Does Corporate Governance Affect Bank Performance ? Empirical Evidence from India

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Abstract

The performance of corporates is a vital concept that relates to the paths and manners in which financial and non-financial resources available to a firm are shrewdly used to accomplish the overall objective of a firm. The comprehensive motive of good governance of corporates is amplification of investors' confidence in the economy of a country. The aim of the present study was to assess the impact of corporate governance (practices) on performance of selected banks. Using a non-binary approach, unweighted index was constructed for the present study. Trichotomous approach was followed to quantify each sub-variable of corporate governance. All scheduled public sector banks, which were listed on BSE as well as NSE as on April 01, 2014 were selected. The study used secondary data, which were obtained from government publications, respective banks' websites, corporate governance reports, and annual reports of selected banks. Prowess database, Capitaline Plus database, and Indian Boards database were also used to assemble the data. The data were put together for a period of 10 financial years from 2006 - 07 to 2015-16. The panel data were analyzed through STATA Software by using descriptive statistics and econometric models, that is, pooled ordinary least squares, fixed-effects, and random-effects models. Test for normality, test for multicollinearity, test for heteroskedasticity, test for serial correlation, Hausman test, and LM test were also carried out for the present study. The study found that corporate governance had a significant role in determining the basic earnings per share ; whereas, corporate governance did not significantly influence the performance measure Tobins' *Q*.

Keywords : **corporate governance, econometric, FEM, OLS, REM**

JEL Classification : C33, C58, G21, G34

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The failure of some gigantic banks in the West emphasized the inevitability of close monitoring of the banking system. The flaws in the banking system of an economy can threaten financial steadiness within the country as well as globally (Swain & Samantaray, 2012). The need to raise the strength of financial systems has invited growing international concern. Several international financial bodies, including International Monetary Fund (IMF), Basel Committee on Banking Supervision (BCBS), Bank for International Settlements (BIS), and the World Bank have recently been exploring the paths to reinforce financial stability throughout the globe (Machiraju, 2013). BCBS has been working in this area for several years directly and through its contacts with banking supervisors or executives in every part of the globe. Banking companies are diverse from other

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corporates in vital respects, and that shapes the corporate governance of banking companies, which is not only different but also more decisive (Ravi, 2015; Swain & Samantaray, 2012). Banks of a country lubricate the wheels of the economy, are the alveus of monetary policy transmission, and comprise the economy's payment and settlement system. Due to the special business nature, banking companies are highly leveraged. These companies accept hefty amounts of uncollateralized funds as deposits in a fiduciary ability, and then lend those funds through credit creation. The existence of an outsized and isolated base of depositors in the stakeholders group keeps the banking companies apart from other corporates. Banks are interrelated in assorted, multifaceted, and often obscure ways underscoring their "contagion" potential. Ravi (2015) stated the importance of banking companies' governance as, if a corporate fails, the fallout can be restricted to the stakeholders. If a banking company fails, the impact can spread rapidly to other banks with potentially serious consequences for the entire financial system and the macro economy. Kumar and Sudesh (2016) described the radical legislative changes, that is, New Companies Act, 2013 and New Clause 49 of Listing Agreement in India that brought the transparency in corporate compliance mechanism, which led to improved corporate performance. Some of the definitions of corporate governance are given as follows:

Reserve Bank of India (2001) described corporate governance as, the system by which business entities are monitored, managed, and controlled. At one end of the spectrum are the shareholders as owners of the business entity since they provide the ultimate risk capital. At the other end are the managers or the executive directors of the company who are in control of its day-to-day affairs.

Mallin (2002) said that corporate governance deals with a complex set of relationships between a corporation and its board of directors, management, shareholders, and other stakeholders. It can be defined as a set of constraints on minority shareholder expropriation set by : (a) internal corporate control mechanisms (such as the board), (b) external capital market monitoring and pricing, and (c) laws and regulations.

Reddy and Akula (2011) stated that corporate governance ensures the accountability of certain individuals in an organization through mechanisms that try to reduce or eliminate the principal-agent problem. A related but separate thread of discussion focused on the impact of a corporate governance system in economic efficiency, with a strong emphasis on shareholders' welfare. The authors also described different corporate governance practices and role of various stakeholders in their study.

Review of Literature

Kabigting (2011) in his study focused on the determinants of corporate governance of selected banks, which were listed on the PSE (Philippine Stock Exchange). The main motive of the study was to assess the impact of corporate governance (CG) on corporate performance. The study considered board size and insider ownership as proxies for corporate governance; and bank size, net non performing loan ratio, return on average equity (ROE), basic earnings per share (BEPS), Tobins' Q ratio, and return on average assets (ROA) as proxies for corporate performance. The study found that insider ownership had a significant positive impact on ROE and ROA ; whereas, there was no significant impact found on BEPS. The study further stated that insider ownership had a negative but significant impact on bank size, Tobins' Q ratio, and net non performing loan ratio ; whereas, board size had a significant impact on all the corporate performance variables.

Alfaraih, Alanezi, and Almujamed (2012) did an empirical research on the effects of government and institutional ownership on performance of companies in Kuwait. The present research used data for 134 companies, which were listed on KSE, that is, Kuwait Stock Exchange. Tobin's Q and return on assets (ROA) were used as performance indicators of selected companies. The government and institutional ownership had negative and positive significant impacts, respectively on companies' performance.

Fallatah and Dickins (2012) described corporate governance practices and their impact on Saudi Arabian

companies' performance. Return on assets was used as an accounting measure and Tobin's *Q* was used as a market-based measure of companies' performance. The study found that there was no significant impact of corporate governance practices on companies' performance (Tobin's *Q* and ROA).

