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# PERFORMANCE AFFECTING FACTORS OF INDIAN BANKING SECTOR: AN EMPIRICAL ANALYSIS

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**Abstract**

There are several variables which can be used to assess the performance of banking sectors and its affecting factors as well as. Therefore, this study examines the performance affecting factors of selected 18 – public sector, 13 – private sector and 16 – foreign sector banks in India using panel data during 2005 – 2020. Return on assets and return on equity are used as proxy variables for measurement of bank's performance and dependent variables in this study. Accordingly, capital adequacy ratio, net profit, return on investment adjusted to cost of funds, return on advances adjusted to cost of funds, return on investment, investment - deposit ratio, credit - deposit ratio, cash - deposit ratio, total of borrowings and profit per employee are considered as independent variables. Log-linear regression model is used to assess the regression coefficients of aforementioned variables with return on assets and return on equity. The empirical results based on panel corrected standard estimation model enforce that return on assets and return on equity are significantly associated with net profit, return on advances adjusted to cost of funds, ratio of cash deposit ratio, total borrowing and profit per employee. Hence, these variables are seemed most influencing factors of bank's performance of Indian banking sector.

**Keywords:** India; Banking sector; profitability; performance; Efficiency; Return on assets; Return on equity.

## 1. Introduction

Banking sector has a significant contribution to increase the socio-economic development of a nation in several dimensional such as provide loans to common people, industries, start-ups and farmers (Ranajee, 2018; Jyoti and Singh, 2020; Alam et al., 2021). Banking industry also have a greater contribution to boost the industrial

development (Singh and Jyoti, 2020). In India, banking industry is oldest and has a significant contribution in socio-economic development of people (Goyal et al., 2019). Government of India did nationalize 14 large commercial banks in 1969 and 6 banks were nationalized in 1980 (Goyal et al., 2019). The involvement of private and foreign players is increased in this sector after liberalization and globalization which is also known as new economic policy 1991 (Goyal et al., 2019). Banking industry is divided in three categories i.e., public sector, private sector and foreign sector banks (Bhattacharyya and Pal, 2013). Indian banking industry has become the fifth largest industry at global level and it is expected that Indian banking sector will be 3rd largest industry in the world by 2025 (Goyal et al., 2019).

Banking industry is facing several problems due to competition in banking sector, technological change, increasing non-performing assets, rising customer's expectation, increasing demand of profitability and others (Ranajee, 2018; Goyal et al., 2019; Singh et al., 2019). Therefore, it is necessary to measure the performance of banking sector in order to make Indian banking industry globally competitive and to increase its contribution in Indian economy. As measurement of performance of banking sector in an attractive area for researchers due to several reasons such as rinsing non-performance assets of public sector banks, rising competition, increasing work burden on employee, huge competition in financial market and others (Bhattacharyya and Pal, 2011; Madan and Bajwa (2016)). In India, prior researchers have focused to estimate the efficiency and performance of government owned, private and foreign sector banks in different aspects (Bhattacharyya and Pal, 2013). Therefore, this study addressed following research questions:

- What types of variables can be used to assess the bank's performance?
- How financial activities have a significant impact on bank's performance?

Following research objectives are achieved in this study:

- To provide theoretical review on bank's performance affecting factors in India.
- To assess the bank's performance affecting factors in India.

## 2. Theoretical Review on Bank's Performance Affecting Factors in India

As per literature review, performance of a bank can be measured several sets of inputs and output variables (Refer to Table 1) (Bhattacharyya and Pal, 2013; Roy, 2014; Ranajee, 2018). Productivity, efficiency, profitability and competencies are the few measures which might be helpful to examine the performance of banking sector (Ranajee, 2018; Alam et al., 2021). Productivity is ratio of output with inputs in a bank.

