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Corporate Governance and Efficacy in Working Capital Management: A Study

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Abstract: The present study aims to investigate the linkage between corporate governance practices and the efficacy in working capital management of the selected pharmaceutical companies in India. A sample of top 20 Pharmaceutical companies listed in BSE is selected based on their Market Capitalization. In order to examine the association between corporate governance practices and the firm's efficacy in working capital management, the study employed Pooled OLS Regression Model (as suggested by the Breusch and Pagan Lagrangian multiplier test). The findings of the study bring to light that there is no noticeable linkage between corporate governance practices and the firm's efficacy in working capital management after controlling the effect of firm's size.

Key Words: corporate governance, efficacy in working capital management, control variables, pooled OLS regression model, India

1. INTRODUCTION

Over the last two decades, the world witnessed major corporate scandals, followed by the collapse of the high prolific companies such as Enron, WorldCom, Satyam Computer Services and others that traumatized the confidence of the shareholders over the market. The concept of corporate governance and laws like 'Sarbanes- Oxley Act', 2002 was set up to bring to an end of these unethical practices and to protect the interest of the shareholders as well as of the other relevant stakeholders too.

In today's dynamic and competitive business environment, corporate governance plays an imperative role. Corporate governance is the mechanism used to discipline organizations (Cadbury, 1992). Corporate governance is a set of conventions and policies, designed to govern companies towards the long run maximization of shareholders' wealth. According to the International Chamber of Commerce**, "**Corporate governance is the relationship between corporate managers, directors and the providers of equity, people, and institution who save and invest their capital to earn a return. It ensures that the boards of directors are accountable for the pursuit of corporate objectives and that the corporation itself conforms to the law and regulations". The core objective of Corporate Governance is to protect the interest of the shareholders as well as of the other potential stakeholders of the company too. Good corporate governance practices are important in reducing the risk for investors; attracting investment, and improving the performance of companies (Velnampy & Pratheepkanth, 2013). On the contrary, weak-governance companies have higher input costs, lower labor productivity, lower equity return, lower value, and lower operating performance than good-governance companies (Zaharia & Zaharia, 2012).

On the other hand, working capital management is one of the pivotal facets of financial management. Working Capital Management concerns the administration of the firm's current assets and the financing needed to support current assets (Van Horne and Wachowicz, 2015). It is a strategy designed by the manager to keep an eye on the components of working capital for their optimum utilization. Effective working capital management can generate considerable amounts of cash (Brigham and Houston, 2015). Successful management of working capital protects a firm from the liquidity crisis.

The present study aims to investigate the linkage between Corporate Governance practices and the efficacy in working capital management of the selected pharmaceutical companies in India. In accordance with the basic objective settled, the rest of the paper is ordered as follows: Section 2 highlights Literature Review; Section 3 shows the statement of problem; Objective of the study and Hypothesis Development are placed in Section 4 & Section 5 respectively. Section 6 is all about Research Methodology then, the next section 7 deals with Results and Discussions; and the last section 8 concludes the paper.

2. LITERATURE REVIEW

Before moving forward into the depth of the study, let us have a quick glance on the studies made so far analyzing the

linkage between corporate governance and working capital management.