Yusoff and Alhaji (2012) examined the relationship between CG (corporate governance) and firm performance. Data were assembled from a sample of 813 listed companies of Malaysia for the year 2009 to 2011. The CG attributes namely, board size (BS), non-executive director (NED), and board leadership structure (BLS) were used as independent variables; whereas, performance variables namely, return on equity (ROE) and basic earnings per share (BEPS) were used as dependent variables in the study. Econometric models were applied to the study. The study found that there was a significant impact of all the independent variables on BEPS and ROE (Korczak & Korczak, 2009).

Inam and Mukhtar (2014) assessed the impact of corporate governance on selected performance factors of banks in Pakistan. Performance of the banking sector was measured through operational efficiency (evaluated in terms of amount of non - performing and default loans), liquidity, profitability (net income, net interest income, and return on equity), productivity (interest income per employee, business per employee, and profit per employee), and capital adequacy indicator. All commercial banks were selected to study the impact of CG on performance. The study revealed that corporate governance was positively associated with profitability indicators, that is, net income, net interest income, and return on equity. Corporate governance was also positively associated with liquidity as good governance could provide guidelines to increase current assets of banks to meet short term liabilities. The study further revealed that there was a significant impact of corporate governance on operational efficiency and productivity (IIPE, BPE, & PPE) ; whereas, no significant impact of corporate governance on capital adequacy was found.

Bussoli, Gigante, and Tritto (2015) investigated the influence of CG of the banks that operate in the cooperative credit system on performance of banks, and quality of loans for the years 2010 - 2012. The study was based upon a sample comprising of 48 Italian banks, which were further bifurcated into 24 cooperative banks and 24 popular banks. Multivariate OLS regression was used to analyze the data. The study revealed that there was a significant relationship between board dimension, quality of loans, and between the number of committees and performance. The study further revealed that there was a significant but negative impact of boards' size on ratio of impaired loans to gross loans.

Objectives of the Study

Importance of public sector banks for the economy is emphasized by the fact that public sector banks (PSBs) in India control more than 70% of the total banking system assets, thereby leaving a relatively smaller part for its private sector peers. It is of decisive importance that public sector banks (PSB) should have sturdy corporate governance. The aim of the present study is to assess the impact of corporate governance (practices) on performance of public sector banks.

Research Methodology

The present study follows the casual research design to derive empirical results. It is casual in the sense that it describes the relationship between corporate governance practices and performance of selected banks. It is an empirical investigation in the sense that it is a database research that is used to achieve meaningful conclusions that are capable of being verified by observation and experimentation. The Indian banking sector incorporates varieties of banks, that is, payments banks, foreign banks, public sector banks (PSB), private sector banks (old and new), small finance banks, and co-operative banks, etc. All banks working in India are the population of the study.

Table 1. List of Selected Public Sector Banks

1	Allahabad Bank	13	Oriental Bank of Commerce
2	Andhra Bank	14	Punjab & Sind Bank
3	Bank of Baroda	15	Punjab National Bank
4	Bank of India	16	State Bank of Bikaner & Jaipur
5	Bank of Maharashtra	17	State Bank of India
6	Canara Bank	18	State Bank of Mysore
7	Central Bank of India	19	State Bank of Travancore
8	Corporation Bank	20	Syndicate Bank
9	Dena Bank	21	UCO Bank
10	IDBI Bank	22	Union Bank of India
11	Indian Bank	23	United Bank of India
12	Indian Overseas Bank	24	Vijaya Bank

Despite the fact that corporate governance covers all types of banks, but for specific focus, all scheduled public sector banks which were listed on BSE as well as NSE as on April 1, 2014 were selected for this study. So, the sample size of the study is 24 banks. The Table 1 shows the list of the selected public sector banks. The study is based on secondary data which were obtained from government publications, respective banks' websites, corporate governance reports, and annual reports of selected banks. Prowess database, Capitaline Plus database, and Indian Boards database were also used to assemble the data. The data were put together for a period of 10 financial years from 2006 - 07 to 2015 - 16.

Corporate governance index was developed after a thorough study of different acts or laws prevailing in India which are applicable to the Indian banking sector, especially Revised Clause 49 of the Listing Agreement of SEBI, and New Companies Act, 2013, recommendations from different national and international committees on corporate governance, reports of corporate governance rating agencies, and other literature on corporate governance index. The constructed corporate governance index carries 11 major variables and 129 sub-variables. Major variables are board of directors (BOD), audit committee (AC), nomination and remuneration committee (NRC), stakeholders' grievance committee (SGC), risk management & fraud monitoring committee (RMFMC), related party transactions (RPT), general body meetings (GBM), disclosures (DISCS), means of communication (MOC), general shareholder information (GSI), and corporate social responsibility & sustainability (CSRS).

Using a non-binary approach, unweighted index was constructed for the present study. Equal values were assigned to each and every item because each item in the index carries equal importance (Ahmed & Nicholls, 1994 ; Hossain, 2008 ; Jain & Nangia, 2014). Trichotomous approach was followed to quantify each sub-variable of corporate governance (Mahadeo & Soobaroyen, 2013; Strenger, 2004). In this non - binary approach, three values, that is, 0, 1, 2 were used. If a bank was compliant with one sub-variable (parameter) completely, then score 2 was given for that particular parameter. If the bank was complaint with one sub-variable (parameter) partially, then score 1 was given. Score 0 was used for absence of compliance of the respective parameters. Thus, total maximum possible score for all parameters for a particular bank in a year was 258. Corporate governance variables were used as independent variables ; whereas, performance variables namely basic earnings per share (BEPS) and Tobins'*Q* ratio (TQR) were taken as dependent variables.

