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The Role of Corporate Governance and Working Capital Management on a Sustainable Returns: An evidence from the Non-Financial Sector of Pakistan.

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Abstract

As this study was conducted to investigate the impact of some corporate Governance variables and working capital management on financial performance of Non-financial KSE 100 Index firms listed at Pakistan Stock Exchange (PSX). The independent variables used for this study were Board size, Board composition, Board meetings, CEO duality, working capital, operating cycle, inventory turnover ratio and dependent variable firm performance was gauged by ROA.

The two control variables Firm size, and firm age were also used for this study. The major objectives for this study were to analyze the impact of Board size, Board composition, Board meetings, Board composition, CEO duality, operating cycle, current ratio and inventory turnover ratio on firm performance of Non-Financial KSE 100 Index firms listed at Pakistan Stock Exchange (PSX). This study was quantitative and descriptive in nature.

The Population of interest for this study was firms from different sectors of KSE 100 index listed at Pakistan Stock Exchange and had operated during the period of 2011 to 2019. Initially 50 Non-Financial KSE 100 Index firms listed at (PSX) were taken as sample for this study and then due to non-availability of data for some companies, a sample of 36 firms taken as final sample

To analyze the collected data Descriptive statistics, Correlation matrix, Multiple-linear regression analysis, F statistics and fixed and random effect test, Hausman test and Wooldridge test for serial correlation were performed by using STATA software. Fixed and random regression analysis was used to test the Hypothesis of study and to establish the relationship between the dependent variable firm performance and the independent variables of corporate governance

Keywords: Corporate Governance, Working Capital Management, Sustainable Returns, Multiple-linear regression analysis, Board composition.

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Introduction and literature review

In contemporary circumstance when whole world has become a global village firm faces a lot of challenges while making decisions regarding any sort of affairs. Determining a suitable combination of all aspects in order to achieve overall economic prosperity is one of the most important strategic decisions public organizations are confronted with.

Corporate governance is essential in many ways for the distribution of resources, fulfilling financing requirements of the firm, enhancing the confidence of investors in firm's activities and improving capital markets. The most important function of corporate governance is to inject confidence in investors and safeguard their interests. Countries with weaker or poor mechanism for investor's protection have smaller capital markets (La Porta *et al,* 1997).

Development of Corporate Governance in Pakistan

In past couple of decades, need of an effective and standardized code of corporate governance was realized by Policy makers, regulators, investors and participants of capital market for the purpose of proper monitoring, accountability and alignment of interests between managers and shareholders that is called agency problem (Epps and Ismail, 2009). Corporate governance mechanism overall objectives are to benefits all the stakeholders of firms by bringing transparency in its operations, society and Economy as whole. The concept of corporate governance is not very old and well known in Pakistan. Majority of Pakistani firms still have poor internal & external corporate governance structure compared to develop Countries Firms. After opening the secondary markets for all the investors local and foreign on equal basis in 1991, Pakistan government took various steps for the betterment of corporate governance.

The most important initiative taken by government in connection with the development of corporate governance principles is the establishment of SECP (Security and Exchange commission of Pakistan) in 1999. Security and Exchange commission of Pakistan was established under light of Securities and Exchange Ordinance 1969, Companies ordinance 1984 and SECP act 1997.

The main purpose of establishing Security and Exchange commission of Pakistan was to develop an efficient & modern corporate sector, and a capital market on the basis of sound corporate governance principles to boost the overall economic growth.

Security and Exchange commission of Pakistan (SECP) became functional on January 1, 1999 and issued its first Codes of Corporate Governance (CCG) with the collaboration of Institute of Chartered Accountants of Pakistan (ICAP) on March 28, 2002 as a regulatory body in order to protect interests of diversified stakeholders. The Code of Corporate Governance (CCG) 2002 introduced by SECP is based upon the principles acknowledged internationally and spread transparency, openness and accountability in company's operations.

According to CCG 2002 listed companies required to publish annual reports and a report that shows their compliance with corporate governance best practices. External Auditors reviewed and certify these reports and make sure that companies are operated according to corporate governance principles.

The Code of Corporate Governance (2002) was criticized by companies and commentators in many ways. They thought complying with Code of Corporate Governance would be very expensive and also believed that there were many practical hurdles to implement Codes. One of the valid points raised by organizations was the lack of appropriate expertise to implement corporate governance best practices in Pakistan.

Regardless of criticism development of CCG (2002) is a big break-through for corporate governance practices in history of Pakistan. The Security and Exchange commission of Pakistan (SECP) has made CCG (2002) as a component of listing stock exchange regulations. Companies listed in Stock Exchange have to comply following listing standards:

Aims and objectives

The aim of this study is to check the association among the selected variables. The impact of WC (current ratio, inventory turnover ratio and operating cycle,) and CG (Board composition, Board size, Board meeting and CEO duality) on return on asset will be examined.

Following are the core objectives of the ongoing dissertation:

- ✓***Objective 1:*** To examine the impact of current ratio (WC) on return on asset.
- ✓***Objective 2:*** To investigate the impact of operating cycle (WC) on return on asset.
- ✓***Objective 3:*** To investigate the impact of inventory turnover ratio (WC) on return on asset.
- ✓***Objective 4:*** To examine the impact of board composition (CG) on return on asset.
- ✓***Objective 5:*** To examine the impact of board size (CG) on return on asset.
- ✓***Objective 6:*** To investigate the impact of board meeting (CG) on return on asset.
- ✓ ***Objective7:*** To investigate the impact of CEO duality (CG) on return on asset.

Scope and significance of study

This study will enhance the understanding of importance of adopting Codes of Corporate Governance & working capital management and its competitive advantage to the firms. Findings of this study will be great use for Finance managers in order to understand the effects of Corporate Governance characteristics on firm's financial performance in Pakistan. This study will lessen the agency conflicts related to the separation of ownership and control by involving in active monitoring particularly in terms of decision making.