Productivity is a monetary term which assess the financial performance of banking industry. Profitability of bank can be measured through return on assts (Alam et al., 2021). A bank can be considered as inefficient if it is unable to produce maximum output as using available resources (or inputs) (Bhattacharyya and Pal, 2013). Previous studies have measured the technical efficient in order to estimate the performance of banking sector using Data Envelopment Analysis (DEA) and Stochastic Frontier Production Function Approach (SFPFA) (Bhattacharyya and Pal, 2013). For instance, Kalakkar (2012) also assessed the performance of banking industry in India. Furthermore, several studies have estimated the performance of banking sector in India using different proxy variables like return on investment, return on assets, return on equity, net profit, business per employee, etc. For instance, Bhattacharyya and Pal (2013) have examined the technical efficiency of commercial banks during 1980 – 2009 using a stochastic production frontier approach. This study follows the intermediary approach to examine the technical efficiency of banks. This study is used technical efficiency as a proxy variable to measure the performance of commercial bank in India. The study provides an evidence that capital adequacy ratio has a negative impact on efficiency of commercial banks in India. Madan and Bajwa (2016) have examined the employee job performance in Indian banking sector.

Furthermore, most studies have assessed the performance of banking sector through profitability of banking sectors. For instance, Bansal et al. (2018) have examined the determinants of profitability of Indian banks. This study used net profit margin and return on assets as dependent variables, and specific set of independent variables. Ranajee (2018) have examined the profitability of commercial banks in India. This study is used return on assets and return of equity as profitability measures of commercial banks. It reported that profitability of banks is significantly associated with equity capital, operational efficiency, ratio of banking sector deposits to gross domestic product. While, credit risk, cost of funds, non-performing assets, consumer price index inflation have the negative impact on profitability of commercial bank in India. Goyal et al. (2019) measured the intra-sector efficiency of Indian banking sector using a meta-frontier DEA approach. It reported that Indian banking sector has 73.44% efficiency. Hence, there is huge scope to increase the efficiency and performance of banking industry in India. Al-Homaidi et al. (2018) have examined the impact of different financial indicators on profitability of commercial bank in India. It reported that bank size, assets quality, capital adequacy rate, liquidity, operating efficiency, deposits, leverage, assets management, number of branches, GDP, inflation rate, interest rate and exchange rate have the significant impact on profitability of commercial bank in India. Almaqtari et al. (2019) have examined the profitability affecting factors of commercial bank in India. It reported that return on assets is significantly associated with bank size, number of branches, assets management ratio and

operating efficiency in Indian commercial banks. Alam et al. (2021) have investigated the association between bank's performance and economic growth in India using a panel data analysis during 2009 – 2019. It reported that interest margin and return on assets have significant impact on economic growth. The list few studies which have used different indicator for measurement of bank's performance and its determinants in given in Table 2.

**Table 1:** List of input and output variables

| **Input variables** | **Output variables** | **Country** | **Reference** |
|---|---|---|---|
| Number of employees, equity capital and deposits | Advances, investments and non-interest income | India | Deb (2019) |
| Operating expenses, number of employees, fixed assets | Net interest income, non-interest income | India | Roy (2014) |
| Bank size, bank ownership, equity capital to total assets, credit risk, NPA ratio, cost of funds operating efficiency, priority sector lending to total assets, labour productivity, ratio of total bank deposits to GDP, ratio of stock market capitalization to the GDP, growth of inflation and GDP growth | Return on assets and Return on equity | India | Bhattacharyya and Pal, 2013 |
| Total loanable funds, personnel and operating charges, physical capital | Net interest income and non-interest income | India | Goyal et al., 2019 |

**Table 2:** Summary of the Bank's Performance Affecting Factors

| Proxy variables for Bank's Performance | Bank's Performance Affecting Factors | **Reference** |
|---|---|---|
| Interest margin return on assets, investment and lending capacity | GDP growth rate | Alam et al., 2021 |

| | | |
|---|---|---|
| Return on assets, return of capital, income growth rate and profit per employee | GDP growth rate | Kalakkar (2012) |
| Return of assets, return on equity, net interest margin, | Bank size, assets quality, capital adequacy rate, liquidity, operating efficiency, deposits, leverage, assets management, number of branches, GDP, inflation rate, interest rate and exchange rate | Al-Homaidi et al., 2018 |

## 3. Research Methods and Materials

### 3.1. Selection of Banks and Data Sources

This study includes 47 commercial banks of India which comprises 18 – public sector, 13 – private sector and 16 – foreign sector banks. The required data on essential indicators of banking sector is derived from official website of Reserve Bank of India (Government of India). This study compiles dependent and independent variables in panel data during 2005 – 2020.