The study has short and balanced panel data. This panel data were analyzed using STATA Software with descriptive statistic (arithmetic mean) and econometric models, that is, pooled ordinary least squares, fixed-effects, and random-effects models. Test for normality, test for multicollinearity, test for heteroskedasticity, test for serial correlation, Hausman test, and LM test were also carried out for the present study. Panel data analysis is

a statistical method which transacts with two-dimensions, that is, cross sectional (group effects) and time-series (time effects). The panel data regression model looks like :

$$y_{it} = a + bx_{it} + ?_{it}$$

where,

x = independent variable ;

y = dependent variable ;

a and b are coefficients; i and t are indices for individuals ; and time, $?_{it}$ is the error term.

(1) The pooled OLS model can be represented as follows :

$$\text{Pooled OLS Model : } Y = á + â_1 X_1 + â_2 X_2 + ... + â_n X_n$$

where,

Y is the dependent variable ;

á and â are the regression coefficients ; and

X_i represents independent variable.

(2) The functional form of fixed-effects model :

$$\text{Fixed-Effects Model : } Y_{it} = á_i + â_1 X_{1it} + â_2 X_{2it} + ... â_k X_{kit} + u_{it}$$

where,

Y_{it} is the dependent variable (i = entity and t = time);

$á_i$ (i =1....n) is the unknown intercept for each entity;

X_{it} represents independent variable;

â is the coefficient for independent variable; and

$µ_{it}$ is the error term.

(3) A random - effects model can be represented as :

$$\text{Random - Effect Model : } Y_{it} = á_0 + â_1 X_{1it} + â_2 X_{2it} + ... â_k X_{kit} + á_i + u_{it}$$

$$Y_{it} = á_0 + â_1 X_{1it} + â_2 X_{2it} + ... â_k X_{kit} + v_{it}$$

where,

Y_{it} is the dependent variable (i represents entity and t represents time) ;

X_{it} is the independent variable ;

â is the coefficient for independent variable ;

v_{it} is the composite error term consisting of cross-section error component ($á_i$) and combined error component (u_{it}).

Analysis and Results

The relationships between corporate governance (practices/variables) and performance variables of public sector

banks were tested with the help of econometric models. The regression model for association between BEPS and corporate governance is:

$$BEPS_{it} = \alpha + \hat{a}_1 (BOD)_{it} + \hat{a}_2 (AC)_{it} + \hat{a}_3 (NRC)_{it} + \hat{a}_4 (SGC)_{it} + \hat{a}_5 (RMFMC)_{it} + \hat{a}_6 (RPT)_{it} + \hat{a}_7 (GBM)_{it} + \hat{a}_8 (DISCS)_{it} + \hat{a}_9 (MOC)_{it} + \hat{a}_{10} (GSI)_{it} + \hat{a}_{11} (CSRS)_{it} + ?_{it}$$

where, á is constant term, â is coefficient of variables, and $?_{it}$ is the error term.

The hypothesis tested is :

↳ **H_{01}:** There is no significant impact of corporate governance on BEPS in public sector banks.

All the observations were pooled to run a combined regression using OLS estimator without taking the cross-sectional and time series data into account separately. By taking BEPS as a response (dependent) variable, the pooled OLS process was selected and the result of pooled OLS model (obtained by using STATA software) is given in the Table 2. The major problem with pooled OLS model is that it fails to distinguish various components relating to the cross-sectional groups. Moreover, it does not capture the impact of time in each cross-sectional group. So, other econometric models, that is, fixed and random effects models were applied to the study. Before applying fixed and random effects models, tests for normality, multicollinearity, heteroskedasticity, and serial correlation/ auto correlation were carried out.

To check whether the data is normally distributed or not, Shapiro - Francia W' test was performed. This test was

Table 2. Pooled OLS Model (Dependent Variable : *BEPS*)

Source	SS	df	MS	Number of Obs	=	240
				F(11, 228)	=	1.61
Model	225224.221	11	20474.9291	Prob > F	=	0.0980
Residual	2906469.17	228	12747.6718	R-squared	=	0.7190
				Adj R-squared	=	0.6709
Total	3131693.39	239	13103.3196	Root MSE	=	112.91

BEPS	Coef.	Std. Err.	t	p>|t|	[95% Conf.	Interval]
BOD	2.32912	1.710793	1.36	0.175	-1.041867	5.700107
AC	0.6195518	3.47627	0.18	0.859	-6.230171	7.469274
NRC	2.237052	3.491183	0.64	0.522	-4.642056	9.11616
SGC	-1.735483	2.552959	-0.68	0.497	-6.765893	3.294928
RMFMC	3.555974	4.207741	0.85	0.399	-4.735056	11.847
RPT	-12.67312	9.968343	-1.27	0.205	-32.31497	6.968736
GBM	-7.559874	4.896647	-1.54	0.124	-17.20834	2.088593
DISCS	-1.630073	1.969674	-0.83	0.409	-5.511163	2.251018
MOC	-4.408478	7.155204	-0.62	0.538	-18.50726	9.690303
GSI	-1.041655	2.215721	-0.47	0.639	-5.407563	3.324252
CSRS	-7.332772	5.935738	-1.24	0.218	-19.02869	4.363143
_cons	168.3866	50.53724	3.33	0.001	68.80688	267.9664

Note : Board of Directors *(BOD)*, Audit Committee *(AC)*, Nomination and Remuneration Committee *(NRC)*, Stakeholders' Grievance Committee *(SGC)*, Risk Management & Fraud Monitoring Committee *(RMFMC)*, Related Party Transactions *(RPT)*, General Body Meetings *(GBM)*, Disclosures *(DISCS)*, Means of Communication *(MOC)*, General Shareholder Information *(GSI)*, Corporate Social Responsibility and Sustainability *(CSRS)*, and Basic Earning per Share *(BEPS)*.