Most importantly, this study will contribute to existing literature by illuminating significant links between Corporate Governance variables and financial performance of Non- Financial firms in the developing country like Pakistan. The findings of the study will provide useful information to Policy makers and Security and Exchange Commission of Pakistan to develop more effective Corporate Governance mechanism that add values to firms by revising and modifying current Codes of Corporate Governance.

The findings of the study will also be benefitted Regulatory bodies such as Capital Markets Authority to improve on the framework for regulation as well as develop appropriate incentive package for the firms who adopt appropriate governance structures. This research will also be important for new Researchers to understand the relationship between Corporate Governance practices and firms Capital structure and will help them to find new research gap that may stimulate interest in further research on the topic in future.

Research Questions

On the basis of earlier discussion following research questions can be developed:

I. What is the impact of board composition (CG) on return on asset?
II. What is the impact of board size (CG) on return on asset?
III. What is the impact of board meeting (CG) on return on asset?
IV. What is the impact of CEO duality (CG) on return on asset?
V. What is the impact of Current Ratio (WC) on return on asset?
VI. What is the impact of Operating Cycle (WC) on return on asset?
VII. What is the impact of society Inventory Turnover Ratio (WC) on return on asset?

Corporate Governance and performance

In literature, the question of how to structure and administer an organization has long been debated. There are some ideas under the organizational economics paradigm that seek to answer parts of this question. The Transactional Cost Theory (Williamson, 1981), the Agency Theory (Jensen and Meckling, 1976), the Price Theory (Friedman, 1962), and the Property Right Theory are all examples of this type of theory (Coase, 1937).

These theories address various topics, including the significance of unique assets, the distinction between individual and residual rights, and the effect of limited knowledge on the result of economic transactions (Shafritz et al., 2011). According to Shafritz et al. (2011:243), these theories typically explain how an organization evolves and flourishes through a hierarchy of costs associated with uncertainty and information asymmetries, limited rationality, and cognitive barriers. Additionally, these ideas explain how an actor (manager) might be forced to act according to the principles (owner). To maximise shareholder value, a corporation's board of directors and executives work to represent the interests of shareholders. Agent-client conflict of interest, often known as the "agency problem," can arise for various reasons.

Monitoring and auditing mechanisms are among the steps used to address this issue. Corporate governance relies heavily on "agency cost," which is defined as "the expense incurred as a result of the agency problem." An organization's management is accountable to its shareholders and other stakeholders if it abides by standards known as "corporate governance" (Jensen and Meckling, 1976). The final result of these principles is regulating authority among stakeholders (Kusuma and Ayumardani, 2016). These concepts are said to guarantee the

company's efficiency, effectiveness, economy, and productivity (Jenkinson and Mayer, 1992). Implementation of these concepts in the local market improves performance for organizations.

Firm performance may be influenced by managerial qualities such as the composition of the board of directors, the ownership structure, the degree of diversification, and the amount of debt the company carries (Alias et al., 2017). Corporations are organized and controlled through corporate governance. By following these guidelines, we hope to guide the company competently. The board of directors is typically in charge of enforcing corporate governance policies. The shareholders appoint the board of directors and, in some cases, the auditors (Naimah and Hamidah, 2017).

In most cases, the auditors' job is to give a periodic or on-demand evaluation of the company's financial statements. Executive compensation, stock ownership by executives and directors, the board of directors' characteristics, and the age and duration of CEOs are all corporate governance mechanisms. Investors ' interests are usually protected on the board of directors' behalf. The percentage of independent directors/outside directors, the board's size, and the CEO's dual role are all measures of board characteristics. Principles of good corporate governance include accountability, fairness, and openness (Aras and Crowther, 2008a; Pauceanu, 2016).

Many stakeholders, including shareholders, employees, creditors, and the government, are involved in a company's governance structure. According to Aras and Crowther (2008b), good corporate governance has been linked to higher firm performance. To maximize returns for investors, it is commonly inserted. This study aims to determine whether or not excellent corporate governance in Bahrain contributes to better financial firm performance. This research seeks to agree or disagree with the findings of earlier scholars who have claimed that excellent corporate governance can increase firms' performance.

It has the potential to avert business scandals, fraud, and legal and criminal liability of the organization if appropriately implemented. A breakdown in this shared concept will lead to poor service, shoddy products, and a complacent and evil administration. Financial reports that are not adequately audited could lead to criminal investigations, leading to a company's insolvency (Kliestikova et al., 2017; Kliestik et al., 2018). Dishonesty and unethical dealings within the company can also trigger shareholders' fear, distrust, and disgust to cause them to leave the organization. Little research has examined whether Bahrain's corporate governance culture improves the company's return on assets and stock returns.

Since the 2011 passage of Bahrain's corporate governance code, there has been a research gap about the relationship between corporate governance and enterprises' performance in Bahrain. Bahrain's rising business industry has had difficulty attracting and retaining investment because of the increasing worldwide competition in the corporate sector. There must be a greater awareness of the importance of excellent corporate governance procedures for Bahrain's capital market to flourish. The implementation of sound corporate governance regulations has recently bolstered investor confidence and helped economic growth in Bahrain. The Central Bank of Bahrain and the Ministry of Industry, Commerce, and Tourism worked together to issue Bahrain's corporate governance code in 2011 (MoICT, 2010).

Specifically, knowing the divergence in examining situation there is an argument that the anticipated collision of CG on non-intermediated money owing will be disparate to the extra vastly supervised intermediated loans (Aldamen, et al, 2012).

An indispensible purpose of good CG is to alleviate lingering fatalities (Safari et al, 2015). In a similar sort of exploration of Ahmed and Hamdan, (2015) examined the collision of CG on performance of firms in Bahrain listed firms on a sample of 42 corporations covering the time span of 2007 to 2011 employing the ROE gauge.

