

DOES CORPORATE GOVERNANCE AFFECT WORKING CAPITAL MANAGEMENT EFFICIENCY OF FIRMS? EVIDENCE FROM MANUFACTURING SECTOR OF PAKISTAN

¹Ammarah Chaudhry, ²Nisar Ahmad

^{1,2}Hailey College of Commerce, University of the Punjab, Lahore, Pakistan
amich9020@yahoo.com, nisar@hcc.edu.pk

ABSTRACT: This paper aims to investigate the effect of corporate governance on working capital management efficiency of manufacturing firms listed at Karachi Stock Exchange. The study utilized secondary data obtained from annual financial reports of the sample of 168 manufacturing firms for the period (2010-2013). Due to the presence of heteroskedasticity and autocorrelation, Feasible Generalized Least Square was carried out. The results revealed that corporate governance practices have a significant influence on working capital management efficiency. The study provides insight to the management and owners of manufacturing firms to improve their corporate governance practices in order to enhance working capital management efficiency.

Key words: Working capital management efficiency, corporate governance practices

1. INTRODUCTION

Working capital management is extremely important for the firms because if managed properly, it enhances the profitability and liquidity position of firms. If working capital is poorly managed or when working capital is allocated more than required, the benefits of short term investment are reduced and it pictures the inefficiency of management. On the other hand, if it is allocated more than required, the company may be unable to take advantage of many investment opportunities or may be subject to short run liquidity crises.

Many research studies have been carried out to get understanding on the factors that affect working capital management such as Political situation [1-3], Economic and business environment [4, 5], Industrial effects [6, 7], Legislation [8], Competition [1-3], Economic and business environment [4, 5], Industrial effects [6, 7], Legislation [8], Competition [6], Financing regulations [9, 10], Managerial practice/ Working capital policy [11-14], Performance measurement system [15], Information technology [16], Employees behavior [17], Investment policy [18, 19], Supply chain and production management [20, 21], Shareholders wealth [6, 22], Inventory management [12, 23], Payable management [24, 25], Credit policy [24, 26], Employees financial knowledge [27, 28], Capital expenditure [29] and Firm size [30]. Little evidence seemed in existing literature about the effect of corporate governance on the efficiency of working capital management.

Corporate governance practices are designed in order to protect the concerns of principals from their agents. Nevertheless, effective corporate governance not only build and sustain sound corporate culture in which management is urged to act in such a way that enhances the shareholder's wealth but it also ascertains that company's resources are managed efficiently [31]. The decisions relating to the efficient management of working capital are strategic by nature. Thus, a significant characteristic of corporate governance is to enhance the performance of a firm by assuring effective management of working capital [32].

Corporate governance counts for financial development by growing the flow of finances to the capital market. In developing countries, serious heed to the significance of corporate governance was given after East Asian financial crises. Securities and Exchange Commission of Pakistan issued Code of Corporate Governance in March 2002 so as to

reinforce the regulatory mechanism and its implementation. The code of corporate governance is the most important stride in corporate governance reforms in Pakistan. The espousal of Code of Corporate Governance has ascertained the transparency and accountability in corporate financial reporting framework which in turn has upgraded the overall business structure and environment [33].

Therefore, the present study intends to analyze the impact of corporate governance on working capital management efficiency and on components of working capital management, i.e. account receivable management efficiency, account payable management efficiency, inventory management efficiency and cash conversion cycle management efficiency of manufacturing firms listed at KSE.

2. LITERATURE REVIEW

A brief account of previous studies on the relationship between corporate governance and working capital management efficiency is provided here.

Moussawi *et al.* [30] examined various factors that influence working capital management. They collected the data from 1990 to 2004 on US public firms and conducted multiple regression analysis which revealed that the industry practices, future firm sales growth and firm size have significant positive impact whereas executive compensation, CEO stock ownership and the proportion of the outside directors on the board have a significant negative impact on working capital management efficiency of firms. They suggested that the performance of working capital management becomes better as the board independence increases and as the CEO compensation becomes larger.