Table 3. Shapiro-Francia *W'* Test (All Variables)

Variable	Obs	W'	V'	z	Prob>z
BEPS	240	0.44399	2.832	9.754	0.05101
TQR	240	0.96160	1.309	4.162	0.10002
BOD	240	0.98121	1.577	2.667	0.10383
AC	240	0.98628	2.612	2.009	0.05226
NRC	240	0.98617	2.632	2.025	0.05145
SGC	240	0.96370	1.909	4.044	0. 05203
RMFMC	240	0.99620	2.724	0.675	0.75029
RPT	240	0.99115	1.684	1.091	0.13763
GBM	240	0.99830	2.324	2.360	0.99086
DISCS	240	0.96382	3.887	4.037	0.37462
MOC	240	0.99839	2.307	2.468	0.99321
GSI	240	0.97407	1.936	3.340	0.08042
CSRS	240	0.99494	2.964	0.077	0.53054

Table 4. Variance Inflation Factor (All Independent Variables)

Variable	VIF	1/VIF = Tolerance
DISCS	2.64	0.378760
GSI	1.98	0.506096
SGC	1.91	0.524934
NRC	1.83	0.545682
RMFMC	1.81	0.552155
BOD	1.79	0.558490
MOC	1.79	0.559304
AC	1.75	0.572477
CSRS	1.70	0.589268
GBM	1.48	0.675126
RPT	1.30	0.771269
Mean VIF	1.81	

Table 5. White's Test (Dependent Variable : *BEPS*)

White's test for H_0: homoskedasticity
against H_a: unrestricted heteroskedasticity

$Chi^2(77)$ = 58.25
Prob > Chi^2 = 0.9451

Cameron & Trivedi's decomposition of IM-test

Source	Chi^2	*df*	*p*
Heteroskedasticity	58.25	77	0.9451
Skewness	15.19	11	0.1739
Kurtosis	4.64	1	0.0513
Total	**78.08**	**89**	**0.7893**

performed for all the variables (regressors as well as response variables). The *p* - value for all the selected variables is more than 0.05 for Shapiro - Francia *W′* Test (Table 3) ; so, the null hypothesis that the data is normally distributed is accepted.

To check the multi-collinearity problem, VIF (variance inflation factor) test was performed (Table 4). VIF is used to quantify the degree of multicollinearity/collinearity in regression analysis. VIF provides an index that measures how much variance of regression coefficient increases due to collinearity. This test was performed once for all regressors irrespective of response variables selected for the study. The tolerance value (1/VIF) of each selected regressors is observed to be more than 0.1, and VIF is also less than 10 for each selected regressors, which means that there is no multicollinearity problem. White's test was performed to check the heteroskedasticity problem (Table 5). The null hypothesis for White's test is that the data is homoskedastic. The results show that the

Table 6. Wooldridge Test (Dependent Variable : *BEPS*)

H_0: no first-order autocorrelation	
F(1,23) =	57.098
Prob > *F* =	0.0502

Table 7. Fixed-Effects Model (Dependent Variable : *BEPS*)

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Fixed-effects (within) regression               Number of obs      =       240
Group variable: Bank                            Number of groups   =        24

 R-sq:                                           Obs per group:
     within  = 0.6451                                         min =        10
     between = 0.0021                                         avg =      10.0
     overall = 0.0356                                         max =        10

                                                F(11,205)          =      3.16
corr(u_i, Xb)  = -0.3710                        Prob > F           =    0.0006