### 3.2. Empirical Model for Measurement of Bank's Performance Affecting Factors

Previous studied have used different indicators to examine the performance of banking sector in India. For instance, Gupta et al. (2008) have highlighted the role of net profits to total assets, net NPA to total assets and business per employees in order to examine the bank's performance in India. Singh and Gupta (2013) claimed that profits and cost X-efficiency are two main methods to estimate the performance of banking sectors. Ranajee (2018) have used return on assets and return on equity to assess the performance of commercial bank in India. Goyal et al. (2019) have used net interest income and non-interest income as output to examine the efficiency or performance of commercial banks in India. Alam et al. (2021) have used interest marginal return on assets, bank investment and lending capacity to assess the performance of public sector banks in India. Kalakkar (2012) also used regression model to examine the performance of banking industry in India. It used return on assets, return of capital, income growth rate and profit per employee as proxy variables for bank's performance, and examined the impact of these variables on annual GDP growth in Indian scheduled commercial banks. Al-Homaidi et al. (2018) examined the profitability of commercial banks in India. It used return on assets, return on equity and net interest margin as a proxy for profitability of banks. This study

developed a linear regression model to assess the profitability affecting factors. Bansal et al. (2018) have used net profit margin and return on assets as dependent variables to assess their influencing factors of commercial bank in India. Almaqtari et al. (2019) have assessed the determinants of profitability of commercial banks. This study is used return on assets and return on equity as a proxy for profitability of banks. While, it considered bank size, assets quality, capital adequacy ratio, liquidity, operating efficiency, deposits, leverage, assets management and number of branches are considered as independent variables. Alam (2021) have developed a log-linear regression model to assess the banks performance on economic growth in India. This study is considered annual growth of GDP as dependent variable, and lending capacity, banks investment, return on assets and interest marginal as proxy variables for bank's performance.

Aforementioned literature indicates that existing researchers do not have any unanimity on the indicators which may be used as proxy for measurement of banking performance. Return on assets is significant indicator to measure the profitability of banking sector (Kalakkar, 2012; Alam et al., 2021). Return on assts is also useful to increase the economic growth of a nation (Alam et al., 2021). Thus, return of assets and return of equity may be used as dependent variables to examine the performance of banking sector (Al-Homaidi et al., 2018). Hence, return on assets and return of equity are used as vital indicators to measure the bank performance in the present study. Accordingly, both the variable is used as output variables which depends upon capital adequacy ratio, net profit, return on investments adjusted to cost of funds, return on advances adjusted to cost of funds, return on investment, cost of borrowings, investment - deposit ratio, credit - deposit ratio, cash - deposit ratio, total of borrowings and profit per employee. Log-linear regression model is used to assess the bank's performance affecting factors. Previous studies such as Kalakkar (2012); Al-Homaidi et al. (2018); Almaqtari et al. (2019); Alam (2021) have applied to assess the determinants or factors affecting bank's performance in India. Hence, the log-linear regression model is specified as:

$$ln(RetAss)_{it} = \beta_0 + \beta_1 ln(CaAdRa)_{it} + \beta_2 ln(NePro)_{it} + \beta_3 ln(ReInAdCoFu)_{it} + \beta_4 ln(ReAdAdCoFu) + \beta_5 ln(RetInv)_{it} + \beta_6 ln(CosBor)_{it} + \beta_7 ln(InvDepRat)_{it} + \beta_8 ln(CreDepRat)_{it} + \beta_9 ln(CasDepRat)_{it} + \beta_{10} ln(TotBor)_{it} + \beta_{11} ln(PrPeEm)_{it} + u_{it} \quad (1)$$