Zariyawati, Taufiq, Annuar and Sazali [34] investigated both firm-specific and macroeconomic factors that significantly affect the management of working capital. They collected the data on 119 non-financial firms listed in Malaysia from 2000-2006. Pooled OLS estimation revealed that firm size, growth opportunity and inflation rate have significant negative relationship with cash conversion cycle whereas economic growth is significantly positively correlated with cash conversion cycle. They also reported insignificant negative impact of total directors, independent director proportion and debt ratio on cash conversion cycle.

Palombini and Nakamura [35] examined the important elements affecting working capital management by collecting the data from 32 Brazilian firms listed at Sao Paulo exchange during the period 2001-2008. Multiple linear

regression analysis was conducted which revealed significant negative relationship between level of debt and working capital management. They did not detect any significant relationship between measures of management monitoring practices and working capital management. Results also suggested that the firms with lesser amount of free cash have larger amount of working capital.

The relationship between corporate governance and working capital management efficiency was highlighted by Gill and Biger [36]. They studied the impact of corporate governance on working capital management efficiency of American manufacturing corporations. Data was collected from 180 manufacturing companies listed on NYSE for a period of three years (2009 to 2011). Correlation analysis revealed significant positive association of CEO duality with account receivable management and account payable management efficiency; significant positive association of CEO tenure with current ratio; significant positive relationship between CEO duality and cash conversion efficiency, while board size was found to have significant negative association with cash conversion cycle and current ratio.

Similarly, Kajanathan and Achchuthan [37] investigated the effect of corporate governance practices on working capital management efficiency. They selected manufacturing firms from Colombo stock exchange from 2007 to 2011. Regression analysis showed that corporate governance has impact on working capital management efficiency. They concluded that in working capital management, current liabilities to total assets ratio is significantly influenced by the corporate governance practices whereas the corporate governance practices have no effect on cash conversion cycle and current assets to total assets ratio.

In another study, Achchuthan and Kajanathan [38] examined the significant difference between corporate governance practices and working capital management efficiency. Data was collected from 25 manufacturing companies listed at Colombo Stock exchange from 2007 to 2011. The study concluded that there is no significant mean difference between the efficiency level of working capital management across corporate governance practices as board committees, board meetings and board independence. There is no difference in the efficiency levels of working capital management of firms that have improved corporate governance, i.e. all 3 board committees, greater board independence and held more meetings as compared to those who did not hold more meetings, had less than 3 committees and less board independence. But there is a significant mean difference between the levels of current ratio across the leadership structure of the board of firms.

Another study on the relationship between corporate governance practices and working capital management efficiency was done by Kamau and Basweti [32]. Data was collected from 42 companies listed at Nairobi Securities Exchange from 2006-2012. Correlation and multiple regression analysis were performed to determine the relationship between corporate governance and working capital management efficiency. They found a weak but positive relationship of CEO tenure and board size with working capital management efficiency. They also found negative but weak relationship between board meetings and

working capital management efficiency. Further these findings were statistically insignificant. The results of these studies were opposite to those of Gill and Biger [36]. They emphasized that further studies should be carried out by employing larger samples and longer periods.

Dearth of empirical studies on the relationship between corporate governance and WCM efficiency particularly in the context of Pakistan is the main motivation for this study. Therefore, the present study will contribute to the existing literature on WCM by investigating the impact of corporate governance on WCM efficiency of manufacturing firms which seemed to be less emphasized by previous studies.

2.1 Hypotheses Development

Board of directors is responsible for devising policies and procedures for running the organization successfully, including policies relating to cash management, inventory management, account receivable and account payable management. Thus the board size plays a crucial role in efficient management of working capital [36]. Board size can improve the efficiency of working capital management because the larger boards bring greater expertise, managerial skills and resources, thus assisting the boards in making effective strategic decisions [39, 40]. Gill and Biger [36] reported that BS has negative and insignificant influence on ACP and ICP whereas positive insignificant impact on APP. Gill and Biger [36], Moussawi *et al.* [30] and Kajanathan and Achchuthan [37] reported negative impact of BS on CCC whereas Kamau and Basweti [32] reported positive impact of BS on Working capital management efficiency index.