------------------------------------------------------------------------------
        BEPS |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         BOD |   3.60635    2.151499     1.68   0.095    -.6355527    7.848254
          AC |  -1.766483   4.083991    -0.43   0.666    -9.818494    6.285527
         NRC |  -2.837077   3.713763    -0.76   0.446    -10.15914    4.48499
         SGC |  0.7341091   2.810597     0.26   0.794    -4.807273    6.275492
       RMFMC |  -4.78842    3.705538    -1.29   0.198    -12.09427    2.517432
         RPT |  -1.435576   9.287452    -0.15   0.877    -19.74675    16.8756
         GBM |  -8.440595   5.253993    -1.61   0.110    -18.79939    1.918196
       DISCS |  -2.178816   2.101862    -1.04   0.301    -6.322854    1.965222
         MOC |  0.7031642   7.011605     0.10   0.920    -13.12094    14.52727
         GSI |  -5.177659   2.314487    -2.24   0.026    -9.740909   -.6144089
        CSRS |  -3.86028    5.277112    -0.73   0.465    -14.26465    6.544092
       _cons |  312.9455    50.01876     6.26   0.000     214.3284    411.5627
-------------+----------------------------------------------------------------
     sigma_u |  81.031964
     sigma_e |  91.542548
         rho |  0.43932047   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i = 0: F(23, 205) = 6.17                     Prob > F = 0.0000
```

Table 8. Random - Effects Model (Dependent Variable : *BEPS*)

Random-effects GLS regression — Number of obs = 240
Group variable: Bank — Number of groups = 24

R-sq: — Obs per group:
within = 0.7407 — min = 10
between = 0.0211 — avg = 10.0
overall = 0.0466 — max = 10

Wald $Chi^2(11)$ = 27.56
corr(*u_i*, *X*) = 0 (assumed) — Prob > Chi^2 = 0.0038

BEPS	Coef.	Std. Err.	*z*	*P*>|*z*|	[95% Conf.	Interval]
BOD	2.816463	1.909078	1.48	0.040	-0.9252619	6.558188
AC	0.3078175	3.732715	1.07	0.034	-7.623805	7.00817
NRC	-1.396936	3.511847	-0.40	0.691	-8.28003	5.486157
SGC	0.2233500	2.627976	1.18	0.032	-5.374089	4.927389
RMFMC	-2.857065	3.705051	-0.77	0.441	-10.11883	4.404701
RPT	-4.662623	9.150415	-0.51	0.610	-22.59711	13.27186
GBM	-7.300853	4.982248	-1.47	0.143	-17.06588	2.464175
DISCS	2.017503	1.968692	1.02	0.005	-5.876068	1.841062
MOC	-0.9508333	6.755527	-0.14	0.888	-14.19142	12.28976
GSI	3.69604	2.183841	1.69	0.017	-7.97629	0.5842092
CSRS	-4.591868	5.262219	-0.87	0.383	-14.90563	5.721891
_cons	271.6935	49.83803	3.45	0.202	174.0128	369.3743
sigma_u	60.458958					
sigma_e	91.542548					
rho	0.20371311	(fraction of variance due to *u_i*)				

data is homoskedastic as the *p* - value (0.9451) is greater than 0.05 ; so, the null hypothesis for data homoskedasticity is accepted. Wooldridge test (Table 6) was performed to check the serial or autocorrelation problem. The *p* - value (0.0502) is not less than 0.05 ; so, the null hypothesis which states that there is no first - order serial correlation cannot be rejected. Thus, no first-order serial correlation is found in the data. Fixed effects model and random effects model results are shown in Table 7 and Table 8, respectively. To choose the most appropriate model between fixed and random effect models, Hausman specification test was applied (Table 9).

The *p* - value (0.0615) is greater than 0.05 ; so, the null hypothesis that the difference in coefficients is not systematic is accepted. It means that the random - effects model is more appropriate than the fixed-effects model. Lagrangian Multiplier (LM) test was conducted to make a comparison between random-effects model and pooled OLS model. The results depicted in Table 10 show that the *p* - value (0.0432) is less than 0.05, so it is not possible to accept the null hypothesis, indicating that pooled OLS model is appropriate. Here, it is found that the random-effects model is more appropriate than other econometric models.

The *p* - value (0.0038) is less than 0.05 (level of significance) ; so, the null hypothesis stating that there is no significant impact of corporate governance on BEPS in public sector banks is rejected. It proves that corporate governance has a significant role in determining BEPS. The coefficient of determination (*R* -Squared) is found to be 0.7407, which means that 74.07% of the variation in BEPS is explained by all the regressors (independent variables) of corporate governance. Regressors BOD, AC, SGC, DISCS, and GSI significantly affect the basic

Table 9. Hausman Test (Dependent Variable : *BEPS*)

	---- Coefficients ----			