The final results concluded that CG is considerably linked with firm performance in Bahrain. In another study Afrifa and Tauringana in 2015 offers substantiation of the diverse belongings of CG on the firm's financial performance of medium vs. small firms. The outcomes illustrated that BS has a significant and inverse blow on the performance of both sizes of corporations.

Similar to this exploration Najjar (2012) also tried to examine the influence of CG on the performance of insurance companies in Bahrain for the time span covering 2005 to 2010. His explorations concluded that FS, BS and number of big block-holders encompass noteworthy influence on performance of insurance companies by contrasting them in relation to the ROE.

Going towards the Arab states AlHaddad et al. (2011) scrutinized a test of 44 Jordanian companies registered in Amman Stock exchange covering the time span of 2000 to2007. The core purpose of this exploration was to find whether the CG and measures of performance are resolving the agency issue in the Jordanian corporations. Moreover, outcomes depict that CG is appreciably adding a value to the corporation.

Moving wide-ranging around Middle East states Gupta and Sharma (2014) strived to find out the impact of CG variables on performance of corporations in Indian and South Korean companies. Their study included the variables such as Board Constitution, Board Structure, Conflict of interest, Independent Directors Disclosure of information, and other Committees. Final outcomes concluded that CG has restricted collision equally on both the firm's financial performance and on its share price.

Working capital management and performance

Financial management rules require keeping track of a company's current assets and liabilities to pay short-term obligations while avoiding over-investment in short-term investments. Since Smith's groundbreaking paper in 1980, which suggested that short-term asset and liability management (WCM) is critical to a company's profitability, risk, and value, numerous other studies have reaffirmed the importance of WCM for the economic and financial viability of a company's long-term survival.

Maintaining a healthy working capital balance is therefore critical to a company's financial health and, by extension, its long-term prosperity. As a result of poor working capital management, a fall in profitability and a liquidity crisis may occur, threatening the organization's viability (Chen and Sensini, 2014; Ukaegbu, 2014).

Financial decisions made by a company impact the company's profitability or market value (Aras and Yildirim, 2018). Considering the importance of economic choices, estimating the financial needs of a firm, both short and long term, is critical. The firm's resources mustn't be over-or under-invested for this estimate to be accurate.

For a business to cover its operational costs and fulfill its short-term debt commitments, a finance manager must make critical financial decisions known as working capital management (WCM) (Ukaegbu, 2014). When working capital is not managed correctly, a company's capacity to continue as a going concern is compromised.

Lazaridis and Tryfonidis (2006) highlighted inefficient WCM as a crucial factor in the failure of both corporations and start-ups. Working capital management can be significantly impacted by managerial effectiveness (Prasad et al., 2019a, 2019b).

Short-term financing decisions have received less attention in previous research since the focus has been chiefly on long-term financial decisions. Interest in working capital as a crucial part of a company's overall assets has increased in recent years. There are two primary schools of thought regarding working capital management.

According to some academics, higher working capital investment has improved profitability, citing specific benefits (such as increased sales and improved customer relations) connected with working capital expansion (Smith 1987; Lazaridis &Tryfondis 2006; Baos-Caballero et al. 2012). However, other researchers have found that working capital investment does not necessarily improve profitability and may have the opposite effect.

Several studies have found that additional financing, increased financing costs, and locking funds in working capital can hurt profitability, leading to increased financial distress and the likelihood of bankruptcy. (Kim & Chung, 1990; Deloof, 2003; Ek& Guerin, 2011) (Kieschnick, 2013; Campos et. al., 2014). As a result of these two perspectives, it is difficult to determine and maintain suitable working capital levels because the level of working capital must consider the company and many economic conditions. Every business, tiny and medium-sized enterprises (SMEs) with limited access to capital markets and are heavily reliant on the banking system, must have sound policies and procedures for managing working cash (Chen et al., 2014).

Web Content Management (WCM) best practices Poor working capital management can cause a company to need more money to run its day-to-day operations than its competitors, negatively impacting the firm's finances. For example, if a corporation cannot satisfy the WC criteria, it may be able to redirect its investment money. Another risk is that a company can miss out on valuable investment possibilities in the future or be unable to adequately compensate its investors because of a lack of available liquidity.

This means that effective working capital management can enhance a business's financial performance. As a result of this heightened liquidity risk, short-term financing costs or operational risks such as stockouts, a lack of consumer stimulation, or business process disruptions may be experienced. Due to the opposing dynamics at work, an academic or practitioner in Finance is driven to analyse whether a corporation that is more adept at managing its working capital generates higher financial returns for investors.

Given those above, we undertook this study to see whether the efficiency with which a company controls its WC affects its financial performance. We examined Tobin's Q, a commonly used market statistic for economic performance, to understand better how the market views a company's success. According to our theory, enterprises that manage their WC more effectively should generate higher returns on equity through more effective use of the freed-up money. We examined the association between WCM efficiency and firm performance (ROE) to substantiate our hypothesis. Along with financial planning and decision-making, operational characteristics inherent in the type of company in which organisations function affect WCM.

The WCM is inconsistent across industries to Filbeck and Krueger (2005). Business technology, the operational cycle, and the level of competition all impact WCM somehow. An important factor in determining the amount of money allocated to WC is the company's motivation or nature (Hawawini et al., 1986).

There have been two approaches to studying WC in the WCM literature: a static approach and an operating cycle approach (Richards and Laughlin, 1980). Position, activity, and leverage all play a role in WC's comprehension (Smith and Begemann, 1997). This type of accounting, also known as position accounting, concentrates on the balance sheet's current asset and liability side and calculates WC as either net WC (existing assets less current liabilities) or current ratio.