2.1 Studies having significant relationship between corporate governance and working capital management:

Kajananthan and Achchuthan (2013) reported that corporate governance practices had a significant relationship with the current liabilities to total assets ratio but, the study failed to found any noticeable influence of corporate governance practice on the cash conversion cycle as well as on the current assets to total assets ratio. An attempt was made by **Karani (2013)** to investigate the effect of corporate governance on working capital of manufacturing firms listed in the Nairobi Securities Exchange. The findings of the study discovered adaption of corporate governance plays an important role in improving the efficiency of working capital management. **Njoku (2013)** conducted a study to examine the impact of corporate governance on working capital management considering Nigerian organizations. The findings revealed the board size and audit committee size are significantly related to working capital management. While the CEO's tenure and the CEO's duality is not related to working capital management. **Jamalinesari and Soheili (2015)** made an attempt to investigate the impact of corporate governance on the management of working capital. The finding of the study revealed corporate governance mechanism plays an important role towards improving the efficiency of working capital. **Gill, Mand, and Obradovich (2015)** argued promoter ownership plays a pivotal role towards influencing working capital management of the Indian manufacturing firms. The study of **Faradonbeh and Dolatabadi (2015)** to analyze the effect of corporate governance mechanisms on the efficiency ratios (payable accounts, receivable accounts, and total assets turnover) and trust fund revealed there is a significant relationship among the selected research variables. **Kamel and Azzam (2015)** analyzed the effect of corporate governance in overseeing managements handling working capital levels. Further, they also studied the role of firm maturity towards influencing WCME. They discovered both corporate governance (except for ownership concentration proxy) and firm's maturity are the key determinants of WCME. The study of **Chaudhry and Ahmed (2015)** revealed corporate governance practices significantly influence firm's working capital management efficiency. **Meshack (2015)** made a modest attempt to determine the influence of corporate governance practices on the working capital efficacy of manufacturing firms in Nairobi country. The study concluded corporate governance practices had a noticeable influence on firm's efficiency towards managing working capital. **Al-Rahahleh (2016)** examined the impact of corporate governance quality on cash conversion cycle (CCC) in Jordan. The study revealed there is a negative association between the quality of corporate governance and cash conversion cycle. **Ajanthan and Kumara (2017)** conducted a study to investigate the influence of corporate governance practices on cash holding of Sri Lankan Listed Companies. The study revealed corporate governance practices such as board size and gender diversity had a significant negative influence on the cash holding while, independent chair had a significant positive influence on the firm's cash holding. **Ali and Shah (2017)** claimed that audit committee, board size, and gender effect improves utilization of the working capital. A recent study by a group of researchers **Ahmad, Ahmed, and Samim (2018)** also revealed the same thing that the governance characteristics had a significant impact on working capital management efficiency.

2.2 Studies having insignificant association between corporate governance and working capital management:

The study of **Kamau and Basweti (2013)** to examine the relationship between corporate governance and working capital management of the firms listed at the Nairobi Securities Exchange revealed there was no significant relationship between corporate governance and working capital management. **Pourali, Imeni, and Taherpour (2013)** intended to provide evidence on the relationship of institutional shareholders with Cash Conversion Cycle (CCC) in the listed companies on Tehran Stock Exchange. Research findings suggested that there is no significant relationship between institutional shareholders (independent variable) and CCC (dependent variable).

3. STATEMENT OF PROBLEM

From the ongoing, though few studies have been conducted across the different parts of the world analyzing the linkage between corporate governance and working capital management, in India, so far as the best of our knowledge, no or very few attempts had been made on the present concerned issue. Further, according to one school of thought, there lies a significant linkage between corporate governance practices and working capital management. However, other researchers (few) argued that there seems no association between corporate governance practices and working capital management. There lies some ambiguity in the findings of the researchers hence further investigation is required on the above-stated issue.

4. OBJECTIVE OF THE STUDY

The main thrust of this study is to investigate the linkage between Corporate Governance practices and the efficacy in working capital management of the selected pharmaceutical companies in India. More specifically, the present study has the following objectives:

i) To examine the relationship between Board Size and firm's efficacy in working capital management.

ii) To examine the relationship between Proportion of outside Director on the Board and firm's efficacy in working capital management.

iii) To examine the relationship between Board Efficiency and firm's efficacy in working capital management.

iv) To examine the relationship between CEO Duality and firm's efficacy in working capital management.
v) To examine the relationship between Proportion of non-executive independent director in Audit Committee and firm's efficacy in working capital management.

5. HYPOTHESIS DEVELOPMENT

Based on the above objectives set, the validity of the following null hypothesis (H_0) are to be tested:

Hypothesis 1: There is no significant relationship between Board Size and firm's efficacy in working capital management.

Hypothesis 2: There is no significant relationship between Proportion of outside Director on the Board and firm's efficacy in working capital management.

Hypothesis 3: There is no significant relationship between Board Efficiency and firm's efficacy in working capital management.

Hypothesis 4: There is no significant relationship between CEO Duality and firm's efficacy in working capital management.

Hypothesis 5: There is no significant relationship between Proportion of non-executive independent director in Audit Committee and firm's efficacy in working capital management.

6. RESEARCH METHODOLOGY

6.1 Database

The present study is conducted exclusively based on secondary data collected from Company's Annual Reports, and also from www.moneycontrol.com over a time period of five years i.e. from 2012-13 to 2016-17. A sample of top BSE 20 pharmaceutical companies is drawn out based on their Market Capitalization. The selection of the sample size has been made based on purposive sampling. While sorting top BSE 20 pharmaceutical companies, some of the pharmaceutical companies are not being considered due to non-availability of data or, of having an improper fiscal year (i.e. year ending other than 31st March).