Since, the board is involved in the decision making process pertaining to working capital management and formulates the working capital policies of the company, so the division of the board members into subcommittees enables them to handle specific tasks effectively. Kajanathan and Achchuthan [37] and Kamau and Basweti [32] found insignificant positive impact of BC on CCC.

The audit Committee also improves the working capital management efficiency by auditing and reporting the account receivables, account payables and inventory stock of the company [36]. Gill and Biger [36] found positive and insignificant impact of audit committee on ACP, ICP and APP and CCC.

Crucial decisions, including decisions relating to working capital management are taken at board meetings and the issues requiring immediate solution are also addressed in board meetings. Kajanathan and Achchuthan [37] reported positive insignificant impact of BM on CCC whereas Kamau and Basweti [32] found negative impact of BM on working capital management efficiency index.

The presence of outside directors on the board ascertains that the management contrives the most effective working capital management policies. So, board independence also improves working capital management efficiency. Palombini and Nakamura [35] found positive impact of BI on ACP and CCC whereas negative impact of BI on ICP. Moussawi *et al.* [30] reported negative impact of BI on CCC.

Based on the above discussion, current study suggests the following hypothesis;

H₁: There is a significant impact of corporate governance practices on account receivable management efficiency.

H₂: There is a significant impact of corporate governance practices on account payable management efficiency.

H₃: There is a significant impact of corporate governance practices on inventory management efficiency.

H₄: There is a significant impact of corporate governance practices on cash conversion cycle management efficiency.

3. RESEARCH METHODOLOGY

3.1 Data Description

This study used the secondary data that is obtained from the annual financial reports of the manufacturing firms listed at KSE from 2010 to 2013. These reports were taken from the websites of the firms, DSpace Repository, official site of the SECP and from LSE. The final sample consisted of 168 manufacturing companies listed at KSE resulting in 672 observations. The selection of the firms from different manufacturing industries is as follow: 58 firms from personal goods (textile), 28 firms from food producers (sugar), 21 firms form chemical sector, 24 firms from construction and material, 10 firms from automobiles and parts, 2 firms from forestry, 2 firms from beverages, 8 firms from engineering, 1 firm from electronic and electrical goods, 2 firms from tobacco, 8 firms from pharma. and biotech., 4 firms from industrial metal and mining.

3.2 Variables of the Study

3.2.1 Dependent Variables

Average collection period (ACP) = (Average account receivables / net sales) * 360 days

Average payment period (APP) = (Average account payables / cost of goods sold) * 360 days

Inventory turnover period (ITO) = (Average inventory / cost of goods sold) * 360 days

Cash conversion cycle (CCC) = Account receivable period + Inventory turnover period – Account payable period

3.2.2 Independent Variables

Board size (BS) = Number of directors serving on the board
 Audit Committee (AC) = Number of audit committee members

Board committees (BC) = Number of board committees

Board meetings (BM) = Number of board meetings

Board independence (BI) = Number of outside directors / total number of directors

3.2.3 Control Variables

Sales growth (SG) = (current year sales - previous year sales) / previous year sales

Firm size (FS) = average assets = (beginning assets value + ending assets value)/2

Profitability (ROA) = Return on assets (ROA) = net income after taxes / total assets

Leverage (L) = total liabilities / total assets

3.3 Estimation Technique

The present study utilized balanced panel data to perform all the estimations. In order to make the data normally distributed and to linearize the relationships, natural logarithm of BS, BC, AC, BM, FS and L were taken. Since, it was not possible to take natural logarithm of CCC, ACP, APP, ICP and SG because they contain positive, zero and negative values. Therefore, a more effective transformation called the “neglog transformation” [41] was applied.