It is possible to measure the efficiency of the working capital component of WC using the operating cycle concept, which is also known as activity measurement. This concept assesses the functional capital component's efficiency, whether as a cash conversion cycle, a weighted cash conversion cycle, a net trade cycle (Shin and Soenen, 1998), or a modified cash conversion cycle (Shin and Soenen, 1998). The working capital analysis is concerned with working capital financing, specifically the long-term and short-term aspects of working capital (Smith and Begemann, 1997). To get the most return on their WC investment with the least amount of investment, companies design their WC to maximise the quantity and duration of their WC investment (Nuhiu and Dermaku, 2017).

The operating cycle was created by Richards and Laughlin (1980) to measure the efficiency of WCM. Payable deferral periods are taken from inventory and receivable conversion periods to get CCC (Cash Conversion Cycle). To test the efficacy of WCM, CCC has been employed for a long time (Enqvist et al., 2014).

Faisal Mahmood (2019) also conducted a research to assess the" moderating consequence of volume/size and debt value on WCF-performance relation for China manufacturing corporations from yearly 2000 - 2017.For this purpose a panel data from 12609 observations for 18 years is collected. The method used for the analysis is "GMM" (Generalized Method of Movement technique). There is a strong observation that leverage & size carry a strong moderating impact on working capital finance and profitably relation.

In another exploration Mahadevan (2019) tried to explore the relation between the components of WCM components calculated by CCC techniques and organization’s performance and describing how electronic payment adoption (EPA) helps Indian firms to improve accounting collection Similarlry Godswill (2018) tried to elaborate the effect of WCM on organization’s performance, risk, assessment (value). Financial information of 497 corporations for time duration of 9 years from 2007-2016 is gathered and evaluated by implementing fixed effect regression model. The statistics was composed from Vietnamese corporations registered on stock exchange of non-financial companies.

The proxy for profitability used in this paper is ROI and operating cash cycle as a constituent WC. This research exhibits strong –ve correlation lies of organization’s performance and WC elements i.e., DSO, DSI, and DPO. The writer collectively is of the view that a –ve linkage appeared among NWC and risk, success and valuation of corporations.

M. Tahir and M.B.A. Anuar (2015) started a purpose-based study to find out the relation between WCM and organization's performance in Textile sector of Pakistan. An efficient WCM will lead towards success cycle and persistence of business and pitiable & care free WC efficiency might go to bankruptcy or default of business. So, this study would be beneficial for other sectors in Pakistan. To carry on research a specimen of 127 organizations registered on PSX from 2001 to 2012 is collected. The dynamic panel method named GMM is used in the research study.

The components used for working capital management are; ACP, inventory turnover in days, and APP, cash conversion cycle, net TC, ratio of CA to total assets, ratio of CAto sales, ratio of CA to operating income, current ratio, CTR, net WC level, ratio of short-term obligation to total resources and proxy used for profitability is ROA,and controlled variables used are size, growth, debt ratio, GDP, interest and inflation".

The research outcomes indicated ACP, NWCL, CATOI, CATS, CLTTA, has negative relation with ROA whereas other constituents of WC have positive relation with success. So far control variables are concerned size & growth has +ve relation with performance and debt ratio, GDP, interest and inflation have negative relationship with ROA. This study highlights that by making and applying better working capital policies, the profitability can be enhanced.

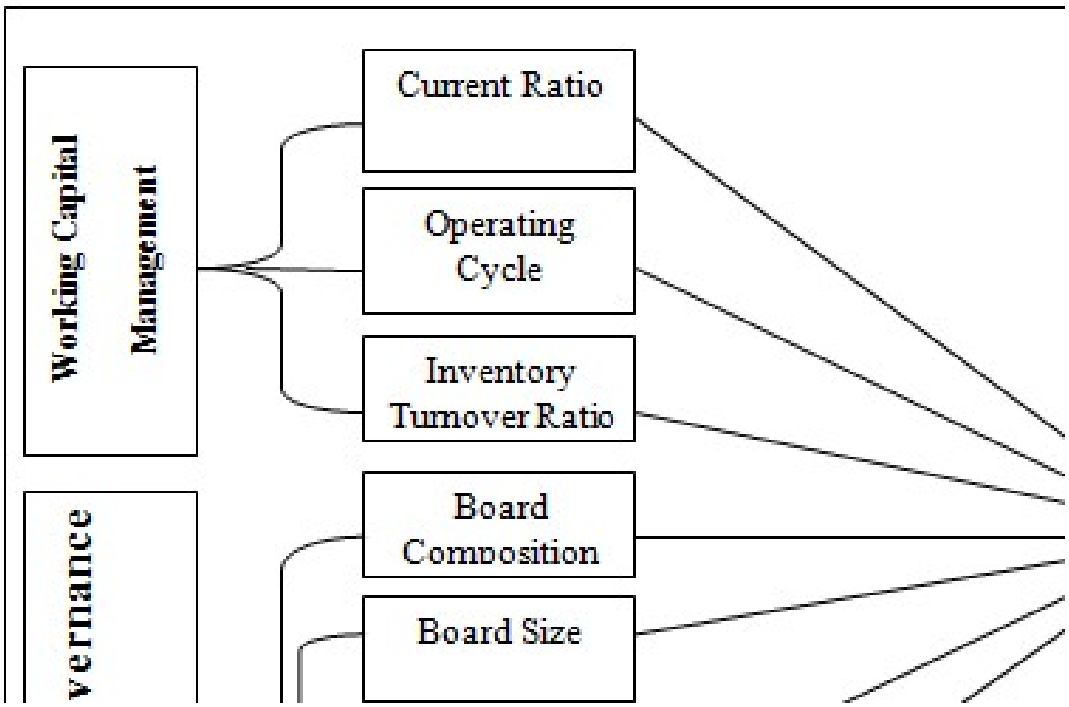
Research methodology

The Population of interest for this study is all the firms of KSE 100 index listed at Karachi Stock Exchange and had operated during the period of 2011 to 2016. The KSE 100 index is made up from all the firms listed at Pakistan stock Exchange divided into 14 economic groups. Criteria for selection of Companies for KSE 100 index is based on two things (1) Sector representation (2) Market capitalization.