Here, *RetAss* is return on assets, *CaAdRa* is capital adequacy ratio, *NePro* is net profit, *ReInAdCoFu* is return on investments adjusted to cost of funds, *ReAdAdCoFu* is return on advances adjusted to cost of funds, *RetInv* is return on investment, *CosBor* is cost of borrowings, *InvDepRat* is investment - deposit ratio, *CreDepRat* is

credit - deposit ratio, *CasDepRat* is cash - deposit ratio, *TotBor* is total of borrowings and *PrPeEm* is profit per employee, *ln* is natural logarithms, $i$ is $i^{th}$ bank (1, 2, …, 47), $t$ is time (2005, 2006, …, 2020), $\beta_0$ is constant coefficient; and $\beta_1$, $\beta_2$, … , $\beta_{11}$ are the regression coefficient of corresponding variables; $u_{it}$ is error-term in equation (1). The brief summary of dependent and independent variables is presented in Table 3. In order to assess the influence of selected variables on return to equity of commercial banks, following log-linear regression model is applied as:

$$ln(RetEqu)_{it} = €_0 + €_1\, ln(CaAdRa)_{it} + €_2\, ln(NePro)_{it} + €_3\, ln(ReInAdCoFu)_{it} + €_4\, (ReAdAdCoFu)_{it} + €_5\, ln(RetInv)_{it} + €_6\, ln(CosBor)_{it} + €_7\, ln(InvDepRat)_{it} + €_8\, ln(CreDepRat)_{it} + €_9\, ln(CasDepRat)_{it} + €_{10}\, ln(TotBor)_{it} + €_{11}\, ln(PrPeEm)_{it} + \varepsilon_{it} \quad (2)$$

Here, $€_0$ is constant coefficient; $€_1$, …, $€_{11}$ are the regression coefficient of associated variables; $\varepsilon_{it}$ is error term in equation (2). The explanation of remaining variables is given in equation (1).

**Table 3:** Summary of Dependent and Independent Variables

| **Variables** | **Symbol** | **Unit** |
|---|---|---|
| Return on Assets | *RetAss* | in % |
| Return on equity | *RetEqu* | in % |
| Capital adequacy ratio | *CaAdRa* | in % |
| Net Profit | *NePro* | in Crore |
| Return on investments adjusted to cost of funds | *ReInAdCoFu* | in % |
| Return on advances adjusted to cost of funds | *ReAdAdCoFu* | in % |
| Return on Investment | *RetInv* | in % |
| Cost of borrowings | *CosBor* | in % |
| Investment - Deposit Ratio | *InvDepRat* | in % |
| Credit - Deposit Ratio | *CreDepRat* | in % |
| Cash - Deposit Ratio | *CasDepRat* | in % |
| Total of Borrowings | *TotBor* | in Crore |
| Profit per employee | *PrPeEm* | in Rupees Lakh |

***Panel Unit Root Tests:*** It measures stationarity of an individual data set. Therefore, existence of panel root is estimate by Im-Pesaran Test (Alam et al., 2021).

**Random and Fixed Effect Models:** Random effect model is used to estimate the regression coefficients of explanatory variables as assuming that there is no significant different among the banks (Al-Homaidi et al., 2018; Singh et al., 2021). However, it is seemed that there exists a high diversity among the banks, therefore, fixed-effect model is also used to estimate the regression coefficient of independent variables in the proposed empirical model (Al-Homaidi et al., 2018). As this study include 47 banks which have diversity in financial activities, therefore, it is obvious there may be existence of multi-collinearity, autocorrelation, serial correlation and heteroskedastic in panel data. Hence, panels corrected standard errors model is used to estimate the regression coefficient of explanatory variables in the propose model (Singh et al., 2021)

## 4. Results and Discussion

### 4.1. Descriptive Results

The statistical summary of dependent and independent variables is given in Table 4. The values of standard deviation for most variables are less than 1. Thus, undertaken variables do have high variation. However, the values of kurtosis and skewness are not found between – 1 to + 1. Thus, estimates indicate that these variables are not in the normal form. Thus, first difference of most variables (except net profit, cash deposit ratio and profit per employee) are considered in empirical model to avoid the abnormality in the associated variables.

**Table 4:** Statistical summary of variables

| ***Variables*** | ***Min*** | ***Max*** | ***Mean*** | ***SD*** | ***Kurtosis*** | ***Skewness*** |
|---|---|---|---|---|---|---|
| *logRetEqu* | -2.803 | 4.453 | 2.312 | 0.870 | 9.712 | -1.930 |
| *logRetEqu* | -2.803 | 4.453 | 2.312 | 0.870 | 9.712 | -1.930 |
| *logCaAdRa* | 0.113 | 5.626 | 2.761 | 0.468 | 8.504 | 1.663 |
| *logNePro* | -2.409 | 10.176 | 5.954 | 2.027 | 3.390 | -0.742 |
| *logReInAdCoFu* | -5.690 | 2.566 | 0.309 | 1.055 | 6.855 | -1.459 |
| *logReAdAdCoFu* | -3.198 | 2.964 | 1.295 | 0.478 | 24.506 | -2.886 |
| *logRetInv* | -0.436 | 2.888 | 1.979 | 0.190 | 44.081 | -3.380 |