The Pakistani manufacturing firms’ practices regarding corporate governance and working capital management were analyzed through descriptive statistics. In order to examine the effect of corporate governance practices on working capital management efficiency, pooled OLS regression analysis was conducted.

Subsequently, regression diagnostic tests were conducted to verify that the data met the assumptions inherent in the OLS and where to eliminate the problems present in panel data. Some of the problems in panel data are multicollinearity, autocorrelation and heteroskedasticity.

One way to estimate the unknown parameters in the presence of heteroskedasticity and serial correlation is to apply Generalized Least Square (GLS) regression in which the original variables are transformed. One form of GLS is FGLS which is used in the current study.

3.4 Model Specification

In order to test the research hypotheses, 4 models are constructed, which are portrayed below.

Model 1

$$ACP_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 BC_{it} + \beta_3 AC_{it} + \beta_4 BM_{it} + \beta_5 BI_{it} + \beta_6 SG_{it} + \beta_7 FS_{it} + \beta_8 ROA_{it} + \beta_9 L_{it} + \epsilon_{it}$$

Model 2

$$APP_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 BC_{it} + \beta_3 AC_{it} + \beta_4 BM_{it} + \beta_5 BI_{it} + \beta_6 SG_{it} + \beta_7 FS_{it} + \beta_8 ROA_{it} + \beta_9 L_{it} + \epsilon_{it}$$

Model 3

$$ICP_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 BC_{it} + \beta_3 AC_{it} + \beta_4 BM_{it} + \beta_5 BI_{it} + \beta_6 SG_{it} + \beta_7 FS_{it} + \beta_8 ROA_{it} + \beta_9 L_{it} + \epsilon_{it}$$

Model 4

$$CCC_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 BC_{it} + \beta_3 AC_{it} + \beta_4 BM_{it} + \beta_5 BI_{it} + \beta_6 SG_{it} + \beta_7 FS_{it} + \beta_8 ROA_{it} + \beta_9 L_{it} + \epsilon_{it}$$

4. RESULTS AND DISCUSSION

4.1 Descriptive Statics

Descriptive Statistics elaborate the characteristics of the data. Mean values depicts the manufacturing sector averages whereas standard deviation throws light on the sensitivity of the variables across firms and over time.

Table 1: Descriptive Statistics

Variabl e	Mean	Standard deviation	Minimum	Maximum
BS	7.7783	1.1215	6	13
BC	1.6786	0.7668	1	4
AC	3.2143	0.5196	3	6
BM	5.3557	2.4713	3	28
BI	0.6437	0.1948	0	1
ACP	67.9303	506.7442	0	8122.188
APP	123.3025	591.4746	0	9839.105
ICP	90.8306	303.9438	0	6737.924
CCC	35.4584	827.0857	-9711.625	8634.072
SG	0.2055	0.6023	-1	9.5501
FS	21.9434	1.3109	16.9005	25.0754
L	0.5976	0.4987	0.0235	9.8067
ROA	0.0645	0.1178	-1.2071	0.5337

The mean and standard deviation values of BS are 7.7783 and 1.1215 respectively, which shows that on average, Pakistani manufacturing firms contain 8 directors on their board and there are fewer variations on the board size which are also reflected from minimum and maximum values. The board size varies from 6 to 13.

From descriptive statics it can be inferred that on average, Pakistani manufacturing firms form 2 board committees, have 3 members on audit committee, hold 5 meetings during the year and also contain outside directors on their boards and variations in these variables are minimal.

When we look at the ACP, APP, ICP and CCC we can see that there are larger variations in these variables, which shows that working capital management policies of manufacturing firms are very sensitive. Their management continuously revise working capital management policies.

On average, Pakistani manufacturing firms lend credit to their customers for 68 days, sell their inventory within 91 days and make payment to their suppliers after 123 days. On average, Pakistani manufacturing firms take 35 days to start new cash conversion cycle.

