The Dynamic relationship between Corporate Governance and Firm Financial Performance: A study of Multinationals and Local Firms in Emerging Market, the case of Pakistan

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Abstract

7This study examines the relationship between corporate governance and firm performance of local and multinational firms in Pakistan. The sample consists of 259 non-financial listed firms of Pakistan for the period of twelve years (2003-2014). As per researcher's best knowledge this sample size is larger than any previous study in Pakistan and therefore, it has considered most representative sample of Pakistan corporate sector. Keeping in view the research objectives of this study, the data is divided into three samples such as, (1) full sample (2) Local firms' sample (3) MNC firms' sample and examine the relationship between corporate governance and firm performance in Pakistan.

This study has expanded the existing literature of corporate governance by introducing Associated ownership as a unique explanatory variable of corporate governance mechanism. As per researcher best knowledge this variable has not discussed in previous studies of corporate governance and firm performance relationship. Interestingly, this study finds positive and significant relationship between Associated ownership and firm performance for both measures of performance (ROA, MB Ratio) in various models of this study.

This study has examined the sample data in multidimensional ways to investigate the impact of corporate governance on firm performance by addressing relevant econometrics issues from all possible aspects. The system GMM is the main estimation technique of this study which produces efficient and consistent estimations after controlling the effects of unobserved heterogeneity, simultaneity and dynamic endogeneity. The findings of this study support the argument that the association between corporate governance structures and firm performance is dynamic in nature. This approach suggests for controlling the potential sources of endogeneity which are inherent in the governance-performance relationship. This study concludes that results from prior studies showing an insignificant impact of corporate governance on firms' performance may be biased as they fail to control the potential source of endogeneity.

The study results show that corporate governance structure does matter in Pakistan. The results conclude that the relationship between corporate governance and firm performance of MNCs firms are more significant as compared to local firms. The study found that the MNC firms in Pakistan have high standards of governance as they are financially sound and belong to developed countries which impact positively on their performance. The study has found that most MNCs are part of top 100 index firms of Pakistan stock exchange which is le evidence of their financial worth. The results further conclude that difference in financial worth, well-established internal corporate culture and country of origin do impact on performance of the MNCs firms in Pakistan. Therefore, MNC firms in Pakistan have better corporate governance practice as compared to local Pakistani firms. Thus, this study suggests that

financial worth, well-established internal corporate culture and country of origin are the determinants of better corporate governance.

The results indicate that impact of corporate governance on firm performance in the pre-crises period (2003-2008) is more significant as compared to crisis periods (2009-2013). Therefore, the relationship between corporate governance and firm performance is more effective during stable economic conditions (2003-2008) and less effective during the financial crises period (2009-2013). Thus, this study suggests that stable economic conditions are one of the determinants of better corporate governance.

This study also examined whether the impact of corporate governance on firm performance differs across high growth firms and low growth firms. The results conclude that impact of corporate governance on firm performance is more significant the in case of high-growth firms as compared to low-growth firms. Thus, corporate governance mechanism is more effective in high growth firms and less effective in low-growth firms. In addition, this study finds a significant difference in the ownership structure of both the models as high growth firms are dominating by director ownership whereas, low growth firms are dominated by Associated ownership in Pakistan.

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DECLARATION

This is to declare that I am responsible for the work submitted in this thesis, and that this work has written by me. That all verbatim extracts have distinguished, and the sources specifically acknowledged.

Qazi Awais Amin Date…30/05/2017

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List of Abbreviations

ACCA	Association of Chartered Certified Accountants
AFC	Asian financial crisis
AGM	Annual General Meeting
CG	Corporate Governance
EGM	Extraordinary General Meeting
EMIS	Emerging Market Information Service
EPF	Employees Provident Fund
FCCs	Family-controlled companies
FCCG	Finance Committee on Corporate Governance
FE	Fixed effects
FEO	Foreign equity ownership
FRS	Financial Reporting Standard
FP	Firm Performance
GAAP	Generally Accepted Accounting Principle
GDP	Gross Domestic Product
GLS	Generalised least square
GMM	Generalised method of moments
GNP	Gross National Product
HCSE	Heteroscedasticity Consistent - Standard Error
HGFs	High Growth Firms
IAS	International Accounting Standards
IFRA	International Financial Reporting Standard
IMA	International Monetary Fund
LGFs	Low Growth Firms
MNCs	Multinationals corporations
NED	Non-executive directors
PICG	Pakistan institute of corporate governance
ROA	Return on assets
ROE	Return on equity
RE	Random effects
RTD	Resource dependence theory
SECP	Securities Exchange Commission of Pakistan
SBP	State Bank of Pakistan
SD	Standard deviation
VIF	Variance inflation factor