| | | | | | | |
|---|---|---|---|---|---|---|
| *logCosBor* | -2.910 | 11.798 | 1.946 | 1.057 | 23.397 | 2.311 |
| *logInvDepRat* | 2.677 | 6.327 | 3.681 | 0.427 | 6.886 | 1.666 |
| *logCreDepRat* | 0.182 | 6.277 | 4.354 | 0.388 | 30.588 | -1.678 |
| *logCasDepRat* | 0.032 | 3.705 | 1.836 | 0.418 | 6.049 | 0.138 |
| *logTotBor* | -5.116 | 12.907 | 7.812 | 2.547 | 4.957 | -1.078 |
| *logPrPeEm* | -1.772 | 5.602 | 2.246 | 1.285 | 2.936 | 0.167 |

**Source:** Author's Estimation.

### 4.2. Empirical Results

Performance affecting factors of Indian banking sector is estimated using panel data during 2005 – 2020. For this investigation, it used return on assets and return on equity as dependent variables and other factors as independent variables. Regression coefficients of explanatory variables with return on assets and return of equity is estimated using random effect model, fixed effect model and panels corrected standard errors model which are given in Table 5, 6 and 7 respectively. As panels corrected standard errors model is useful to reduce the existence of multi-collinearity, autocorrelation, serial correlation and heteroskedastic in panel data. Therefore, this study provides the statistical inferences of empirical findings which are estimated through panels corrected standard errors model.

Regression coefficient of return on assets with net profit, return on advances adjusted to cost of funds, credit - deposit ratio and profit per employee are found positive and statistically significant. As net profits of banks are useful to increase the further investment possibility. Therefore, regression coefficient of net profits with return on assets is statistically significant at 1% significant level. Credit - deposit ratio maintains the money flow in financial market, subsequently credit – deposit ratio showed a positive impact on return on assets. Profit per employee is helpful to increase investment possibility in banks, thus, it has a positive influence on return on assets of commercial bank. Subsequently, profit per employee is directly contribute to increase bank's performance (Kalakkar, 2012). Other factors such as cash - deposit ratio, investment - deposit ratio, return on investment and capital adequacy ratio also have a positive impact on return on assets of commercial bank. However, the regression coefficients of aforesaid variables are seemed statistically insignificant. Despite that, the importance of these financial indicators cannot be denied to increase the performance of banking sector in India. Return on investments adjusted to cost of funds, cost of borrowings, total of borrowings has negative implications on return on assets of commercial banks. Here, the estimates infer that net profit, return on

advances adjusted to cost of funds, return on investment, investment - deposit ratio, credit - deposit ratio, cash - deposit ratio and profit per employee are seemed most influencing factors of bank's performance in India.

Regression coefficient of return on equity with net profit, return on advances adjusted to cost of funds, return on investment, credit - deposit ratio, cash - deposit ratio and profit per employee are found positive and statistically significant. As net profit is crucial driver to increase the performance of banking sector. Therefore, return on equity is to be increased as increase in net profit of commercial banks. Return on advances provide various alternative to recover the operating cost of banking. Subsequently, return on advances show a positive impact on return on equity. Credit - deposit ratio and cash - deposit ratio sustain the money flow in the financial market; thus, both the financial activities are effective to increase economic contribution of people. After a certain time period people will be able to deposit their saving in the banks. Accordingly, Credit - deposit ratio and cash - deposit ratio are crucial determinants to increase return on equity in commercial banks. Profit per employee is useful to increase the further investment possibilities for banking sector. Profit per employee have a positive impact on return on equity. Return on investments adjusted to cost of funds and total of borrowings have a negative impact on return on equity.