4.2 Regression Analysis

First of all, pooled regression analysis was conducted and afterwards regression diagnostic tests were carried out. The variance inflation factor for all independent variables was calculated to check the existence of multicollinearity. The presence of heteroskedasticity was detected through Breusch-Pagan/Cook-Weisberg test for heteroskedasticity whereas the existence of autocorrelation was determined through Wooldridge test for autocorrelation. The results of these tests revealed the existence of heteroskedasticity and autocorrelation in the data series. Therefore, Feasible Generalized Least Square was carried out.

Gujarati and Porter [42] defined it as "The procedure of transforming the original variables in such a way that the transformed variables satisfy the assumptions of the classical model and then applying OLS to them is known as the method of generalized least squares (GLS). In short, GLS is OLS on the transformed variables that satisfy the standard least-squares assumptions. The estimators thus obtained are known as GLS estimators". One type of GLS is FGLS.

Feasible Generalized Least Square (FGLS) is suitable when heteroskedasticity and autocorrelation exist in panel data. When the autocovariance coefficient is unknown, then GLS can be implemented through FGLS. FGLS is estimated in 2 steps. In first step, estimate for unknown autocovariance coefficient is obtained and in second step, this estimate is used to implement GLS [42]. Therefore, the present study utilized the FGLS estimation technique to obtain unbiased results.

Table 2: Regression Diagnostics

Models	VIF	Breusch-Pagan test $p > \chi^2$	Wooldridge test $p > \chi^2$
ACP	1.22	0.0089	0.0000
APP	1.22	0.0014	0.1713
ICP	1.22	0.0441	0.0000
CCC	1.22	0.0000	0.0316

Impact of each predictor variable on ACP, APP, ICP and CC as shown in Table 3 is explicated in the paragraphs below, while all other variables are held constant. The $p > \chi^2$ for all

models is 0.000 which is less than 0.05. It means that all models are good fit.

Coefficient for BS is negative and significant for ACP, ICP and CCC whereas positively significant for APP. It means that any variation in board size has a significant influence on working capital management efficiency. Hence, manufacturing firms can improve their working capital management efficiency by increasing their board size. These results are consistent with Gill and Bigger [36], Moussawi *et al.* [30] and Kajanathan and Achchuthan [37]

Table 3: Feasible Generalized Least Square

Variables	ACP	APP	ICP	CCC
BS	-0.5169 (0.000)	0.5081 (0.008)	-0.1671 (0.022)	-0.8005 (0.002)
BC	-0.0712 (0.001)	0.2022 (0.000)	0.0477 (0.000)	-0.1188 (0.005)
AC	-0.4154 (0.000)	0.9374 (0.000)	-0.5770 (0.000)	-1.9786 (0.000)
BM	0.0646 (0.032)	-0.2004 (0.008)	0.0881 (0.000)	-0.0448 (0.539)
BI	0.2947 (0.000)	0.2470 (0.025)	-0.1484 (0.000)	-0.3029 (0.011)
SG	-0.4025 (0.000)	-0.2578 (0.032)	-0.4006 (0.000)	-0.3733 (0.000)
FS	-0.0864 (0.000)	0.1618 (0.021)	0.0294 (0.007)	-0.2560 (0.000)
L	-0.0673 (0.020)	0.0967 (0.000)	-0.1915 (0.000)	-0.3403 (0.000)
ROA	-0.3206 (0.001)	-1.9249 (0.000)	0.0707 (0.311)	1.7081 (0.000)
Constant	5.9989 (0.000)	-2.0584 (0.000)	4.2853 (0.000)	12.7302 (0.000)
Wald chi 2(9)	401.42 (0.000)	293.07 (0.0000)	1493.05 (0.0000)	222.14 (0.0000)

Coefficient for BC is negative and significant for ACP, and CCC whereas positively significant for APP and ICP. Kajanathan and Achchuthan [37] and Kamau and Basweti [32] found insignificant positive impact of BC on CCC. The study expected negative relationship between BC and ICP. According to the descriptive statistics, there is less variation in board committees whereas ICP is very sensitive overtime and across panels. Moreover, the sample includes firms from different sectors including the seasonal firms which operate in specific season such as sugar mills.

