

Impact of Technology on Productivity of Public and Private Sector Banks in India

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Abstract: The paper examines the impact of technology on productivity of public and private sector banks in India. The paper uses secondary data from annual reports of two private and public sector banks. Banks with largest market capitalization; SBI, PNB, HDFC and ICICI were selected for the study. Fourteen years data from 2004 to 2017 was analysed through paired t test. Profit per employee significantly improved for ICICI, SBI and HDFC bank. Business per employee improved significantly for ICICI, PNB and SBI. Technology has improved the productivity of public sector banks more than private sector banks.

Keywords: Productivity, Technology, Public, Private, Profit per Employee, Business per Employee

Introduction:

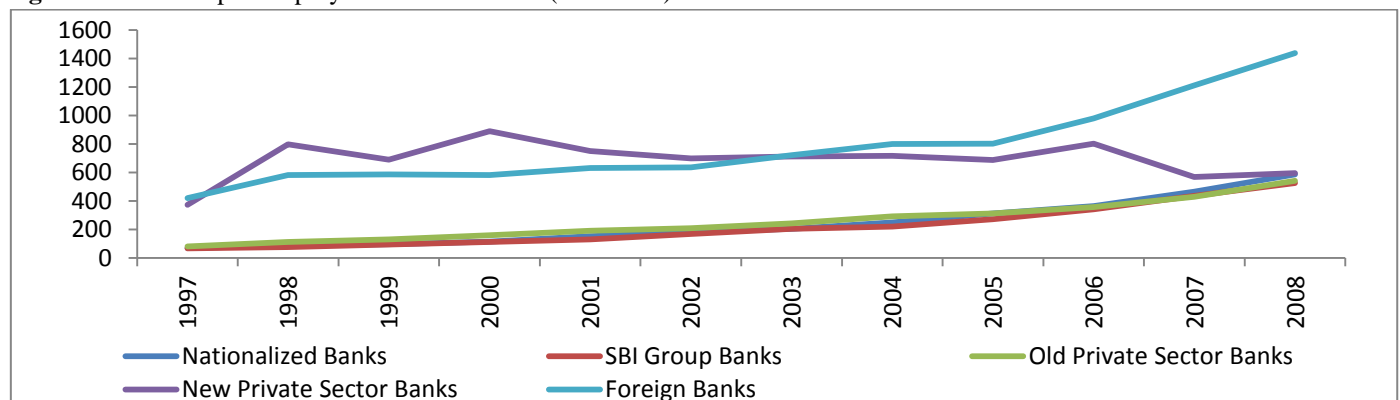
The economic reform in 1990's led by a wave of liberalization, privatization and globalization created a new breed of new private banks referred to as new generation private banks. These banks relied on latest technology to deliver better services to customers. The banks in operation before 1991 fall into the category of old generation private sector banks, working with a traditional style. The private banks established after 1991 are categorized as new generation private sector banks. The new generation banks were characterized by use of latest technology and got the identity of tech savvy banks among customers, whereas old generation banks had a traditional style of working (Agarwal, 2013). During the evolution of Indian banking, new generation banks acquired some of the old generation banks. The new generation banks also attracted good talent by paying compensation much beyond the traditional public

sector banks. Culture of new generation banks also differed from the old generation banks (Choudhary, 2012).

Technology provided the new generation banks to perform better than established public sector and old generation banks, though the traditional banks have also started improving the technology adopting to improve productivity and profitability.

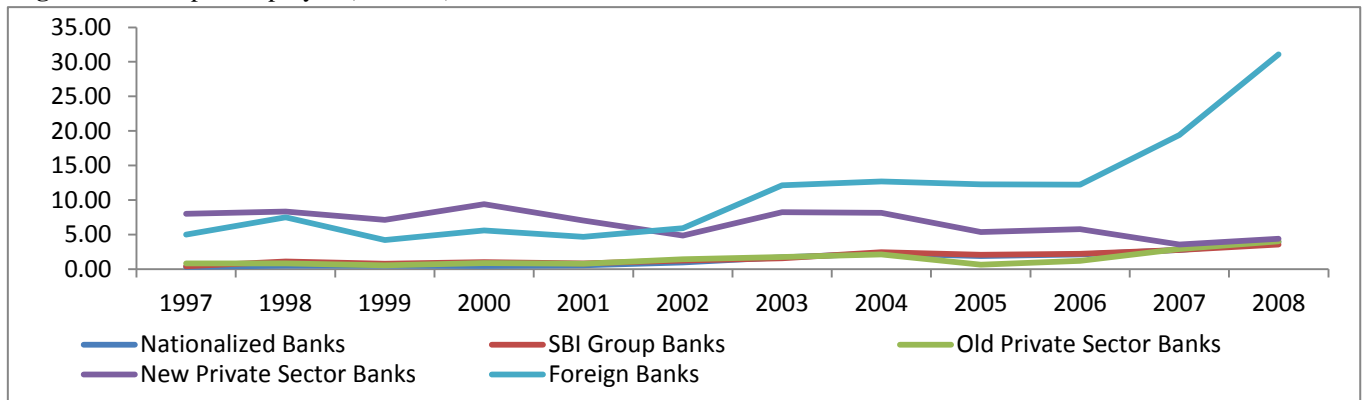
Only nine public sector banks were found to have profit per employee (PPE) more than industry average in 2011-12 (Ramkumar, 2012). Kumar and Sreeramulu studied the productivity of employee and cost of banks in India in the period 1997 to 2008. It was found that the performance of new private sector banks and foreign banks was better than old private banks and public sector banks, but the gap between them has shown a declining trend. In the period from 2005 to 2008 traditional banks have done better than modern banks in employee cost to business.

