

## **Corporate Governance, Working Capital Management and Firm Risk: Empirical Evidence from Pakistan Stock Exchange (PSX)**

Safdar Husain Tahir<sup>\*</sup>, Ayesha Afzal<sup>†</sup>, Sadia Liaqat<sup>‡</sup>,  
Furqan Tahir<sup>§</sup> & Muhammad Rizwan Ullah<sup>\*\*</sup>

### **Abstract**

*The current study's aim is to investigate the role of corporate governance in working capital management and financial risk (FR) of manufacturing firms. The secondary data of 60 companies are collected from annual reports for the period of seven years (2011-2017). WCM and FR are used as explained variables while CGI is used as explanatory variable. Firm size, firm age, firm leverage and firm growth are used as control variables. The study finds a negative impact of CGI on WCM while there is an insignificant impact of CGI on FR. The managers of companies are advised to increase the CGI for better management of working capital.*

**Keywords:** corporate governance; risk; manufacturing; working capital; Pakistan.

### **Introduction**

Corporate Governance (CG) could play a vital role for the accomplishment of the missions and objectives of the financial as well as non-financial organizations. CG is defined as a process consisting of guidelines for business management, to improve the value, disclosure and transparency and act for the best interest of the all stakeholders.

WCM brings the important and essential factors to maintain the mechanism of efficiency and effectiveness in organization. WCM is an important function of management of corporations (Achchuthani & Kajananthain, 2013). Risk is the possibility of harms, grievances and destructive incidences which are occurred due to the within or outwardly weaknesses. Risk is the improbability of losing; it is an uncertain occurrence that if happened, then it affects the missions. Risk refers to

---

<sup>\*</sup>Associate Professor, Lyallpur Business School, Government College University, Faisalabad, Pakistan Email: \*drsafdar@gcuf.edu.pk (Corresponding Author)

<sup>†</sup>MS-Scholar, Lyallpur Business School, Government College University, Faisalabad, Pakistan

<sup>‡</sup>MS-Scholar, Lyallpur Business School, Government College University, Faisalabad, Pakistan

<sup>§</sup>MS-Scholar, Lyallpur Business School, Government College University, Faisalabad, Pakistan

<sup>\*\*</sup>PhD-Scholar, Lyallpur Business School, Government College University, Faisalabad, Pakistan

those circumstances in which the real consequence is diverged from the estimated consequences.

Financial managers are confused whether corporate governance index have any relation with efficiency of WC and level of firms' risk. Moreover, financial managers are always focused towards increased efficiency of WC and reduction of level of risk while keeping in view the maximization of firm profitability. Hence, there is a need to explore, whether CG practices have any impact on WC and risk level of manufacturing listed firms in Pakistan. The study therefore, analyzes the impact of CGI and firms' risk on working capital management.

### Literature Review

Karani (2013) analyzed the impact of CG on WCM of Nairobi manufacturing firms and found a negative impact of CG on WCM. Villar et al., (2016) conducted a research on the relation between CG and WCM on the Spanish listed firms for the period 2005-2012. They concluded a negative relation of CG with WCM. Similarly, Gill, and Biger (2013), Flodberg and Nadjari (2013), Lattemann (2014) and Rutledge et al., (2016) also found a negative impact of CGI on WCM. Alternatively, Mugo (2015) analyzed the impact of CG on WCM. The study was conducted on 27 firms within 5 of the sectors in the Kenyan economy for the period 2009-2014. They found that board size had positive impact on CCC. On the basis of above discussion, the study develops the following hypothesis:

*H<sub>1</sub>: There is a negative impact of CGI on working capital management.*

Li, Jahera and Yost (2012) scrutinized the impact of CG on the risk of corporations. They used the USA corporations for the period 2000, 2002, 2004, 2006, and 2008. They used the Gompers index proxy for measuring corporate governance and volatility measuring proxy for the measurement of risk. They found that the CG had negative relation with risk. Parigi et al. (2015) presented the effect of CG on the return of stock market of U.S. They investigated that the CG had a positive relation with the systematic risk. They used the CAPM for calculating the risk of the firms. They found that systematic risk of the firms was lower in the presence of low-level Index and vice versa. Likewise, Fiador (2016), Kaur and Singh (2013) and Iqbal and Shah (2012) also found a negative impact of CG on firm risk. The above arguments allow constructing the second hypothesis of the study:

*H<sub>2</sub>: There is an inverse association between CGI and firm risk.*

### Methodology

In order to attain the aims of the study, the data of manufacturing companies for seven years (2011-2017) are collected from Pakistan Stock Exchange (PSX). All information related to the governance such as board meetings (BM), board independence (BIND), CEO Duality (CEOD), board ownership (BO), board size (BS), Audit committee independence (ACI), existence of CFO (EXCFO) are collected from annual reports of these firms. This information requires manual calculation for the years 2011-2017. Firm's age (FAGE), firm's growth (FGROWTH), firm's size (FSIZE) and financial leverage (FL) are used as control variables. The study uses data of 60 non-financial firms listed at PSX as sample for analysis.