**Table 5:** Regression results based on random effect model

| | ***Return on Assets*** | | | ***Return of Equity*** | | |
|---|---|---|---|---|---|---|
| Number of obs. | 723 | | | 723 | | |
| Number of groups | 47 | | | 47 | | |
| *R-sq*: *overall* | 0.7314 | | | 0.6525 | | |
| *Wald chi*2 | 1899.16 | | | 1523.56 | | |
| *Prob > chi*2 | 0.000 | | | 0.000 | | |
| *logRetAss* | *Reg. Coef.* | *Std. Err.* | *P>\|z\|* | *Reg. Coef.* | *Std. Err.* | *P>\|z\|* |
| *logCaAdRa* | 0.0383 | 0.0600 | 0.523 | -0.5340 | 0.0680 | 0.000 |
| *logNePro* | 0.3253 | 0.0201 | 0.000 | 0.4670 | 0.0232 | 0.000 |
| *logReInAdCoFu* | -0.0194 | 0.0186 | 0.297 | -0.0342 | 0.0199 | 0.086 |
| *logReAdAdCoFu* | 0.3022 | 0.0416 | 0.000 | 0.1308 | 0.0472 | 0.006 |
| *logRetInv* | 0.1519 | 0.1021 | 0.137 | 0.1499 | 0.1057 | 0.156 |
| *logCosBor* | -0.0575 | 0.0269 | 0.033 | -0.0340 | 0.0286 | 0.235 |
| *logInvDepRat* | 0.1920 | 0.0552 | 0.001 | 0.1842 | 0.0622 | 0.003 |

| | | | | | | |
|---|---|---|---|---|---|---|
| *logCreDepRat* | 0.2131 | 0.0553 | 0.000 | 0.0561 | 0.0590 | 0.342 |
| *logCasDepRat* | 0.0947 | 0.0443 | 0.032 | 0.1620 | 0.0483 | 0.001 |
| *logTotBor* | -0.2533 | 0.0142 | 0.000 | -0.2892 | 0.0160 | 0.000 |
| *logPrPeEm* | 0.4072 | 0.0208 | 0.000 | 0.2349 | 0.0239 | 0.000 |
| *Cons. Coef.* | -3.4150 | 0.4097 | 0.000 | 1.0709 | 0.4487 | 0.017 |
| *sigma_u* | 0.0655 | | | 0.1601 | | |
| *sigma_e* | 0.4002 | | | 0.4053 | | |
| *rho* | 0.0261 | | | 0.1350 | | |

**Source:** Author's Estimation.

**Table 6:** Regression results based on fixed-effect model

| | ***Return on Assets*** | | | ***Return of Equity*** | | |
|---|---|---|---|---|---|---|
| Number of obs. | 723 | | | 723 | | |
| Number of groups | 47 | | | 47 | | |
| *R-sq: overall* | 0.7071 | | | 0.4735 | | |
| *F - Value* | 163.33 | | | 154.31 | | |
| *Prob > F* | 0.000 | | | 0.000 | | |
| *logRetAss* | *Reg. Coef.* | *Std. Err.* | *P>\|t\|* | *Reg. Coef.* | *Std. Err.* | *P>\|t\|* |
| *logCaAdRa* | -0.1802 | 0.0709 | 0.011 | -0.5532 | 0.0719 | 0.000 |
| *logNePro* | 0.3660 | 0.0329 | 0.000 | 0.3683 | 0.0333 | 0.000 |
| *logReInAdCoFu* | 0.0206 | 0.0193 | 0.287 | 0.0024 | 0.0195 | 0.904 |
| *logReAdAdCoFu* | 0.2362 | 0.0484 | 0.000 | 0.1454 | 0.0490 | 0.003 |
| *logRetInv* | 0.2386 | 0.1000 | 0.017 | 0.1483 | 0.1013 | 0.144 |
| *logCosBor* | -0.1077 | 0.0285 | 0.000 | -0.0493 | 0.0289 | 0.088 |
| *logInvDepRat* | 0.3417 | 0.0657 | 0.000 | 0.4003 | 0.0666 | 0.000 |
| *logCreDepRat* | 0.1265 | 0.0594 | 0.034 | 0.1303 | 0.0602 | 0.031 |
| *logCasDepRat* | 0.1574 | 0.0484 | 0.001 | 0.2123 | 0.0490 | 0.000 |
| *logTotBor* | -0.2996 | 0.0176 | 0.000 | -0.2839 | 0.0178 | 0.000 |
| *logPrPeEm* | 0.3975 | 0.0354 | 0.000 | 0.3768 | 0.0359 | 0.000 |
| *Cons. Coef.* | -2.9714 | 0.4582 | 0.000 | 0.1623 | 0.4641 | 0.727 |
| *sigma_u* | 0.2852 | | | 0.5308 | | |
| *sigma_e* | 0.4002 | | | 0.4053 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| *rho* | 0.3368 | | | 0.6316 | | |