Further, the sample includes the firms from sectors where it may be necessary to keep sufficient stock and the value of stock is high such as engineering firms and automobile and parts manufacturing firms. Additionally, most of the firms have 2 committees in 2012 and 2013 as per requirement of Code of Corporate Governance of Pakistan, whereas inventory prices may also be high in these years due to inflation in the economy. These may be the reasons for positive impact of board committees on ICP.

Coefficient for AC is negative and significant for ACP, ICP and CCC whereas positively significant for APP. Audit committee improves working capital management efficiency by auditing accounts receivable, accounts payable and stock in trade which in turn, reduces agency conflicts and agency

costs. Gill and Biger [36] found positive insignificant impact of AC on ACP, ICP, APP and CCC.

Coefficient for BM is negative and significant for APP; negative and insignificant for CCC whereas positively significant for ACP and ICP. This is against our expectations. The study expect negative impact of BM on ACP and ICP and positive impact on APP because in board meetings important issues are discussed and policies are formulated so BM should improves working capital management efficiency. The reason for this might be that the directors may have authorized lower management to make short term decisions so they are not discussed in meetings.

The management may offer specific credit period to some customer, so the policy for these customers once set might not be discussed in meetings. One reason might be that the value of debtors and inventory increases with years due to inflation in economy and also the APP shortens because of increased purchases whereas the frequency of board meetings increases due to the increased importance given to corporate governance practices.

Descriptive statistics shows that there is growth in the sales of firms over time. Companies with growing sales volume require more raw material for production which leads to increase in purchases of companies. Greater purchases shorten the average payment period. Moreover, when we look at the data, we can see that there are fewer variations in the board meetings frequency as compare to CCC which is very sensitive over time and across firms which might be the reason for insignificant coefficient. Kajanathan and Achchuthan [37] reported positive insignificant impact of BM on CCC whereas Kamau and Basweti [32] found negative impact of BM on working capital management efficiency index.

Coefficient for BI is negative and significant for ICP which is consistent with Palombini and Nakamura [35]. It is also negative and significant for CCC. Moussawi *et al.* [30] reported negative impact of BI on CCC whereas coefficient of BI is positively significant for APP and ACP. Palombini and Nakamura [35] also found positive impact of BI on ACP. The outside directors ascertain that the management contrives the most effective account receivable management policies. The study expects negative impact of BI on ACP. One reason for positive relationship might be that the value of debtors increases over years due to inflation in economy and also the board independence increases due to the increased importance given to corporate governance.

5. CONCLUSION

The present study attempts to investigate the influence of corporate governance practices such as board size, board committees, audit committee, board meetings and board independence on overall efficiency of working capital management evaluated through cash conversion cycle and also on the efficiency of components of working capital management viz account receivable management efficiency, account payable management efficiency and inventory management efficiency.

The results revealed that board size, board committees and audit committee have significant negative influence on average collection period whereas board meetings and board independence have significant positive influence on average collection period which supported the first hypothesis. For

account payable management efficiency, board size, board committee, audit committee and board independence have significant positive influence on average payment period whereas board meetings have significant negative influence on average payment period. Therefore, second hypothesis is also supported.

In respect of inventory management efficiency, the results disclosed that board size, audit committee and board independence have significant negative influence on inventory conversion period. Board committees and board meetings have significant positive effect on inventory conversion period. Thus, third hypothesis of the study is supported.

Finally, for overall efficiency of working capital management, board size, board committees, audit committee and board independence have significant negative influence on cash conversion cycle. This shows that overall efficiency of working capital management can be enhanced by increasing the board size, constituting the board committees, by increasing the members of audit committee and by increasing outside directors which supported the forth hypothesis.