Figure 1: Business per Employee in Indian Banks (Rs Crores)



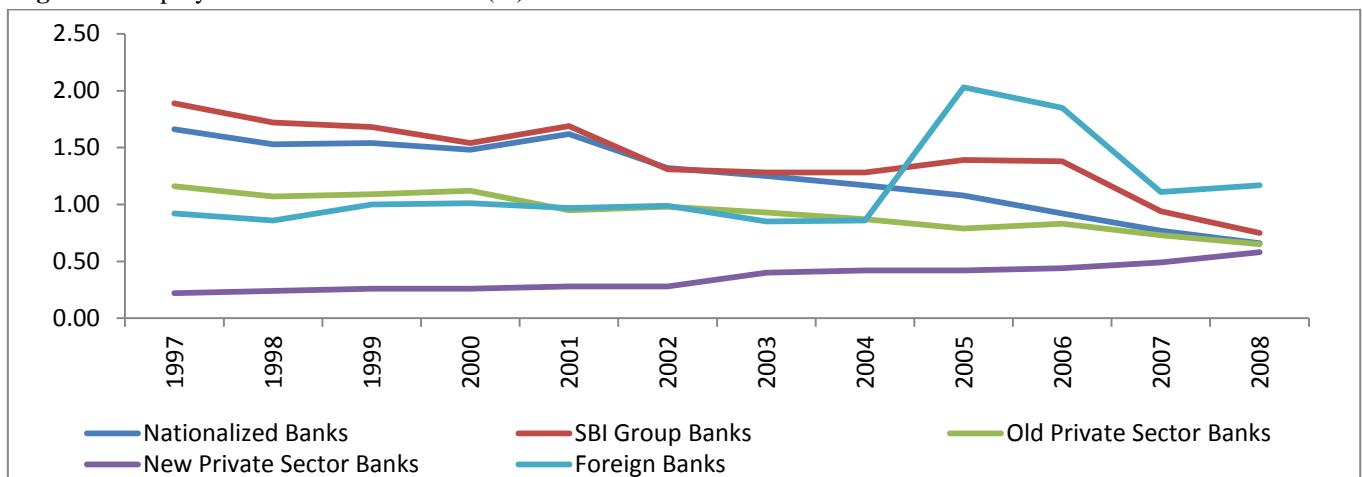
Source: Kumar and Sreeramulu, Reserve Bank of India, 2007

Figure 2: Profit per Employee (Rs Lakh)



Source: Kumar and Sreeramulu, Reserve Bank of India, 2007

Figure 3: Employee Cost to Total Business (%)



Source: Kumar and Sreeramulu, Reserve Bank of India, 2007

Objective:

To analyse the impact of technology on productivity of private and public sector banks in India

Literature Review:

Gupta and Sikarwar (2013) compared growth analysis of PNB and HDFC bank. Ten years data from 2000 to 2010 was considered for the study. HDFC bank was found to have done better than PNB.

Saini (2014) analysed profitability and productivity of commercial banks in India. The study was done on SBI, PNB, ICICI, and HDFC bank. It was found that a significant difference exist between profitability of public and private sector banks, but no significant difference was found in productivity of public and private sector banks. All banks have shown improvement in productivity.

Mohapatra, Lenka, Pradhan (2015) analysed efficiency of banks of public sector banks. It was found that efficiency of employee and internal management of foreign banks were better than commercial banks.