	(b) fixed	*(B)* random	*(b-B)* Difference	sqrt(diag(*V_b-V_B*)) S.E.
BOD	3.60635	2.816463	0.7898875	0.9921533
AC	-1.766483	0.3078175	-2.074300	1.657051
NRC	-2.837077	-1.396936	-1.440141	1.207876
SGC	0.7341091	0.2233500	0.5107591	0.9965911
RMFMC	-4.78842	-2.857065	-1.931355	0.0600943
RPT	-1.435576	-4.662623	3.227047	1.589546
GBM	-8.440595	-7.300853	-1.139743	1.667826
DISCS	-2.178816	2.017503	-4.196319	0.7362581
MOC	0.7031642	-0.9508333	1.653997	1.87762
GSI	-5.177659	3.69604	-8.873699	0.7666078
CSRS	-3.86028	-4.591868	0.7315885	0.3961839

Test: H_o: difference in coefficients not systematic

$Chi^2(11) = (b-B)'[(V\_b-V\_B)^{(-1)}](b-B)$

$= 22.39$

$Prob>Chi^2 = 0.0615$

Table 10. LM Test (Dependent Variable : BEPS)

Estimated Results:

	Var	sd = sqrt(Var)
BEPS	13103.32	114.4697
e	8380.038	91.54255
u	3655.286	60.45896

Test: Var(*u*) = 0

$chibar^2(01) = 85.35$

$Prob > chibar^2 = 0.0432$

earnings per share of the selected public sector banks, which is evident in the result that their *p* - value is less than 0.05 as shown by *z* - test of significance. Regressors NRC, RMFMC, RPT, GBM, MOC, and CSRS are not significantly affecting the basic earnings per share as their *p* - value is not less than 0.05 (level of significance). The coefficients reflect the changes in BEPS due to one-unit change in regressors. If there is a one - unit change in BOD, AC, SGC, DISCS, and GSI, then there is 2.816463, 0.3078175, 0.2233500, 2.017503, and 3.69604 times positive change in the BEPS, respectively. It means that BEPS of public sector banks can be increased by giving proper attention to board of directors, disclosures, and general shareholder information parameters of corporate governance.

The regression model for association between TQR and corporate governance is :

$$TQR_{it} = á + â_1(BOD)_{it} + â_2(AC)_{it} + â_3(NRC)_{it} + â_4(SGC)_{it} + â_5(RMFMC)_{it} + â_6(RPT)_{it} + â_7(GBM)_{it} + â_8(DISCS)_{it} + â_9(MOC)_{it} + â_{10}(GSI)_{it} + â_{11}(CSRS)_{it} + ?_{it}$$

where, á is constant term, â is coefficient of variables, and $?_{it}$ is error term.

The hypothesis tested is :

Table 11. Pooled OLS Model (Dependent Variable : *TQR*)

Source	SS	df	MS	Number of obs	=	240
				F(11, 228)	=	3.39
Model	6.53381771	11	0.593983428	Prob > *F*	=	0.0002
Residual	39.9182556	228	0.175080069	*R*-squared	=	0.3407
				Adj*R*-squared	=	0.2992
Total	46.4520733	239	0.194360139	Root MSE	=	0.41843

TQR	Coef.	Std. Err.	*t*	*P*>|*t*|	[95% Conf.	Interval]
BOD	-0.0047872	0.0063402	-0.76	0.451	-0.01728	0.0077056
AC	0.0039229	0.012883	0.30	0.761	-0.021462	0.0293079
NRC	0.0003896	0.0129382	0.03	0.976	-0.0251042	0.0258835
SGC	0.0155305	0.0094612	1.64	0.102	-0.0031121	0.0341731
RMFMC	0.0010581	0.0155938	0.07	0.946	-0.0296683	0.0317845
RPT	-0.0202888	0.0369425	-0.55	0.583	-0.0930811	0.0525035
GBM	0.0156358	0.0181469	0.86	0.390	-0.0201213	0.0513928
DISCS	-0.0176765	0.0072996	-2.42	0.016	-0.0320597	-0.0032932
MOC	-0.0166188	0.026517	-0.63	0.531	-0.0688685	0.035631
GSI	-0.0192012	0.0082114	-2.34	0.020	-0.0353811	-0.0030212
CSRS	0.0013227	0.0219977	0.06	0.952	-0.0420221	0.0446675
_cons	1.716854	0.1872899	9.17	0.000	1.347813	2.085894

Note. *TQR* is Tobins'*Q* Ratio

Table 12. White's Test (Dependent Variable : *TQR*)

White's test for H_0: homoskedasticity
against H_a: unrestricted heteroskedasticity

$Chi^2(77)$ = 88.80
Prob > Chi^2 = 0.1687

Cameron & Trivedi's decomposition of IM-test

Source	Chi^2	*df*	*p*
Heteroskedasticity	88.80	77	0.1687
Skewness	19.38	11	0.0546
Kurtosis	1.66	1	0.1981
Total	109.83	89	0.0664

Table 13. Wooldridge Test (Dependent Variable : *TQR*)

H_0 : no first-order autocorrelation		
F (1, 23)	=	17.990
Prob > *F*	=	0.0622

↳ **H_{02}:** There is no significant impact of corporate governance on TQR in public sector banks.

To run a combined regression using OLS estimator, all the observations were pooled. The OLS process has been

selected by taking TQR as a response variable and result of pooled OLS model is given in the Table 11 through the use of STATA software.

Econometric models, that is, fixed and random effects models are also applied after conducting the tests for normality, multicollinearity, heteroskedasticity, and auto correlation. To know whether the data are normally distributed or not, Shapiro - Francia W' test is applied (Table 3). The p - value for all the selected variables is more than 0.05 for Shapiro - Francia W' test, so the null hypothesis that the data is normally distributed is accepted.