Chapter 1

1.1 Introduction

The relationship between corporate governance and firm performance has been the central theme of many previous studies of finance and management literature. It is the most prominent area of research which has widely discussed and examined over the last two decades. The term corporate governance refers to a relationship among shareholders, board of directors, management and other stakeholders of the company. This relationship develops a framework by which firm objectives are determined and performance is monitored. (Mehran, 2003). Corporate governance is a standard set of mechanism by which the external investors protect themselves from expropriation by the insiders (La Porta, et al., 2000).

Corporate governance is the most interesting area of research which become famous among researchers and economists in last two decades. Better corporate governance supports economic development and helps to improve corporate performance by adding the value of firms in local and international markets. Corporate governance supports several public policy objectives in developed and emerging markets. The companies are considering the importance of corporate governance as the expectation of investor class is more demanding than ever before. The emphasis on corporate responsibility is also increases by the company's management and it is realised by industry that they are accountable to broader stakeholder interest.

The corporate governance consists of two broader mechanisms such as internal and external corporate governance. The internal corporate governance giving preference to shareholders' interest and serve at the position of board of directors to monitor the activities and decisions of top management. The external corporate governance control and monitor managers conduct with the help of external regulations and various parties such as customers, suppliers, banks, accountants, credit rating agencies and professional institutes.

The corporate governance recommendations encourage management and directors to perform their responsibilities in the best interest of shareholders which help to mitigate agency cost (Cadbury, 1992; Higgs, 2003). The effective corporate governance essentially involves in developing a system of rules and practices by which the firm activities are managed and controlled. Corporate governance is expected to develop a framework which maintain a balance among firm stakeholders for their respective interests.

A large body of empirical research document a common perception that better corporate governance practice improves firm performance (Economist, 2010). Historically, the codes of corporate governance framework were designed in developed countries. Moreover, a large numbers companies from developing world also tend to implement good corporate governance practices to attract the investment from developed countries (Reed, 2002). In addition, the compliance with corporate governance regulations helps to improve firm performance and reduce agency cost. This can lead to attract potential investors to have more investment as better corporate governance protect their interests. Thus, it is expected that firm with better corporate governance are likely to have high firms' performance (Beiner et al., 2006).

The rational for corporate governance and firm performance relationship is obvious as corporate governance suggest more efficient steps of monitoring the managerial activities. This is in turn, motivate managers to work for the common interest of the firms and avoid from seeking own interests. Moreover, better compliance of corporate governance might reduce the agency cost and protect minority shareholder by regulating managers' actions and managing shareholders' authorities.

The corporate governance code also proposes transparency and disclosure procedure in firm affairs and decision making which expect that directors perform their fiduciary responsibilities in the best interest of shareholders and perspective stakeholders. In addition, few studies such as, (Claessens et al., 2003; Amana and Nguyen, 2013) document that better corporate governance enable firm for greater access of external funding which help to reduce the likelihood of firm insolvency.

The study results of Mallin (1997) and Peasnell et al. (1998) reveal an increase in better corporate governance practice and a better firm performance after the adoption of Cadbury Report in 1992. Similarly, Bozec et al., (2008) and O'Connor (2012) find a positive relationship between corporate governance and firm performance. In contrast, Love, (2011) document that there is no causal relationship between corporate governance and firm performance even after having an optimal level of corporate governance compliance. Moreover, Weirand Laing (2000) and Pandeya et al. (2015) document an insignificant association between compliance of Cadbury report and firm performance.

The characteristics of developing economies, such as weak legal system, lack of investor's protection and underdeveloped capital markets make their business environment different from that in developed economies (Rabelo and Vasconcelos, 2002). This raises a fundamental

question that whether corporate governance practice of developed markets can be applicable on developing market? Therefore, the findings of developed countries studies cannot generalizable to developing countries.