Yadav and Garima (2015) analysed productivity of different type of banks in India. It was found that scheduled commercial banks had shown increase in profit per employee by 50.91% from 2008-09 to 2012-13, whereas new private sector banks increased by 100%, foreign banks

(79.53%), old private sector banks by 59.57%, SBI group by 36.36% and nationalized banks by 32.65%. Business per employee was lowest in case of SBI group.

Thangam and Thoushifa (2016) examined productivity of private sector, public sector and foreign banks in India. It was found that net profit per branch is low in public sector banks. Bank of America had the highest productivity in foreign banks, ICICI had highest productivity among private sector, Bank of Baroda had the highest pet profit per employee among public sector banks. Bank of America had the highest branch productivity and labor productivity.

Poonam and Gupta (2017) examined productivity of leading private and public sector banks in India. Four banks were used for the study. ICICI, HDFC, SBI and PNB were compared for productivity. Five years data from 2013 to 2017 was used for the study. HDFC bank had highest business per branch. Business per employee was higher in public sector banks as compared to private sector banks. ICICI and HDFC bank had lowest cost to income ratio as compared to SBI and PNB.

Research Methodology:

The study had used a descriptive research design. Secondary data was obtained from annual reports of banks and from reports of Reserve Bank of India. Fourteen years data from

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2004 to 2017 was considered. Productivity was measured by profit per employee and business per employee.

Table 1: Market Capitalisation of Banks

Name of Bank	Market Capitalisation* (Rs. Crore)
SBI	1,16,865.45
PNB	12,966.77
HDFC	3,81,012.69
ICICI	2,00,710.45

*as on 27th December 2017

Source: National Stock Exchange, 2017

Paired t test was used by dividing the time period into two equal periods (2004 to 2010 and 2011 to 2017) of seven years. Two banks each from public sector and private sector were considered for the study. ICICI and HDFC bank were from private sector and SBI and PNB were the public sector banks.

Findings:

The productivity of banks was compared using paired t test for profit per employee and business per employee.

Table 2: Paired T Test for Profit per Employee

	Mean Upto 2010 (Rs. Lakh)	SD	Mean After 2010 (Rs. Lakh)	SD	t value	Sig
ICICI Bank	10.71	2.08	13.00	1.12	2.03	0.089
HDFC Bank	6.69	3.29	11.21	1.92	2.43	0.051
SBI	3.04	0.86	5.18	1.23	3.86	0.008
PNB	3.72	2.33	5.94	2.01	1.39	0.214

Source: Computed from Annual Reports of Banks

The mean profit per employee of ICICI bank had increased from 10.71 lakhs in period upto 2010 to Rs. 13 lakhs after period from 2010, HDFC bank had increased from Rs. 6.69 lakh to Rs. 11.21 lakhs, Punjab National Bank (PNB) had increased from Rs. 3.72 lakhs to Rs. 5.94 Lakhs, but all the productivity increase was not significant, Only in case of SBI, there was a significant increase of profit per employee from Rs. 3.04 lakh to Rs. 5.18. The P value for SBI was obtained as 0.008 (<0.05).

Table 3: Paired T Test for Business per Employee

	Mean Upto 2010 (Rs. Crore)	SD	Mean After 2010(Rs. Crore)	SD	t value	Sig
ICICI Bank	9.64	1.13	8.13	1.25	-2.328	0.059
HDFC Bank	6.54	2.33	9.05	1.58	1.749	0.131

SBI	5.23	3.32	11.11	1.85	10.009	0.000
PNB	4.59	1.40	12.35	2.12	23.121	0.000

Source: Computed from Annual Reports of Banks

Private bank had a nonsignificant impact of technology on business per employee, as P value was more than 0.05. ICICI bank had shown decrease in average business per employee from Rs. 9.64 crore in period upto 2010 to Rs. 8.13 crore in the period after 2010. Both public sector banks had shown a significant improvement in business per employee (P<0.05). SBI had shown increase in business per employee from Rs. 5.23 crore to Rs. 11.11 crore, PNB had shown increase in business per employee from Rs. 4.59 crore to Rs. 12.35 crore. It is inferred that public sector banks had shown significant increase in productivity after 2010.

It is inferred that technology has improved productivity of public sector banks more than private sector banks.

Conclusion:

Profit per employee had significantly improved for ICICI bank, HDFC Bank, SBI, whereas a significant improvement in business per employee was witnessed for ICICI, SBI, and PNB. ICICI had shown highest profit per employee post 2010 with Rs. 13 lakh per employee. PNB had the highest business per employee with a business of Rs. 12.35 crore per employee. It was found that technology has improved productivity of public sector banks more than private sector banks

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