**Source:** Author's Estimation.

**Table 7:** Regression Results based on panels corrected standard errors (PCSEs)

| | ***Return on Assets*** | | | ***Return of Equity*** | | |
|---|---|---|---|---|---|---|
| Number of obs. | 723 | | | 723 | | |
| Number of groups | 47 | | | 47 | | |
| *R-squared* | 0.7324 | | | 0.6685 | | |
| *Wald chi2* | 2843.1 | | | 2107.39 | | |
| *Prob > chi2* | 0.000 | | | 0.000 | | |
| *logRetAss* | *Reg. Coef.* | *Std. Err.* | *P>\|z\|* | *Reg. Coef.* | *Std. Err.* | *P>\|z\|* |
| *logCaAdRa* | 0.0749 | 0.0741 | 0.313 | -0.4544 | 0.0812 | 0.000 |
| *logNePro* | 0.3148 | 0.0271 | 0.000 | 0.4450 | 0.0267 | 0.000 |
| *logReInAdCoFu* | -0.0317 | 0.0349 | 0.363 | -0.0733 | 0.0335 | 0.029 |
| *logReAdAdCoFu* | 0.3200 | 0.0662 | 0.000 | 0.0903 | 0.0616 | 0.143 |
| *logRetInv* | 0.1353 | 0.2170 | 0.533 | 0.1312 | 0.2045 | 0.521 |
| *logCosBor* | -0.0468 | 0.0394 | 0.234 | -0.0160 | 0.0438 | 0.715 |
| *logInvDepRat* | 0.1531 | 0.1041 | 0.141 | -0.0263 | 0.1028 | 0.798 |
| *logCreDepRat* | 0.2329 | 0.1039 | 0.025 | 0.0624 | 0.0596 | 0.295 |
| *logCasDepRat* | 0.0769 | 0.0735 | 0.295 | 0.0977 | 0.0773 | 0.206 |
| *logTotBor* | -0.2417 | 0.0229 | 0.000 | -0.2701 | 0.0213 | 0.000 |
| *logPrPeEm* | 0.4100 | 0.0298 | 0.000 | 0.2236 | 0.0298 | 0.000 |
| *Cons. Coef.* | -3.4645 | 0.9078 | 0.000 | 1.7950 | 0.6349 | 0.005 |

**Source:** Author's Estimation.

## 5. Conclusion and Policy Suggestions

This study assesses the performance affecting factors of Indian banking sector. It considers 18-public sector bank, 13-private sector bank and 16-foreign sector banks. For this investigation, return on assets and return on equity are considered as proxy variables to examine the performance of banking sector. While, capital adequacy ratio, net profit, return on investments adjusted to cost of funds, return on advances adjusted to cost of funds, return on investment, cost of borrowings, investment - deposit ratio, credit - deposit ratio, cash - deposit ratio,

total of borrowings and profit per employee are used as intendent variables to measure the bank's performance affecting factors. Log-linear regression model is applied to estimate the bank's performance affecting factors using panel data using 2005 – 2020.

The estimates infer the capital adequacy ratio, net profit, return on advances adjusted to cost of funds, return on investment, investment - deposit ratio, credit - deposit ratio, cash - deposit ratio and profit per employee have positive impact on return on assets. Thus, these are found most influencing factors of bank's performance in this sector. Return on equity is positively associated with net profit, return on advances adjusted to cost of funds, return on investment, credit - deposit ratio, cash - deposit ratio and profit per employee. Hence, aforesaid variables are appeared most influencing factors performance of Indian banking sector. Indian banking industry should increase the transparency in loan facility for common people (Singh and Ashraf, 2020). It would be useful to increase the trust of common people in banking sector.

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