Table 1: Variable's Description

Variable	Explanation / Measurement
Dependent Variables	
WCM	CCC is calculated as $ACP + ITD - APP$ Whereas ACP is equal to $[(AR1/1 + AR31/12)/2]/Sales * 360$ , ITD is equal to $[(INV1/1 + INV31/12)/2]/CGS * 360$ , APP is equal to $[(AP1/1 + AP31/12)/2]/CGS * 360$ , Note: "CCC, ACPL, ITD, APP, AR, AP, INV and CGS indicate Cash Conversion Cycle, Average Collection Period, Inventory Turnover in Days, Average Payment Period, Account Receivables, Account Payables, Inventory and Cost of Goods Sold respectively.
FRM	$Z = 1.2 * X_1 + 1.4 * X_2 + 3.3 * X_3 + 0.6 * X_4 + 0.999 * X_5$ , Where; $X_1$ is calculated as Operating Capital / Total Assets, $X_2$ is calculated as Retained Earnings / Total Assets, $X_3$ is calculated as Net Income / Total Assets, $X_4$ is calculated as Shareholder's Equity / Total Liabilities, $X_5$ is calculated as Sales Revenue / Total Assets, Z is Z-score
Independent Variables (CGI)	
BM	BM-Numbers of board meetings held during the year
BIND	BIND-Numbers of independent directors/Total numbers of directors
CEOD	CEOD-0 for Chairman and CEO being the same person,

BO	1 otherwise BO-Percentage of shares held by the board of directors
BS	BS-Numbers of board of directors
ACI	ACI-Numbers of independent directors on audit committee / Total numbers of directors on audit committee.
EXCFO	EXCFO- 1 if company have CFO or 0 otherwise
Control Variables	
FAGE	FAGE-Number of years since the firm was incorporated
FS	FS-Logarithm natural of total assets”
FL	FL-Total Debts/Total Assets”
FGROWTH	FGROWTH-current year sales - previous year sales) / previous year sales

To probe the effect of CGI on working capital and firm's risk, the following econometric models are used.

$$CCC_{it} = \beta_0 + \beta_1 CGI_{it} + \beta_2 FR_{it} + \beta_3 FAGE_{it} + \beta_4 FGROWTH_{it} + \beta_5 FSIZE_{it} + \beta_6 FL_{it} + E_{it} \text{-----} (1)$$

$$FR_{it} = \beta_0 + \beta_1 CGI_{it} + \beta_2 CCC_{it} + \beta_3 FAGE_{it} + \beta_4 FGROWTH_{it} + \beta_5 FSIZE_{it} + \beta_6 FL_{it} + E_{it} \text{-----} (2)$$

Where; CCC refers to Cash Conversion Cycle. CGI is Corporate Governance Index. FR represents Financial Risk. FAGE is Firm Age, FSIZE is Firm Size, FGROWTH is Firm Growth and FL is Financial Leverage.

## Results

Table 2 displays that the mean value of CCC is 61.95, median value 56.80 and value of standard deviation is 44.74. The mean value of CGI is 23.84 and median value is 23.00. 37 and 18 are the CGI's maximum and minimum values respectively. The value of standard deviation is 2.99. The value of mean and median for FR are 1.57 and 1.58 respectively. 2.41 is value of standard deviation for FR. Firm's age (FAGE) is the control variable used in this study. The mean value of FAGE is 32.25 and the value of median is 27.00. The mean value of the FGROWTH is 0.21 with the median value of 0. The average value of firm size is 14.89. The value of Median for the Firm's Size is 14.87430. Standard Deviation for the distribution is 1.541157. The value of mean and median for FL are 0.66 and 0.71 respectively.