One company with highest market capitalization from each sector except open end mutual funds and remaining companies on basis of highest market capitalization in descending order irrespective to sector are selected to make KSE 100 Index

Conceptual Framework

In short drawn framework may be separated into two parts to achieve the intended grail of this study.



Developed Hypothesis

On the basis of above given frame following hypotheses can be formed:

- **H1:** Board composition (CG) has significant impact on return on asset.
- **H2:** Board size (CG) has significant impact on return on asset.
- **H3:** CEO duality (CG) has significant impact on return on asset.
- **H4:** Board meeting (CG) has significant impact on return on asset.
- **H5:** Current ratio (WC) has significant impact on return on asset.
- **H6:** Operating ratio (WC) has significant impact on return on asset.
- **H7:** Inventory turnover ratio (WC) has significant impact on return on asset.

Econometrics Models:

In above mentioned frame work as dependent variables used is performance of the business and seven independent variables Board Composition, Board Size, CEO Duality, Board Meetings, Current Ratio, Operating Cycle, Inventory Turnover Ratio and two controlled variables Firm Size & Age were used to explore the mutual relationship of these variables.

So, regression equations that can be developed are:

$$Y = a + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \beta 5X5 + \beta 6X6 + \beta 7X7 + \beta 8X8 + \beta 9X9 + \varepsilon$$

Interpretation:

Y = Return on Assets

a = Constanta

X1 = Board Composition

X2 = Board Size

X3 = CEO Duality

X4 = Board Meetings

X5 = Current Ratio

X6 = Operating Cycle

X7 = Inventory Turnover Ratio

X8 = Firm's Size

X9 = Firm's Age

ε = Error term

Variables Measurements

In our study there ten variables are used out of which seven are independent two are controlled and one is Dependent variable. Researcher measures these variables in the following way to use them in this research.

Measurements of dependent Variable:

Return on Asset

The different researcher has used different proxies to measure profitability.The most commonly measure used for measuring performance/profitability proxy is "Return on Assets (ROA)" and is determined by "net profit divided with total assets". This ratio is to be observed by Wang in 2002, Samiloglu and Demirgunes in 2008, Karaduman et al. in 2010. Thus, in this study the above-mentioned measure is considered as explained variable for the measurement of profitability. Mathematically it can be written as;

"Return on Assets = Net Profit / Total Assets".

Independent Variables Measurements

Board Composition

For this study corporate governance proxy board composition is also used as independent variable. The ratio of Number of Non-Executive directors to total number directors on board is used as measure of Board composition. This measure of board composition is consistent with past researches (Abor, 2007; Kajananthan, 2012;Sheikh and Wang, 2012; Heng et al, 2012;Ahmadpour, 2012; Achchuthan et al, 2013; Ali et al, 2014; UWUIGBE, 2014; Purag et al 2016).Board composition have mixed results regarding effect on capital structure so in this study researcher test the effect of board composition towards capital structure of Non- financial firms KSE 100 Index.

Board Size

The Board of director's size is one of the proxies of the corporate governance used as independent variable for this study. Board size is measured as total number of directors serves on the board of a company. This measurement of board size is consistent with many prior studies (Abor, 2007; Bokpin& Arko, 2009; Rehman et al, 2010;Vakilifard et al, 2011; Ahmadpour, 2012; Achchuthan et al, 2013;Karmozdi and Karmozdi, 2013; UWUIGBE, 2014; Ali et al, 2014; Abobakr and Elgiziry, 2015; Corsi and prencipe, 2015;Jaradat, 2015; Purag et al 2016;Bajagai et al, 2018).This study aims to analyze the effect of board size towards capital structure of Non-financial firms KSE 100 Index.

CEO Duality

If a person holds both Chief Executive Official (CEO) and Board Chairman Positions of a company at the same time it is called CEO duality. For this study CEO duality is dummy variable, 1 if CEO is the Chairman, 0 otherwise. This measure of CEO duality is consistent with some past studies (Abor, 2007;Vakilifard et al, 2011; Kajananthan, 2012;Ahmadpour et al, 2012; Karmozdi and Karmozdi, 2013).

Board Meetings

Board meetings are also a proxy of corporate governance used as independent variable for this study. Total number of Board meetings held during the year is the measure of independent variable board meetings for this research. This measure of Board meetings is consistent with previous researches (Rehman et al, 2010; Saad, 2010;Kajananthan, 2012;Achchuthan et al, 2013; Ali et al, 2014). In this study researcher try to analyze the impact of Board meetings on Capital structure of Non- financial firms KSE 100 Index.

CR (Current Ratio)

The working capital ratio is observed to consider liquid status of an organization and is determined by dividing floating assets with current obligations. It has much evidence from literature a -ve association between fluidity position of firm and performance. Its measurement is based on the following formula

"Current Ratio= Current Assets/ Current Liabilities"

ITD (Inventory turnover in days)

The ratio ITD is used to find out number of days needed to transform stock into revenue (cash).This metric basically shows amount of stock. Normally this substitute variable is considered to show stock strategy. By decreasing this time period for inventory, an organization could improve its profitability.

Its measurement is based on the following formula:

"Inventory turnover (days)= [Inventory*365]/Cost of sales"

Operating cycle

The operating cycle (OC) shows average time span needed by a business to made initial cash outflow for producing goods, sold goods and received cash from consumers in the exchange of goods. This method is very beneficial for estimating the required need of working capital which a company is needed for maintaining good business or for growing business.