6.2 Research Variables

Table 1: *List of Research Variables and their Proxies*

Variables	Proxy
1. Dependent Variable: a) Firm's efficacy in Working Capital Management (EWCM)	Working Capital Turnover Ratio $= \frac{Net\ Revenue\ from\ Operations}{Net\ Working\ Capital}$
2. Explanatory Variable: a) Corporate Governance	i) Board Size (BS) = Number of Directors on the Board during period *t* ii) Proportion of Outside Director on the Board (POD) = $\frac{\text{Number of non-executive directors on the board during period } t}{\text{Number of Directors on the Board during period } t}$ iii) Board Efficiency (BE) = Number of Board Meetings held during period *t* iv) CEO Duality = Coded '1', if Board's Chairman acting as a CEO/Managing Director simultaneously and Coded '0', Otherwise v) Proportion of non-executive independent director in Audit Committee (PONEIDAC) = $\frac{\text{Number of non-executive independent directorsin Audit Committee during period } t}{\text{Number of Directors on the Board during period } t}$
3. Control Variable: a) Firm's Size (FS)	Natural log of firm's total assets during period *t*

Source: Author's own tabulation

6.3 Methodology

The present study consists of 20 companies and the period is 5 years. Hence, in the present study, panel data analysis is being employed. For the empirical analysis, we have three available options:

i) Pooled OLS method: (20*5) or 100 observations can be pooled and estimate a "grand" regression applying the following model. $W_{it} = \beta_1 + \beta_2 X_{1it} + \beta_3 X_{2it} + \beta_4 X_{3it} + \beta_5 X_{4it} \ldots + \mu_{it}$

Where, i (i.e. company) = 1, 2, 3, 4, 5…..20 and t (i.e. time) = 1, 2, 3, 4, 5. Here, W = Firm's efficacy in working capital management (EWCM), X_1= Board Size (BS), X_2= Proportion of Outside Director on the Board (POD), X_3= Board Efficiency (BE), X_4. = CEO Duality, X_5 = Proportion of non-executive independent director in Audit Committee (PONEIDAC), X_6 = Firm's Size (FS).

ii) The fixed effects least squares dummy variable (LSDV) model: In this model, 100 observations will be pooled as above but, the model permits each cross-section unit (in this

particular case companies) to have its own (intercept) dummy variable. The model can be written as $W_{it} = \beta_{1i} + \beta_2 X_{1it} + \beta_3 X_{2it} + \beta_4 X_{3it} + \beta_5 X_{4it} + \beta_6 X_{5it} + \beta_7 X_{6it} + \mu_{it}$----------(2). The subscript i and β_1 suggest that the intercepts of the 20 companies may be different, but each company's intercept does not vary over time.

iii) The random effects model (REM): This model assumes that the intercept values are randomly drawn from a bigger population of companies. Here, 20 companies are drawn from a Universe of such companies and thus, a common mean value for the intercept (β_1). The individual difference in the intercept value of each company is reflected in the error term (ε_i).

Hence, the model can be represented as $W_{it} = \beta_1 + \beta_2 X_{1it} + \beta_3 X_{2it} + \beta_4 X_{3it} + \beta_5 X_{4it} \ldots + \mu_{it} + \varepsilon_i$.

$= \beta_1 + \beta_2 X_{1it} + \beta_3 X_{2it} + \beta_4 X_{3it} + \beta_5 X_{4it} \ldots + V_{it}$----(3)

Where, $V_{it} = \mu_{it} + \varepsilon_i$. Here ε_i is the individual specific or cross-sectional specific error component and μ_{it} is the combined time series and cross sectional error component.

To select the appropriate model from the above, the following steps have been considered.

Step 1: Selection between Model 1 and Model 3: Breusch Pagan Test

From Model (iii) we get Variance (V_{it}) = $\sigma_\varepsilon^2 + \sigma_\mu^2$---------- (4)

If $\sigma_\mu^2 = 0$ then there is no difference between model 1 and Model 3 and pooled OLS regression should be applied as per equation 1, since in this situation there are neither subject specific effects or they have all been accounted for in the explanatory variables.

To test for the presence of random effects **Breusch Pagan Test** is used. If Null Hypothesis

H_0: $\sigma_\mu^2 = 0$ then, there are no random effects.

$$LM = \frac{NT}{2\,(T-1)} \left(\frac{\sum_{i=1}^{N}(\sum_{t=1}^{T} \hat{e}_{it})^2}{\sum_{i=1}^{N}\sum_{t=1}^{T} \hat{e}^2_{it}} - 1\right)$$

Then the LM statistics has a Chi-square distribution with one difference. If the computed value of LM is significant then H_0will be rejected and there will be random effects.