Table 2: Descriptive Statistics

Variables	CCC	CGI	FR	FAGE	FGROWTH	FSIZE	FL
Mean	61.95	23.84	1.57	32.25	0.21	14.89	0.66
Median	56.80	23.00	1.58	27.00	0.00	14.87	0.71
Max	199.25	37.00	9.88	72.00	18.79	18.76	0.99
Min	0.00	18.00	-29.11	4.00	-1.00	10.70	-0.24
Std. D	44.74	2.99	2.41	13.45	1.39	1.54	0.21

Table 3 indicates the Correlation Analysis. Here, CCC has negative correlation with CGI (-0.11) and weak correlation with FR (-0.02), FAGE (-0.03), FSIZE (-0.06) and FL (-0.07). CCC has positive correlation with FGROWTH (0.14). CGI has positive relationship with all variables FR (0.04), FAGE (0.04), FGROWTH (0.02), and FSIZE (0.22) except FL (-0.09). FR has positive association with FAGE (0.01) and FSIZE (0.06). FR has negative correlation with FGROWTH (-0.18) and FL (-0.14). FAGE has positive relationship with FGROWTH (0.08) and FSIZE (0.09). FAGE has negative and weak correlation with FL (-0.02). FGROWTH has positive association with FL (0.04). FGROWTH has negative and weak relationship with FSIZE (-0.02). FSIZE has negative correlation with FL (-0.05).

Table 3: Correlations Matrix

Measures	CCC	CGI	FR	FAGE	FGROWTH	FSIZE	FL
CCC	1.00						
CGI	-0.11	1.00					
FR	-0.02	0.04	1.00				
FAGE	-0.03	0.04	0.01	1.00			
FGROWTH	0.14	0.02	-0.18	0.08	1.00		
FSIZE	-0.06	0.22	0.06	0.09	-0.02	1.00	
FL	-0.07	-0.09	-0.14	-0.02	0.04	-0.05	1.00

Regression analysis is used to measure the effect of independent variables on dependent variables. Results of estimation equation are as below: Table 4 shows the results for the impact of CGI on WCM. The table shows that there is a negative association between CGI and WCM. The negative coefficient of CGI indicates that 1% increase (decrease) in CGI causes to decrease (increase) 1.81% of CCC. The p-value (0.015200) is less than 5%. The table also shows that the results of estimated regression model support the first hypothesis. The results are similar with Ali and Shah (2017), Claire et al., (2015), Ayat et al. (2016) and Obradovich, Gill and Bigger (2013).

Table 4: Regression results of CCC as predictor

Measures	Coeff.	SE	t-value	p-value
C	35.135000	26.265570	5.144950	0.000000***
CGI	-1.808162	0.741584	-2.438244	0.015200***
FR	-0.062095	0.917762	-0.067659	0.946100
FAGE	-0.138230	0.161146	-0.857795	0.391500
FGROWTH	4.949763	1.577638	3.137452	0.001800***
FSIZE	-0.874396	1.441149	-0.606736	0.544400
FL	-20.291600	10.130280	-2.003064	0.045800**
R <sup>2</sup>	0.47070			

Note: “\*significance levels at 10%, \*\* significance levels at 5% and \*\*\*significance levels at 1%”

R-square measures the strength of linear relationship in the regression. The value of adjusted R-squared is (0.47070). F-statistics determines the appropriation of model for estimation. The F-value is (3.39997) and Prob. (F-statistics) is (0.002760). FR has negative and insignificant impact on CCC as the coefficient (-0.062095) is negative. The P-value of FR is (0.946100). FAGE and FSIZE also have insignificant negative relationship with CCC. The coefficients of FAGE and FSIZE are (-0.138230) and (-0.874396) respectively. FGROWTH has significant positive impact on CCC as the coefficient (4.949763) is positive. The positive coefficient of FGROWTH shows that 1% change in CGI brings 4.949763 units variation in CCC. FL has significant negative relationship with CCC as the coefficient is negative.

Table 5 illustrates the result for the impact of CGI on Financial Risk (FR). The table indicates that there is an insignificant liaison between CGI and Financial Risk (FR). The value of coefficient for FR is (0.021959) and P-value of FR is (0.583600). The result shows that corporate governance index (CGI) is insignificantly correlated with financial risk (FR). According to the result shown in Table 5, CCC is negatively associated to FR as the coefficient is negative. The value of coefficient for CCC is (-0.000179). The result shows that CCC has insignificant relationship with FR. FAGE is also insignificantly correlated with FR. FAGE has positive effect on FR as the coefficient of FAGE is positive. FSIZE is positively related with FR as the coefficient is positive but has insignificant effect on FR.