VIF test has also been already applied to check the multicollinearity problem (Table 4). The tolerance value (1/VIF) of each selected regressors is observed to be more than 0.1 and VIF is also less than 10 for each selected regressors, which means that there is no multicollinearity problem. White's test is applied to check the heteroskedasticity problem (Table 12). The null hypothesis for White's test is "data is homoskedastic". The result shows that data is homoskedastic as the p - value (0.1687) is greater than 0.05 ; so, null hypothesis for data homoskedasticity is accepted. To check the serial or autocorrelation problem, Wooldridge test was performed. The analytical Table 13 represents the results of the test. The p - value (0.0622) is not less than 0.05; so, the null hypothesis which states that there is no first order serial correlation cannot be rejected. Thus, no first order serial correlation was found in the data.

The analytical Tables 14 and 15 depict the results for fixed-effects model and random-effects model, respectively. Hausman specification test (Table 16) was applied to choose the most appropriate model between fixed and random effects models. The p - value (0.6933) is not less than 0.05, so the null hypothesis which states

Table 14. Fixed - Effects Model (Dependent Variable : *TQR*)

Fixed-effects (within) regression — Number of obs = 240
Group variable: Bank — Number of groups = 24

R-sq: — Obs per group:
within = 0.3185 — min = 10
between = 0.0668 — avg = 10.0
overall = 0.0802 — max = 10

F(11,205) = 8.71
corr(*u_i*, *Xb*) = -0.3747 — Prob > *F* = 0.0000

TQR	Coef.	Std. Err.	*t*	*P*>|*t*|	[95% Conf.	Interval]
BOD	-0.013334	0.007474	-1.78	0.076	-0.0280699	0.0014018
AC	0.0102816	0.0141873	0.72	0.469	-0.0176901	0.0382533
NRC	-0.0136241	0.0129012	-1.06	0.292	-0.0390601	0.0118119
SGC	-0.0117211	0.0097637	-1.20	0.231	-0.0309711	0.007529
RMFMC	-0.0014882	0.0128726	-0.12	0.908	-0.0268678	0.0238914
RPT	0.0005133	0.0322635	0.02	0.987	-0.0630975	0.0641241
GBM	-0.0148891	0.0182517	-0.82	0.416	-0.0508742	0.0210961
DISCS	-0.0227813	0.0073016	-3.12	0.002	-0.0371772	-0.0083855
MOC	0.0335486	0.0243575	1.38	0.170	-0.0144747	0.0815718
GSI	-0.0079759	0.0080402	-0.99	0.322	-0.023828	0.0078763
CSRS	-0.0049782	0.018332	-0.27	0.786	-0.0411217	0.0311653
_cons	2.405785	0.173759	13.85	0.000	2.063201	2.748369

sigma_u	0.33354335
sigma_e	0.31800762
rho	0.52383069 (fraction of variance due to *u_i*)

test that all *u_i* = 0: *F*(23, 205) = 8.25 — Prob > *F* = 0.0000

Table 15. Random - Effects Model (Dependent Variable : *TQR*)

Random-effects GLS regression — Number of obs = 240
Group variable: Bank — Number of groups = 24

R-sq:
within = 0.3145
between = 0.0327
overall = 0.0982

Obs per group:
min = 10
avg = 10.0
max = 10

Wald Chi^2 (11) = 81.47
corr(*u_i, X*) = 0 (assumed) — Prob > Chi^2 = 0.0524

TQR	Coef.	Std. Err.	*z*	*P>|z|*	[95% Conf.	Interval]
BOD	-0.0110655	0.006863	-1.61	0.107	-0.0245167	0.0023857
AC	0.0063587	0.0133352	0.48	0.633	-0.0197777	0.0324952
NRC	-0.010317	0.0124525	-0.83	0.407	-0.0347235	0.0140895
SGC	-0.0047369	0.0093424	-0.51	0.612	-0.0230477	0.0135739
RMFMC	-0.0003782	0.0129688	-0.03	0.977	-0.0257967	0.0250403
RPT	-0.0076807	0.0321444	-0.24	0.811	-0.0706827	0.0553212
GBM	-0.0071329	0.0176633	-0.40	0.686	-0.0417523	0.0274865
DISCS	0.0217428	0.0069912	3.11	0.002	-0.0354454	-0.0080402
MOC	0.0235384	0.0238413	0.99	0.323	-0.0231897	0.0702664
GSI	-0.0114673	0.0077424	-1.48	0.139	-0.0266421	0.0037076
CSRS	-0.0035033	0.0184308	-0.19	0.849	-0.0396271	0.0326204
_cons	2.268765	0.1781379	8.74	0.120	1.919621	2.617908
sigma_u	0.25199364					
sigma_e	0.31800762					
rho	0.3857191	(fraction of variance due to *u_i*)				

Table 16. Hausman Test (Dependent Variable : *TQR*)

	---- Coefficients ----			
	(b) fixed	*(B)* random	*(b-B)* Difference	sqrt(diag(*V_b-V_B*)) S.E.
BOD	-0.013334	-0.0110655	-0.0022685	0.0029599
AC	0.0102816	0.0063587	0.0039229	0.0048428
NRC	-0.0136241	-0.010317	-0.0033071	0.0033726
SGC	-0.0117211	-0.0047369	-0.0069842	0.002837
RMFMC	-0.0014882	-0.0003782	-0.00111	.
RPT	0.0005133	-0.0076807	0.008194	0.0027688
GBM	-0.0148891	-0.0071329	-0.0077562	0.0045972
DISCS	-0.0227813	0.0217428	-0.0445241	0.0021062
MOC	0.0335486	0.0235384	0.0100102	0.0049879
GSI	-0.0079759	-0.0114673	0.0034914	0.0021681
CSRS	-0.0049782	-0.0035033	-0.0014749	.

Test: H_o: difference in coefficients not systematic

$Chi^2(11) = (b\text{-}B)'[(V\_b\text{-}V\_B)^{(-1)}](b\text{-}B)$
$= 8.22$
Prob > Chi^2 = 0.6933

Table 17. LM Test (Dependent Variable : *TQR*)