Therefore, it can be concluded that practicing good governance can improve working capital management efficiency of manufacturing firms. Nevertheless, Pakistani manufacturing firms should follow sound corporate governance practices if they wish to enhance working capital management efficiency which will ultimately increase their profitability. They should increase their board size, board committees, audit committee members and board independence. By practicing good governance, they will ultimately have check on management to ensure that the management contrives most effective working capital management policies and acts in the best interest of the owners.

REFERENCES

1. Carey, J.L., "Corporation working capital increases," *Journal of Accountancy*, **87**(6): 459-460(1949).
2. Ketchum, M.D., "Working-capital financing in a war economy," *Journal of Business of the University of Chicago*, **15**(4): 306-342(1942).
3. Ketchum, M.D., "Plant financing in a war economy," *Journal of Business of the University of Chicago*, **16**(1): 28-50(1943).
4. Herbst, A.F., "Some empirical evidence on the determinants of trade credit at the industry level of aggregation," *Journal of Financial and Quantitative Analysis*, **9**(03): 377-394(1974).
5. Horim, M.B. and Levy, H., "Management of accounts receivable under inflation," *Financial Management*: 42-48(1983).
6. Filbeck, G. and Krueger, T.M., "An analysis of working capital management results across industries," *Mid-American Journal of Business*, **20**(2): 11-18(2005).
7. Raheman, A., Qayyum, A., and Afza, T., "Sector-wise performance of working capital management measures and profitability using ratio analysis," *Interdisciplinary Journal of Contemporary Research in Business*, **3**(8): 285-303(2011).
8. Peel, M.J., Wilson, N., and Howorth, C., "Late payment and credit management in the small firm sector: Some