We can also understand that investing and managing accounts receivable could affect decision relating to investing in inventory. It is used in analysis after taking natural log of below formula so that ambiguity of data can be removed which creates multicollinearity. Its measurement is based on the following formula:

"Operating Cycle = RCP + ITD"

Size and Age (Organization's Size & age)

For the analysis of organization's performance and WCMassociation effect of another variable, "company size" is taken as control variable. History ofliterature expresses positive significant association with organization's performance. This variable is measured by two methods;

1- Size is determined as a LN of total asset of an organization

2- Size is determind as a LN of sales of an organization

However, first method of dimension is vastly found from literature. However, current research considers LN relating to total assets to analyze relation of organization's size with profitability. Its measurement is based on the following formula:

"Size =LN (Natural logarithm) of total assets"

Sample/ Participants

According to Hassard et al. (2010) claimed that it is the guideline for the research that directs researcher the way to conduct research for a study. This study used sample design which comprises of sample frame and sample size of a specific given population. According to Gill and Johnson (2002) appropriate sample selection is a vital issue of the research as nature of the population determines selection of sample size; for heterogeneous population there is need of large sample size while for homogeneous population small sample size is required.

A minimum of 5% of a selected population is believed as proper sample size in making generalization (Krejcie & Morgan, 1970). Initially a sample of all 46 Non-Financial firms of KSE (Karachi Stock Exchange) 100 Index is selected for this study that had been operated during the period of 2011 to 2019. The choice of the Non-financial sampled firms of KSE 100 Index is based on the availability of the annual report of the sampled firms.

Data collection method

Data for this study were collected from annual reports of the companies included in sample and FSA (Financial Statements Analysis) of Non-Financial companies listed at Pakistan Stock Exchange by State Bank of Pakistan.

An annual report is the combination of financial and non-financial reports like income statement, Balance sheet, Director's report, statement of compliance with corporate governance best practices, cash flow statement, an auditor report, statement of changes in owner equity, a pattern of shareholding and company's general information about chairman, chief executive officer and directors. The specific financial and non-financial statements that were used in collecting the data for this study were Company's general information, Director's report, Statement of compliance with corporate governance best practices, income statement and pattern of shareholding.

Annual reports of sample companies were downloaded from each company website and http://www.opendoors.pk. Panel data for the period of nine years from 2011 to 2019 was obtained and used to analyze the relationship between some corporate governance variables and capital structure for this study. Data on study variables were collected from secondary sources.

The researcher used cross-sectional-time-horizon because according to the objective of research, collection of data required at one time. For the collection of required data, the researcher used purposive sampling technique and questionnaire.

Analyzing and describing stage of research done through IBM STATA, which particularly descriptive statistics, correlation matrix, reliability of data, and normality of data. This section elaborated research methodology of this dissertation upcoming section will spotlight result and discussion of the ongoing project.

Analysis

On the basis of conceptual model described in earlier chapters the current chapter of dissertation is elaborating the empirical evidence regarding causal linkage among CG, WCM and performance of organization with reference to Pakistan. Researcher applied Descriptive statistics, Correlation analysis, OLS, Fixed and Random effect and all other post regression estimation tests on the data collected from different sectors registered at PSX covering the time span of 2011 to 2019.

The ongoing section begins with a very brief summary of the statistics; then Correlation matrix is also presented to elaborate the attitude of each variable towards other variables. Furthermore, each and every fixed and random effect conducted obligatory stability and diagnostic tests. Particularly, all of these verifications affirm whether the residuals of the established frameworks aren't affected by any sort of serial correlation, non-normally distributed, function form misspecification and heteroskedasticity. Regardless of presence of correlation among dependent and independent variables in both models, causality verifications are carried to highlight the direction and magnitude of the tie-up.

Findings of each variable in both models are compared with the earlier outcome and recommendations of numerous authors in the final section of the chapter to offer more comprehensive knowledge.

Statistics Description

As maintained by Heikal et al. (2014) descriptive analysis is a technique being adopted to get the descriptive view of the data collected and it has nothing to do with acceptation or rejection of hypothesis. The only purpose of this analysis is presentation of data after necessary calculations for clarification of its characteristics. The

quantifications researchers used in this research for descriptive analysis are minimum, maximum, mean and standard deviation. Standard deviation calculated to find out how much data is varying from its mean. Minimum & maximum used to determine the highest and smallest amounts both are most concerned figures.

Table: 4 -1 (Descriptive Statistic)

Variables		Mean	Std. Dev.	Min	Max	Observations
Board Meetings	Overall	5.55	1.85	3	17	N = 359
	Between		1.33	4.1	9.3	n = 36
	Within		1.30	0.25	13.25	T = 9.97
CEO Duality	Overall	0.15	0.36	0	1	N = 359
	Between		0.28	0	1	n = 36
	Within		0.23	-0.74	1.05	T = 9.97
Board Size	Overall	8.14	1.27	7	13	N = 359
	Between		1.15	7	12	n = 36
	Within		0.57	5.14	11.24	T = 9.97
Board Composition	Overall	1.72	1.41	0	7	N = 359
	Between		1.23	0.33	6.2	n = 36
	Within		0.71	- 0.97	4.42	T = 9.97
Current Ratio	Overall	1.84	1.51	0.11	7.93	N = 359
	Between		0.87	0.58	4.38	n = 36
	Within		1.24	- 0.94	7.80	T = 9.97
Operating Ratio	Overall	159.14	159.91	1.30	681.25	N = 360
	Between		107.75	38.32	458.22	n = 36
	Within		119.37	- 173.51	571.17	T = 10
Inv. Turnover Ratio	Overall	77.62	139.34	0	1326	N = 347
	Between		88.99	2.84	439.34	n = 36
	Within		107.19	- 272.35	1068	T = 9.63
Firm Size	Overall	23.27	1.67	17.46	26.39	N = 354
	Between		1.63	18.15	25.80	n = 36
	Within		0.43	21.60	24.84	T = 9.83
Firm Age	Overall	38.05	17.68	0	79	N = 360
	Between		17.67	4.5	74.5	n = 36
	Within		2.87	33.55	42.55	T = 10
ROA	Overall	0.08	0.13	- 0.76	0.38	N = 360
	Between		0.08	- 0.08	0.25	n = 36
	Within		0.10	- 0.84	0.31	T = 10