```
Estimated results:
                 |       Var     sd = sqrt(Var)
        ---------+-----------------------------
             TQR |   0.1943601       0.4408629
               e |   0.1011288       0.3180076
               u |   0.0635008       0.2519936

Test:   Var(u) = 0
                     chibar^2(01) =   116.75
                   Prob > chibar^2 =   0.0034
```

that difference in coefficients is not systematic cannot be rejected. It means that the random effects model is more appropriate than the fixed effects model.

To make a comparison between random - effects model and pooled OLS model, the Lagrangian Multiplier (LM) test was conducted. The Table 17 shows that the *p*-value (0.0034) is less than 0.05; hence, it is not possible to accept the null hypothesis, indicating that the pooled OLS model is appropriate. It is found that the random - effects model is more appropriate than other econometric models.

The *p* -value (0.0524) is more than the alpha value 0.05 (level of significance). So, the null hypothesis stating that there is no significant impact of corporate governance on TQR in public sector banks is accepted. It means that corporate governance does not have a significant role in determining Tobins' *Q*. The coefficient of determination (*R*-Squared) is found to be 0.3145, which means that only 31.45% of the variation in the TQR is explained by all the regressors of corporate governance. Collectively, all the corporate governance variables do not significantly influence the efficiency measure Tobins' *Q*, but disclosures (DISCS) variable of corporate governance significantly affects the Tobins'*Q* as the *p* - value (0.002) is less than the alpha value (0.05).

Findings

After the analysis, it is found that the *p*-value (0.0038) is less than 0.05 (level of significance) ; so, the null hypothesis H_{01} is rejected. It means that corporate governance has a significant role in determining basic earnings per share. The coefficient of determination (*R*-Squared) is found to be 0.7407, which means that 74.07% of the variation in the BEPS is explained by all the regressors (independent variables) of corporate governance (Table 8).

Regressors : board of directors (2.816463), audit committee (0.3078175), stakeholders' grievance committee (0.2233500), disclosures (2.017503), and general shareholder information (3.69604) significantly affect basic earnings per share of the selected public sector banks, which is evident in the results that their *p*-value is less than 0.05 as shown by the *z* - test of significance. The Table 15 shows that the *p*-value (0.0524) is more than the alpha value 0.05 (level of significance) ; so, the null hypothesis H_{02} stating that there is no significant impact of corporate governance on TQR in public sector banks is accepted. It is observed that corporate governance does not have a significant role in determining Tobins' *Q*. The coefficient of determination (*R* -Squared) is found to be 0.3145, which means that only 31.45% of the variation in the TQR is explained by all the regressors of corporate governance. Collectively, all the corporate governance variables do not significantly influence the efficiency measure Tobins' *Q*, but the disclosures (0.0217428) variable of corporate governance significantly affects Tobins' *Q* as the *p* - value (0.002) is less than the alpha value (0.05).

The findings of the present study are in conformity with the findings of Korczak and Korczak (2009) and Yusoff and Alhaji (2012). They also found that corporate governance had a significant impact on BEPS of listed companies. On the contrary, a study by Kabigting (2011) described that corporate governance had no significant

impact on BEPS of selected listed banks. Alfaraih et al. (2012) reported that corporate governance practices had a significant impact on TQR ; whereas, Fallatah and Dickins (2012) reported no significant impact on TQR, which is also the result of the present study.

Managerial Implications

Public sector banks are facing growing competition within India both in terms of markets and sources of funds. Consequently, it has become essential for public sector banks to persistently reengineer, to accelerate the speed with which the transactions are completed, to provide the products and services to suit the customers' ever-changing requirements, to continuously evaluate and provide training to the workforce to update their knowledge, and to have a proficient and competitive approach. The present study throws light on the impact of good corporate governance practices on the performance of the selected banks.

Limitations of the Study and Scope for Further Research

The present study suffers from the following limitations. The study is limited to panel data analysis, which was done by using different econometric models. It is not possible to assess the impact of corporate governance practices on individual banks in panel data analysis like in multivariate analysis. The limitation of the study is that it promotes scope for further research in the field of corporate governance. Multivariate analysis may be done in the future to assess the impact of corporate governance practices on individual banks. A detailed study on each of the independent variables (BOD, AC, SGC, DISCS, RMFMC, NRC, GSI, RPT, GBM, MOC, or CSRS) taken in the present study may also be done separately in the future.

References

Ahmed, K., & Nicholls, D. (1994). The impact of non-financial company characteristics on mandatory compliance in developing countries: The case of Bangladesh. *The International Journal of Accounting, 29* (1), 62 - 77.

Alfaraih, M., Alanezi, F., & Almujamed, H. (2012). The influence of institutional and government ownership on firm performance: Evidence from Kuwait. *International Business Research, 5* (10), 192 - 200. doi: 10.5539/ibr.v5n10p192

Bussoli, C., Gigante, M., & Tritto, M. B. (2015). The impact of corporate governance on banks performance and loan quality: Evidence from Italian co-operative banks. *Chinese Business Review, 14* (8), 390 - 401. doi: 10.17265/1537-1506/2015.08.003

Fallatah, Y., & Dickins, D. (2012). Corporate governance and firm performance and value in Saudi Arabia. *African Journal of Business Management, 6* (36), 10025-10034. doi: 10.5897/AJBM12.008

Hossain, M. (2008). The extent of disclosure in annual reports of banking companies: The case of India. *European Journal of Scientific Research, 23* (4), 659 - 680.

Inam, H., & Mukhtar, A. (2014). Corporate governance and its impact on performance of banking sector in Pakistan. *International Journal of Information, 6* (3), 106 - 117.

Jain, S., & Nangia, V. K. (2014). *Corporate governance disclosures: Emerging trends in Indian banks*. Retrieved from http://ssrn.com/abstract=2476234

Kabigting, L. C. (2011). Corporate governance among banks listed in the Philippine stock exchange. *Journal of International Business Research, 10*(2), 59-68. Retrieved from https://www.questia.com/library/journal/1P3-2546678401/corporate-governance-among-banks-listed-in-the-philippine

Korczak, A., & Korczak, P. (2009). Corporate ownership and the information content of earnings in Poland. *Applied Financial Economics, 19*(9), 703 - 717. doi: 10.1080/09603100802167247

Kumar, N., & Sudesh (2016). Achieving gender balance in the boardroom : India vis-a-vis European countries. *Prabandhan: Indian Journal of Management, 9* (7), 49 - 59. doi:10.17010/pijom/2016/v9i7/97788

Machiraju, H. R. (2013). *Corporate governance* (2nd revised ed.). Mumbai: Himalaya Publishing House Pvt. Ltd.

Mahadeo, J. D., & Soobaroyen, T. (2013). A longitudinal study of the implementation of the corporate governance code in a developing country : The case of Mauritius. *Business & Society, 55* (5), 738 - 777. doi:10.1177/0007650313501838

Mallin, C. (2002). The relationship between corporate governance, transparency and financial disclosure. *Corporate Governance: An International Review, 10* (4), 253 - 255. doi:10.1111/1467-8683.00289

Ravi, H. (2015). *Corporate governance and the performance of banks in India*. USA: Scholars' Press.

Reddy, M. A., & Akula, R. (2011). Corporate governance : The role of various stakeholders. *Prabandhan: Indian Journal of Management, 4* (5), 50 - 55. doi:10.17010/pijom/2011/v4i5/62458

Reserve Bank of India. (2001). *Standing committee on international financial standards and codes: Advisory group on corporate governance*. Retrieved from https://www.rbi.org.in/Scripts/PublicationReportDetails.aspx?ID=220

Strenger, C. (2004). The corporate governance scorecard: A tool for the implementation of corporate governance. *Corporate Governance: An International Review, 12* (1), 11 - 15. doi: 10.1111/j.1467-8683.2004.00339.x

Swain, K. R., & Samantaray, A. K. (2012). *Role of corporate governance in Indian banking* (1st ed.). New Delhi: SSDN Publishers and Distributors.

Yusoff, W. F. W., & Alhaji, I. A. (2012). Corporate governance and firm performance of listed companies in Malaysia. *Trends and Development in Management Studies, 1* (1), 43 - 65.

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