Table-5: Regression results of FR as predictor

Measures	Coeff.	SE	t-value	p-value
C	0.874153	1.452041	0.602017	0.547500
CGI	0.021959	0.040031	0.548557	0.583600
CCC	-0.000179	0.002638	-0.067659	0.946100
FAGE	0.003406	0.008646	0.393910	0.693900
FGROWTH	-0.302484	0.084284	-3.588854	0.000400***
FSIZE	0.075970	0.077212	0.983908	0.325700
FL	-1.486723	0.540850	-2.748865	0.006200***
R <sup>2</sup>	0.56012			

Note: “\*significance levels at 10%, \*\* significance levels at 5% and \*\*\*significance levels at 1%”

### Conclusions and Discussions

The study is designed to demonstrate the effect of CGI on WCM and financial risk (FR) of Pakistani listed manufacturing firms. The research findings reveal a significant negative impact of CGI on WCM. The result suggests that, in order to reduce cash conversion cycle (CCC), numbers of meetings of a firm board provides more effective guidelines. The independent directors of a firms’ board also plays a vital role in WCM, hence, lessen the CCC. A reduced CCC indicates an efficient WCM. Board Ownership (BO) is positively correlated with WCM. Board Size (BZ) also has positive association with WCM recommending that massive numbers of directors have more value compared to small-scale of directors. As large number of directors give more and unique strategies to manage the working capital. Independence of Audit Committee (IAC) has significant relationship with WCM. Suggesting that IAC boosts the effectiveness of working capital management by doing accounting functions efficiently. The result shows that Existence of Chief Financial Officer (EXCFO) has positive impact on WCM. Chief Financial Officer (CFO) reduces the CCC by managing the financial actions effectively.

The study’s findings also examine that FR has insignificant negative relationship with CCC. Firm’s Age (FAGE) is also insignificantly related to CCC. Firm’s Growth (FGROWTH) and Financial leverage (FL) has significant positive impact on CCC. The empirical results concluded that CGI has insignificant impact of FR while it has significant impact on WCM.

**Recommendation**

The managers of companies are advised to increase the CGI for better management of working capital and risk.

**References**

- Achchuthan, S., & Rajendran, K. (2013). Corporate governance practices and working capital management efficiency: special reference to listed manufacturing companies in Sri Lanka. *In Information & Knowledge Management*, 3(2), 216-226.
- Fiador, V. (2016). Does corporate governance influence the efficiency of working capital management of listed firms: Evidence from Ghana. *African Journal of Economic and Management Studies*, 7(4), 482-496.
- Flodberg, D., & Nadjari, D. (2013). The Link between Corporate Governance and Firm Performance in the Nordic Countries. Available at: [https://gupea.ub.gu.se/bitstream/2077/33348/1/gupea\\_2077\\_33348\\_1.pdf](https://gupea.ub.gu.se/bitstream/2077/33348/1/gupea_2077_33348_1.pdf). Accessed on June 05, 2018.
- Gill, A. S., & Biger, N. (2013). The impact of corporate governance on working capital management efficiency of American manufacturing firms. *Managerial Finance*, 39(2), 116-132.
- Iqbal, M. J., & Shah, S. Z. A. (2012). Determinants of systematic risk. *The Journal of Commerce*, 4(1), 47-56.
- Karani, H. K. (2013). The effect of corporate governance on working capital of manufacturing firms listed at the Nairobi securities exchange. *Unpublish master Thesis University of Nairobi*. Available at: <https://chss.uonbi.ac.ke/sites/default/files/chss/PROJECT-HENRY%20KARANI-D61%2063370%202011.pdf>. Accessed on July 25, 2018.
- Kaur, H. V., & Singh, S. (2013). Managing efficiency and profitability through working capital: An empirical analysis of BSE 200 companies. *Asian Journal of Business Management*, 5(2), 197-207.
- Lattemann, C. (2014). On the convergence of corporate governance practices in emerging markets. *International Journal of Emerging Markets*, 9(2), 316-332.



- Li, H., Jahera Jr, J. S., & Yost, K. (2013). Corporate risk and corporate governance: another view. *Managerial Finance*, 39(3), 204-227.
- Mugo, C. P. N. (2015). The impact of corporate governance on working capital management efficiency of Kenyan listed firms. Available at: <http://hdl.handle.net/11071/4363>. Accessed on June 16, 2018.
- Parigi, Bruno Maria and Pelizzon, Lorian and von Thadden, Ernst-Ludwig (2015). Stock Market Returns, Corporate Governance and Capital Market Equilibrium (February 2015). CEPR Discussion Paper No. DP10392. Available at SSRN: <https://ssrn.com/abstract=2562917>
- Rutledge, R. W., Karim, K. E., & Lu, S. (2016). The Effects of Board Independence and CEO Duality on Firm Performance: Evidence from the NASDAQ-100 Index with Controls for Endogeneity. *Journal of Applied Business & Economics*, 18(2), 49-71.