In earlier given first table of this chapter, it can be seen discriptive statisitics of data related to all variables, total 3 entities and 13 times were used so number of toatal obseravtion is 260. Since data used is a strongly balanced pannel data so the quantification of standard Deviation, Minimum & Maximum are giving three different outcomes. “Within” is representing the extant upto which variation is within the pannel entities, “Between” depicting the variation between different pannel entities and “Overall” is detailing the weighted average of both Within & Between.

Correlation Materix

To weigh up the strength of the linear linkage among couple of variables correlation matrix is the fundamental and easiest test. Table 4 -2 depicts the correlation magnitudes of all variables of both specified models. The outcomes reveal that interactivity among most of the variables is usually acceptably significant.

Table: 4 -2 (Correlation Analysis)

Variables	ROA	BM	CEO Duality	BS	B.Comp	CR	OR	Inv. TR	FS	F.Age
ROA	1.000									
BM	-0.04 ***	1.000								
CEO Duality	-0.08 ***	-0.03	1.000							
BS	-0.17 ***	0.18 ***	-0.19 ***	1.000						
B. Comp	- 0.025 ***	-0.03	0.16 ***	0.31 ***	1.000					
CR	0.30 ***	-0.01	0.06	0.16 ***	-0.01	1.000				
OR	-0.40	-0.02 ***	0.02	-0.15 ***	0.14 ***	-0.17 ***	1.000			
Inv. TR	0.005 ***	-0.10 **	0.01	-0.10 **	0.09 *	-0.08 *	0.10 **	1.000		
FS	0.17 ***	0.31 ***	0.04	0.29 ***	0.08	0.10 **	-0.03	0.05	1.000	
F. Age	0.08 ***	0.09 *	-0.13 ***	0.05	0.13 ***	-0.06	-0.13 ***	0.04 ***	0.08 ***	1.000

Notes: *** p<0.01 represents 1% significance level, ** p<0.05 represents 5% significance level whereas * p<0.1 represents 10% significance level

According to given correlation table it can be observed that association among BM and ROA is of inverse nature with a magnitude of -0.045. It means that one unit variation in BM in any direction will result a change of 0.045 units in opposite direction or variation of 0.045 units in ROA will blow a change of one unit in BM in opposite direction. Correlation matrix is depicting that association among CEO duality and ROA is also of negative type

with correlation coefficient of -0.0849. It means that if CEO has dual role in an organization as CEO and chairman at the same time the performance of organization will decrease.

Interactivity among BS and ROA is of positive nature indicating the bigger the board size the better the performance of the organization. This linkage has the magnitude of 0.172 and it means that one unit increase or decrease in BS will result a change of 0.172 units in ROA towards the same direction and this relation is highly indispensable with 0.00 levels of significance. BC is inversely attached with ROA having a magnitude of – 0.0254, but this association isn't considerable since the level of significance is 0.63 and that is falling far away from acceptance region.

CR is positively and significantly associated with ROA with a potency of 0.30, which means that one unit variation in CR will result in a variation of 0.30 units towards similar direction or 0.30 unit's variation in ROA will cause a change of 1 unit in CR towards similar direction. And this can't be ignored since the level of significance is 0.00. Operating cycle is inversely linked with ROA with a magnitude of -0.40, which means that one unit variation on OC will consequent a change of 0.40 units in ROA towards opposite direction. This association is also highly indispensable with a significance level of 0.00.

Inventory turnover ratio possess extremely weak positive correlation with ROA;however, this association is inconsiderable since the level of significance doesn't fall within the acceptance region. FS got an association of positive nature with ROA having a strength of 0.17, which means that one unit increase in FS will depict a change of 0.17 units in ROA and 1 unit decrease in FS will present a reduction of 0.17 in ROA. This linkage is also indispensable with a significance level of 0.00. Firm age is positively associated with ROA but this relation can't be elaborated since its significance level doesn't fall within the desired threshold.

Association among CEO duality and BM is of inverse nature with a coefficient of -0.036 which means number of board meeting decreases if CEO is holding dual office. However, this outcome can't be endorsed since the level of significance is 0.11. Relationship among BS and BM is of direct sort with a potency of 0.18, which means the bigger the size of BODs higher the frequency of board meeting. This association among BM and BS is highly significant with a significance level of 0.00.

According to correlation coefficient interactivity among composition of BODs and BMs is significant with a level of 0.36 which, mean BC or BM has nothing to do with each other. Linkage between current ration and BM is of inverse nature with a potency of – 0.019 but the association has a significance level beyond the acceptance region. Operating cycle is also indirectly and significantly linked with BM. Inventory turnover ratio is inversely correlated with BM with a strength of – 0.10, which means that one unit change in inventory turnover ratio will cause a change of 0.10 towards contrasting direction.

Firm size is positively engaged with BMs with a correlation coefficient of 0.31, its indicating the bigger firms have more frequently board meetings. This relation can't be ignored since it has a significance level of 0.00. Age of firm is significantly linked with the numbers of board meeting. Relationship among board size and CEO duality is of inverse nature with a magnitude of – 0.193. It means bigger the size of BODs fewer are the chances that a CEO will hold dual office and this linkage is highly indispensable with a significance level of 0.00.