Step 2: Selection of fixed effects or random effects: Hausman Test

The idea behind Hausman Test is that both the random effects and fixed effects estimators are consistent if there is no correlation between $\mu_i$and the explanatory variables. If both estimators are consistent then in large samples the random effects and fixed effects estimates should be similar. On the contrary, if μ_i is correlated with the explanatory variables the random effects estimator will be consistent.

The Hausman statistics is distributed as χ^2 and is computed as:

$$H = (b - B)'(V\_b - V\_B)^{-1}(b - B)$$

Where;

b = is the coefficient vector from the consistent estimator.

B= is the coefficient vector from the efficient estimator.

V_b = is the covariance matrix of the consistent estimator.

V_B = is the covariance matrix of the efficient estimator.

H_0 : Difference in the coefficient not systematic.

To use Hausman command in Stata the consistent fixed effects estimator is listed first and the efficient random effects is listed second.

If the H statistics is significant the H_0 is rejected and fixed effect model is retained.

7. RESULTS AND DISCUSSIONS

Results obtained from XLSTAT 2016 and STATA software are reported below:

7.1 Descriptive Statistics

Table 2: *Descriptive Statistics*

Variable	Observations	Obs. with missing data	Obs. without missing data	Minimum	Maximum	Mean	Std. deviation
EWCM	100	0	100	-23.630	136.352	3.963	14.690
BS	100	0	100	6.000	14.000	9.670	1.923
POD	100	0	100	0.500	0.900	0.680	0.110
BE	100	0	100	4.000	11.000	5.310	1.625
Duality	100	0	100	0.000	1.000	0.490	0.502
PONEIDAC	100	0	100	0.500	1.000	0.870	0.149
FS	100	0	100	4.961	10.531	8.199	1.301

Source: Author's own tabulation using XL STAT software

Interpretation: The above Table 2 highlights descriptive statistics of the key variables used in this study. It can be observed that the present study has 100 numbers of observations. The mean value of the focused explanatory variables namely Board Size (BS), Proportion of Outside Director on the Board (POD), Board Efficiency (BE), CEO Duality, and Proportion of non-executive independent director in Audit Committee (PONEIDAC) is 9.670, 0.680, 5.310, 0.490, and 0.870 respectively. The control variable Firm's Size (FS) has a mean value of 8.199, while the mean value of dependent variable Firm's Efficacy in Working Capital Management (EWCM) is 3.963. This signifies that on an average, the liquidity condition of the selected firms is more or less in a stable zone.

7.2 Correlation Matrix

Table 3: *Correlation Matrix*

	BS	POD	BE	Duality	PONEIDAC	FS	WCTR
BS	1						
POD	-0.032	1					
BE	0.253	0.121	1				
Duality	-0.312	-0.370	-0.287	1			
PONEIDAC	-0.253	0.024	-0.277	0.165	1		
FS	0.350	-0.143	0.066	-0.258	0.208	1	
EWCM	-0.132	0.096	0.146	-0.070	-0.225	-0.234	1

Source: Author's own tabulation using XL STAT software

Interpretation: The above Table 3 highlights the relationship between dependent variable and explanatory variables used in this study. It can be observed dependent variable i.e. Firm's Efficacy in Working Capital Management (EWCM) has a positive relationship with Proportion of Outside Director on the Board (POD) and Board Efficiency (BE). On the other hand, Firm's Efficacy in Working Capital Management (EWCM) has a negative relationship with Board Size (BS), CEO Duality, Proportion of non-executive independent director in Audit Committee (PONEIDAC), and Firm's Size (FS).

7.3 Multicolinearity Statistics

Table 4: *Multicolinearity Statistics*

	BS	POD	BE	Duality	PONEIDAC	FS
Tolerance	0.729	0.773	0.844	0.665	0.761	0.695
VIF	1.371	1.293	1.185	1.503	1.315	1.438

Source: Author's own tabulation using XL STAT software

Interpretation: The above-mentioned Table 4 explains of Multi-co linearity Statistics. The VIF value of the explanatory variables varies from 1.185 to 1.503 i.e. below the maximum level of VIF i.e.'5'. Further, the tolerance value of the explanatory variables varies from 0.665 to 0.844 i.e. above '0.20' (rule of thumb). Hence, it can be asserted that the set of explanatory variables employed in this study has no Multi-co linearity problem.