- empirical evidence," *International Small Business Journal* **18**(2): 17-37(2000).
9. Cocheo, S., "Bring us your rejects" or "factoring for profitability," *ABA Banking Journal*, **96**(6): 16(2004).
 10. Strischek, D., "A banker's perspective on working capital and cash flow management," *Strategic Finance*, **83**(4): 38-45(2001).
 11. Deloof, M., "Does working capital management affect profitability of Belgian firms?," *Journal of Business Finance and Accounting*, **30**(3): 573-587(2003).
 12. Edwards, J.R., Wagner, H.M., and Wood, W.P., "Blue Bell trims its inventory," *Interfaces*, **15**(1): 34-52(1985).
 13. Lazaridis, I. and Tryfonidis, D., "Relationship between working capital management and profitability of listed companies in the Athens stock exchange," *Journal of Financial Management and Analysis*, **19**(1)(2006).
 14. Teruel, P.J.G. and Solano, P.M., "Effects of working capital management on SME profitability," *International Journal of Managerial Finance*, **3**(2): 164-177(2007).
 15. Srivastava, S., "Using six sigma methodologies to optimize working capital management," *Corporate Finance Review*, **9**(1): 29-37(2004).
 16. Fairchild, A., "Intelligent matching: Integrating efficiencies in the financial supply chain," *Supply Chain Management: An International Journal*, **10**(4): 244-248(2005).
 17. Kumar, K.R., Ghicas, D., and Pastena, V.S., "Earnings, cash flows and executive compensation: An exploratory analysis," *Managerial Finance*, **19**(2): 55-75(1993).
 18. Appuhami, R., "Corporate investments and the dual-role of working capital: Evidence from Thailand," *Journal of Applied Management Accounting Research*, **7**(1): 53-62(2009).
 19. Seidner, A.G., "Investing excess working capital," *Management Accounting*, **71**(9): 24-27(1990).
 20. Hamlin, A.P. and Heathfield, D.F., "Competitive management and working capital," *Managerial and Decision Economics*, **12**(3): 207-217(1991).
 21. Bartezzaghi, E., Turco, F., and Spina, G., "The impact of the just-in-time approach on production system performance: A survey of Italian industry," *International Journal of Operations & Production Management*, **12**(1): 5-17(1992).
 22. Pass, C.L. and Pike, R.H., "An overview of working capital management and corporate financing," *Managerial Finance*, **10**(3): 1-11(1984).
 23. Raman, A. and Kim, B., "Quantifying the impact of inventory holding cost and reactive capacity on an apparel manufacturer's profitability," *Production and Operations Management*, **11**(3): 358-373(2002).
 24. Kolay, M.K., "Managing working capital crises: A system dynamics approach," *Management Decision*, **29**(5): 46-52(1991).
 25. Rafuse, M.E., "Working capital management: An urgent need to refocus," *Management Decision*, **34**(2): 59 - 63(1996).
 26. Ooghe, H., "Financial management practices in China: A case study approach to companies in the Shanghai region," *European Business Review*, **98**(4): 217-226(1998).
 27. Gitman, L.J. and Maxwell, C.E., "Financial activities of major US firms: Survey and analysis of Fortune's 1000," *Financial Management*: 57-65(1985).
 28. Cheatham, L. and Cheatham, C., "Utilizing financial statements as cash flow planning and control tools," *Managerial Finance*, **19**(8): 35-49(1993).
 29. Bereznicka, J.K., "Capital structure as a determinant of working capital management: Empirical evidence across group of firms in the EU countries," *Journal of International Scientific Publications*, **8**: 36-54(2014).
 30. Moussawi, R., LaPlante, M., Kieschnick, R., and Baranchuk, N. *Corporate working capital management: determinants and consequences*. in *36th Financial Management Association Conference*. 2006.
 31. Wambua, K.P., *The effects of corporate governance on savings and credit co-operatives (SACCOS) financial performance in Kenya*. 2012.
 32. Kamau, S.M. and Basweti, K.A., "The relationship between corporate governance and working capital management efficiency of firms listed at the Nairobi securities exchange," *Research Journal of Finance and Accounting*, **4**(19): 190-199(2013).
 33. Javid, A.Y. and Iqbal, R., "Corporate governance in Pakistan: Corporate valuation, ownership and financing," *Working Papers & Research Reports*, **2010**(2010).
 34. Zariyawati, M.A., Taufiq, H., Annuar, M.N., and Sazali, A. *Determinants of working capital management : Evidence from Malaysia*. in *International Conference on Financial Theory and Engineering*. 2010. IEEE.
 35. Palombini, N.V.N. and Nakamura, W.T., "Key factors in working capital management in the Brazilian market," *Revista de Administração de Empresas*, **52**(1): 55-69(2012).
 36. Gill, A.S. and Biger, N., "The impact of corporate governance on working capital management efficiency of American manufacturing firms," *Managerial Finance*, **39**(2): 116-132(2013).
 37. Kajanathan, R. and Achchuthan, S., "Corporate governance practices and its impact on working capital management: Evidence from Sri Lanka," *Research Journal of Finance and Accounting*, **4**(3)(2013).
 38. Achchuthan, S. and Kajanathan, R., "Corporate governance practices and working capital management efficiency: Special reference to listed manufacturing companies in Sri Lanka," *Information and Knowledge Management*, **3**(2): 216-226(2013).
 39. Dalton, D.R., Johnson, J.L., and Ellstrand, A.E., "Number of directors and financial performance: A meta-analysis," *Academy of Management Journal* **42**(6): 674-686. (1999).
 40. Samuel, E.A., "The impact of bigger board size on financial performance of firms: The Nigerian experience " *Journal of Research in International Business and Management*, **3**(3): 85-90(2013).
 41. Whittaker, J., Whitehead, C., and Somers, M., "The neglog transformation and quantile regression for the analysis of a large credit scoring database," *Journal of the Royal Statistical Society. Series C (Applied Statistics)*, **54**(5): 863-878(2005).
 42. Gujarati, D.N. and Porter, D.C., *Basic Econometrics*. The McGraw Hill(2008).