Association between BC and CEO duality is of positive sort with a potency of 0.165 and this linkage is significant at 0.00 levels of significance. Current ratio has significant engagement with CEO duality, it means that CEO duality and CR has nothing to do with each other's. Correlation coefficient of CEO duality is

significant with all remaining variables except the size of firm. Relationship among age of the firm and CEO duality is of negative nature with a potency of – 0.137, it means the older firms have lesser chances of having a CEO with dual role. This interactivity is undeniable with a significance level of 0.00.

Relationship among BS and BC is of direct sort, which means that bigger the board size, more chances of having higher numbers of NEDs. Coefficient of this linkage is 0.31 and it is highly significant at 0.00 levels of significance. Association among current ratio and BS is positive and significant with a magnitude of 0.16; it means that one unit change in CR will make a change of 0.16 units in BS towards same direction. This linkage is highly indispensable with a 0.00 level of significance.

Operating cycle and BS are inversely engaged with each other with a coefficient of – 0.15 and this relation is highly significant at 0.00 levels of significance. Inventory turnover ratio and BS are also in inverse relation with each other with magnitude of – 0.10 and this engagement is also undeniable with 0.05 levels of significance. Firm size and board size are in direct sort linkage with each other having potency if 0.29 and 0.00 levels of significance. This association illustrating that with an increase in firm size the number of directors in that firm also increases. However, firm's age and BS have significant relationship with each other. Relationship between CR and BC is of inverse nature but this association isn't considerable since significance level is far beyond acceptance region. Operating cycle is positively linked BC and this relation has a magnitude of 0.14 with 0.00 levels of significance. Inventory turnover ratio and firm's size are significantly associated with composition of board whereas; firm age has positive and noteworthy association with BC with a magnitude of 0.13. It indicates the older a firm gets number of NEDs increases within that organization and this linkage is highly significant at 0.00 levels of significance.

Operating cycle and CR are negatively linked with each other with strength of – 0.17; it means that one unit increase or decrease in operating cycle will result in variation of 0.17 units towards opposite direction. Linkage among CR and operating cycle is highly undeniable with 0.00 levels of significance. Inventory turnover ratio and age of the firms are significantly associated with CR; however, firm size is in positive interaction with CR with a magnitude of 0.10 and 0.00 levels of significance.

Relationship among ITR and age of firm are significantly correlated with operating cycle with potency of 0.102 and – 0.13. However, size of firm is significantly associated with operating cycle with 0.33 levels of significance. All reaming coefficients; Firm size, age and inventory turnover ratios are depicting significant relationship with each other as per above given correlation table.

Assumption Testing

Multiple Linear regression models were used for testing of hypotheses. Since data is in panel form so first of all author applied ***"Hausman test"*** to find out which effect ***"fixed or random"*** would be more appropriate for performing regression analysis. "***Breush& Pagan LM test"*** was also applied for selecting between Random effect & OLS.

To check the serial correlation "**Wooldridge test for serial correlation in panel-data Model"** this indicated the presence of serial correlation. Issue of serial correlation was rectified through appropriate remedy.

Results interpretation and Discussions

After performing all earlier discussed tests outcomes of random effect model were selected to portray as it was the best fit model fulfilling all above-mentioned assumptions. Regression results of OLS, fixed and random effects are given below.

Discussion on Regression Results of Random Effects

First researcher applied Hausman test to decide between random and fixed effect, which suggested random effect could be a better choice. Later author applied "***Breush & Pagan LM test"*** to decide between OLS and random effect once again random effect was endorsed by statistical outcomes for further pursuance of the dissertation.

Table: 4 -5 (Regression Results of Random Effects)

	Coeff.	Std. Err.	Z	P > | z |
Dependent Variable: ROA (Return on Assets)				
B-Comp	0.08	0.006	0.14	0.028
B-Size	0.002	0.007	0.37	0.04
CEO Duality	-0.009	0.020	-0.47	0.03
B-Meeting	-0.008	0.003	-2.27	0.02
Current Ratio	0.013	0.004	3.13	0.01
Operating cycle	-0.026	0.000	-3.01	0.00
Inv. Turnover Ratio	-0.03	0.000	-0.57	0.05
Firm size in total asset	0.016	0.006	2.67	0.00
Firm Age years	0.016	0.000	0.27	0.78
_Cons	-0.261	0.140	-1.86	0.06

(R-Squared Value)

overall	= 0.2513		
between	= 0.4460	*Wald chi2 (6)*	= 70.53
within	= 0.1289	*Prob > chi2*	= 0.0000

Summary and conclusion

The results of the Regression analysis showed that Board composition had positive but statistically insignificant relationship with ROA measures of firm performance, similarly there existed positive but significant association between Board size and firm's financial depiction.

Final outcomes relationship among CEO duality and financial performance of business is of inverse nature. It means that very organization having dual role of CEO compromising their financial prosperity. If an organization wants to depict healthy progress in financial terms should focus on eliminating the dual role of single person as CEO and chairman of the board.

Similarly, board meetings are also inversely engaged with financial depiction of the business. It means that very organization conducting too much and unnecessary board meetings compromise their financial prosperity. If an organization wants to depict healthy progress in financial terms should focus on eliminating the frequency of too much board meetings.

Moving towards regression coefficients of WCM it can be spotted from above given table random effects current ratio is positively engaged with financial depiction of the business. Interactivity among operating cycle and financial depiction of the business is also showing significant association between these two variables. So, if an organization wants to amplify the financial progress they must focus on reduction of operating cycle in order to elevate ROA.

Relationship among inventory turnover ratio and ROA depicting significant results as per above given statistical outcomes of random effects. So, according to this dissertation it can be concluded that ITR has nothing to do with financial performance of the business.

Association among size of the business and ROA is of direct nature. It means bigger the size of firm better the financial performance of the organization and vice versa. The other selected controlled variable age of the organization is depicting significant association with financial performance of the firm. So, it can be concluded as per this dissertation age of the firm has nothing to do with financial prosperity of firm.

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