the percentage increase of 0.1478 was noticed. A fall of 0.05165% was noticed in the year 2008. Value was further reduced slightly by .00225 in the year 2009. In the year 2010 again the fall of 0.19931 was noticed. Further in the year 2012 the percentage change in efficiency was calculated to be 0.0728%. The correlation coefficient calculated came out to be -0.0108.

For pure technical efficiency change in private sector banks the percentage change was calculated to be 0.00418 % and 0.0134% respectively for the year 2006 and 2007 respectively. In the year 2008 the value of the percentage change was reduced by 0.0711% followed by the slight increment of 0.0072 in the year 2009. The value of the percentage increase was further by 0.0907% in the year 2010. In 2011 the percentage change in pure efficiency change was reduced by 0.0643%. In 2012 the value was further reduced by 0.003%. The coefficient of correlation between pure technical efficiency and total productivity factor was calculated to be 0.2083 indicating that in public banks with the increase in the pure technical efficiency change the total factor productivity also increases. In case of private sector banks the mixed type of observations were noted. It was found out that in the year 2006 the percentage change of 0.087% was noticed as compared to the year 2005. In the year 2007 again the value was reduced by 0.00196. A reduction of 0.1039% was further noticed in the year 2008. The positive percentage change of 0.0724 was noticed in the year 2009

followed by the reduction by 0.1049% in the value in the year 2010. In the year 2011 the percentage change of 0.1166 was observed followed by the slight decrease of 0.0042% in the year 2012. The correlation coefficient calculated was -0.4983. For foreign Banks a decrement of 0.0192 was observed followed by the increment of 0.02500 and 0.04018% in the years 2006, 2007 and 2008 respectively. The values were further reduced by 0.0087% and 0.20079% in the year 2009 and 2010 respectively. The values were further increased by 0.3411 and 0.0688% in the year 2011 and 2012 respectively. The correlation coefficient was calculated to be -0.7269. The overall analysis under the pyre scale efficiency change illustrates that only public sector Banks have positive correlation with the total factor productivity. In case of technical change for private Banks the percentage change of 0.2247 was observed in 2006 as compared to year 2005. In 2007 the value has decreased by 0.017. The percentage change was further reduced by 0.0730, 0.0412, 0.2450 respectively in the year 2008, 2009 and 2010. In the year 2011 an increment of 0.9506 was noticed followed by the decrement of 0.2131. The correlation coefficient between technical change and total factor productivity is calculated as -0.4586. In a study conducted by the PwC it was pointed out that technological advances was the most popular choice among the executives is one of the global trends that will disrupt banking in the next five years. (<http://www.banktech.com/management-strategies/report-technology-will-be-the-biggest-driver-of-change-in-banking/d/d-id/1296914?>).

The private sector Banks the observations made are discussed as follows: in the year 2006 the percentage change in efficiency was noticed to be 0.0604% as compared to the year 2005. Again a slight increment of 0.0591% was observed in the year 2007. But decrement 0.1824, 0.00002, 0.2583 was noticed in the year 2008, 2009 and 2010 respectively again the year 2011 was marred with the increment in the percentage value by 0.7484. A fall of 0.22158 was noticed in the year 2012. The correlation coefficient between the technology change and total factor productivity was -0.2535. Foreign Banks have also shown a similar trend. The percentage change in the year 2006 was 0.2832. In the year the value has increased by 0.1478. The values have further decreased by 0.05165, 0.0022, 0.1993 in the years 2007, 2008 and 2009 respectively. Year 2011 marked the increase of 0.3117% followed by the decrement in the value by 0.0728 in the year 2012. The correlation coefficient between percentage technology change and total factor productivity was calculated to be -0.01088.

If we talk in the terms of the scale efficiency change public sector Banks have shown the percentage change as 0.0245, -.0303, -.0020, 0.04828, -.3076, 1.0844, -0.2095 in the year 2006, 2007, 2008, 2009, 2010, 2011 respectively. The correlation coefficient was calculated as -0.444. For private sector Banks the percentage change in scale efficiency was calculated as -0.0242, 0.0611, -0.0875, -0.0678, -0.1714, 0.5657 and -0.2181 respectively for the years 2006, 2007, 2008, 2009, 2010, 2011 and 2012 respectively. The correlation coefficient was -0.1276. In case of foreign Banks the calculations for the

percentage scale efficiency change for the years 2006, 2007, 2008, 2009, 2010, 2011 and 2012 are -.16136, 0.8657, -0.452, 0.00669, 0.00181, -0.219, -0.1323 respectively. The correlation coefficient is 0.3256.

IX. CONCLUSION AND RECOMMENDATIONS

Service sector promises to be the one which provides services which one needs. It has been clearly seen in the above paper that the service sector is one of the fastest growing sector which provides an edge to the Indian economy by contributing nearly 50% in GDP, GDP growth, trade and FDI inflows. But underlying the growth of service sector is the industrial activity. Some service sectors are merely the enabler but are not in the main frame. It increases the efficiency and thereby increases the productivity. The present paper confirms that services sector have grown at the significant rate in comparison to other sectors. The employment percentage in services sector as well as in industry sector is rising as compared to the agriculture sector where it is continuously falling. But still the large portion of the Indian population is engaged in agriculture. But the next largest employer is service sector are trade, hotels and restaurants and community, social and personal services subsectors leads the queue. Thus it can be said that the service sector is dominant in terms of its growth and share serves. Parallely it can be seen that increase in employment in services has not been commensurate to share of sector in the GDP. Majority of the people employed in the service sectors are concentrated in the unorganised sector, which offers lower salary and limited job security. Therefore quality of employment in this sector is a cause of great concern. Moreover India's service sector growth and export of services is still lower.

Banks constitute the most important subsector of the service sector. In this study conducted, the main emphasis was on the impact of the Indian banks on the Indian economy. Looking at efficiency from either the cost minimization or revenue maximization perspective fails to capture the goal of banks to maximize profits by raising revenues as well as reducing costs and does not account well for unmeasured changes in output quality (Berger & Mester, 1997). Banks today are facing rapid and irreversible changes across technology, customer behaviour and regulation (such as new payment banks). The net effect is that the industry's current shape and operating models are not longer sustainable into the future. The combined power of these three drivers of industry change – technology, customers and regulation – is increased by the fact that they are often closely interwoven. For example, technological change creates new categories of customer utility, which in turn fuel further technological investment. Similarly, regulatory changes prompt both service and structural innovations, which together change the nature of the activities or entities that need regulating. And all the while, shifting attitudes and expectations are redefining the reality and perceptions of the industry's role and purpose in society.

From the study conducted it can be concluded that impact of information technology on the productivity of the Indian Banks

was analysed by estimating the correlation coefficients. The results concluded that amongst the other factors considered the technological change has positively influenced the productivity of the Indian Banks. The average annual productivity growth rate in the year 2008-10 was 11%. This was accounted mainly due to the 28% of the technology change in during that time band.

X. EXISTING LACUNAS / FUTURE SCOPE

- Lack of policies and regulations.
- Heterogeneity of the sector.
- Multiple governing bodies.
- Lack of coordination among the governing bodies.
- Inefficient tax systems.
- Lack of supporting environment for the growth.

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