7.4 Breusch and Pagan Lagrangian multiplier test for random effects

Table 5 : *Breusch and Pagan Lagrangian multiplier test for random effects*

WTR[SlNo,t] = Xb + u[SlNo] + e[SlNo,t]

Estimated results:

	Var	sd = sqrt(Var)
EWCM	215.7881	14.68973
e	203.0194	14.24849
u	0	0

Test: Var (u) = 0
chibar2(01) = 0.00
Prob> chibar2 = 1.0000

Source: Author's own tabulation using STATA 13 software

Interpretation: The above table shows the result of Breusch and Pagan Lagrangian Multiplier Test (BP test). Breusch and Pagan Lagrangian Multiplier Test (BP test) is conducted in order to verify whether to keep Pooled OLS or, REM as the best fit model for the present study. The result bring to light that the Pooled OLS Model is a good fit in this particular study as the LM statistic i.e. chibar2(01) = 0.00 and Prob> chibar2 = 1.0000. It depicts that the outcome is insignificant at 1% level. Therefore, we failed to reject H0.

7.5 Pooled OLS

Table 6 : *Pooled OLS*

Source	**DF**	**SS**	**MS**	**F**	**Prob > F**	Number of obs = 20		
						F(6, 93) = 2.322		**Model**
6	2783.336	463.889	2.322	0.039		Prob > F = 0.039		
Error	93	18579.682	199.782			R-square = 0.13		
Corrected	99	21363.018				Adj R-squared= 0.074		
						Root MSE = 14.134		

EWCM	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
Intercept	41.865	19.334	2.165	0.033**	3.472	80.258
BS	-1.397	0.865	-1.615	0.110	-3.114	0.321
POD	3.138	14.656	0.214	0.831	-25.966	32.241
BE	1.090	0.952	1.145	0.255	-0.800	2.980
Duality	-2.714	3.467	-0.783	0.436	-9.598	4.171
PONEIDAC	-18.737	10.921	-1.716	0.090	-40.425	2.950
FS	-1.791	1.309	-1.368	0.175	-4.391	0.809

Source: Author's own tabulation using XL STAT software

Note: $*_{Significant\ at\ 1\%\ level}$ $**_{Significant\ at\ 5\%\ level}$

Interpretation: The above Table 6 reports the result of Pooled OLS. The result indicates that the model under consideration is significant at 5% level as the Prob > F = 0.039. R squared of the same is 0.13 which indicates that almost 13% change in the Firm's Efficacy in Working Capital Management(EWCM) was explained by Board Size (BS), Proportion of Outside Director on the Board (POD), Board Efficiency (BE), CEO Duality, Proportion of non-executive independent director in Audit Committee (PONEIDAC), and Firm's Size (FS).

From the above table, it can be observed that none of the selected measures of corporate governance has a significant association with the firm's efficacy in working capital management. The Board Size (BS), Duality, and Proportion of non-executive independent director in Audit Committee (PONEIDAC) seem to have a negative association with firm's efficacy in working capital management (EWCM) but, statistically it's not significant. On the other hand, Proportion of Outside Director on the Board (POD), and Board Efficiency (BE) seems to have a positive linkage with firm's efficacy in working capital management (EWCM) but found to be statistically insignificant.

8. CONCLUSION

Good corporate governance practice brings disciplined performance and enhances the value of the firm in the long run. On the other hand, working capital management is the heart of financial management. Efficient working capital management ensures the short-term solvency of the firm.

The core objective of this study is to investigate the linkage between corporate governance practices and the efficacy in working capital management of the selected pharmaceutical companies in India. The findings of the study bring to light that there is no significant linkage between corporate governance practices and the firm's efficacy in managing working capital so far as the pharmaceutical sector is in concern. There is a vast difference between the two terms 'decision-making and 'decision-taking'. The finding suggests that corporate governance through its policies and programmes shows the pathway through which the company should move to keep parity with its framed mission and vision. However, the efficiency in managing working capital probably rests on the manager's ability & skills; company's past and present performance; nature and size of the business; creditor's policies; present business environment; government policies; and others.

The present study contributes to the existing literature on Corporate Governance and Efficacy in working capital management. There is a scope of further research on this issue. This study can be extended considering a large sample size or, by taking in account other factors of corporate governance like Board Education, Presence of women directors on the board, Presence of foreign directors on the board, and others. Efficiency in working capital can also be measured by taking the cash conversion cycle as a proxy or by framing an index.

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