1.2 Overview of Pakistan

Pakistan is one of the leading emerging markets in the world. There are series of development and structural changes since last two decades in Pakistan which support better corporate governance practice. In 2002, SECP (Security exchange commission of Pakistan) took the initiative and set up a framework of good corporate governance whereby all listed companies are bound for the compliance with mandatory provisions of the Code of CG. The code consists of series of recommendation for corporate governance best practice.

Better corporate governance is links with better firm performance by preventing the shareholders' domination in firms' affairs and with effective decision making. Major part of research in corporate governance is done for developed countries as rich data is available from such countries. The developing countries like Pakistan are facing relative weak corporate law enforcement and weak investor protection.

As per federation of international trade association report (2015) Pakistan is fastest growing market which has a great attraction for foreign investment as its secured 25th position among largest economies of the world as per purchasing power. The Pakistan banking sector occupied a significant status since last decade by offering advance banking service. Pakistan's economy is mainly based on leather, chemicals, textile, yarn, sports goods, chemicals products, food processing, agriculture products, handicraft, agriculture products and surgical instruments. (State Bank of Pakistan report, 2016)

According to world economic survey (2005) Pakistan secured the third position among the countries having rapid growing economy in Asia. According to the World Bank report (2005) Pakistan secured a very strong economic position in Asian region and ranked among fastest emerging markets in world. Pakistan also achieved the title of the 2nd rapidly developing economy in Asian region. (State bank of Pakistan report, 2006)[1].

Pakistan is ranked among rapid reformers of the Asian regime and done exceptional performance in last two decades. The economy of Pakistan is moving forward by offering

1 http://www.sbp.org.pk/

fertile business environment to new investors in order to promote business, trade and industry. Pakistan has wealth of natural resources for example, the world's fifth largest gold mine, world's second largest salt mine and world's sixth coal mine is in Pakistan. According to world bank report Pakistan economy moving ahead economically by offering incentives to foreign investors, introducing new business opportunities, tax holidays, business loan for small and large-scale industries and Paneities for non-compliance with corporate governance procedures. (World Bank report, 2005).

1.2.1 Role of Multinational firms in Pakistan

Multinational corporations (MNCs) is enterprise are corporation which manages and controls their production and services in more than one country. The first MNC is generally consider Dutch East India Company which founded in 1602. In recent days, multinational firms are deemed to be more powerful and influence on local and world market due to large amount of their respective budgets. Multinational firms play a vital role in bringing foreign direct investment, speed up economic growth and help to developed international relations between developing and modern world. The MNC are one of the economic source for government as they pay revenue to government in the form of rent, land tax and income tax.

Multinational firms playing a significant role in Pakistan as they are working in various sector such as, fertilizers, consumer products, pharmaceuticals, chemicals, engineering and food products. As per state bank of Pakistan report, multinational firms have invested almost Rs. 60 billion in Pakistan. Europe and USA are the major player of establishing Multinational business in Pakistan as their investment is approximately 25 percent, followed by Brittan 13 percent, International lending institution 11 percent and japan is 3.5 percent. The automobile industry in Pakistan is also flourish due to huge investment of Japanese MNCs.

Pakistan took the initiative of taking various reforms and regulations related to business, trade and industry for better and secure environment for multinational firms and foreign investors. The MNC businesses are expending in Pakistan at very rapid pace and it is expected that Pakistan would attain the most favourable place in Asian regime regarding business and industrial opportunities. At present MNC firms can start their businesses in Pakistan in any sector of economy except four areas such as, Arms and ammunition, High explosives and radioactive, Currency and mint, and Security printing. Multinational firms are set up in various forms like holding companies, franchises whereas, few are fully incorporated in Pakistan and becoming the source of skills development.

Siemens Germany is the first MNC which set up its business in Pakistan (Sub continent) in 1933, whereas ICI is second which started manufacturing soda ash in 1942. These MNCs have expanded their business at very large volume and now working in various industries of Pakistan. Few other MNCs like Burma Oil, Shell, Imperial Tobacco and Unilever also set up their business after 1947. The German, US, Korean and Gulf companies are involved in construction and communication whereas, Japan is dealing in automobile industry with the brand name of Honda, Hino, Toyota, Suzuki and Nissan.

Multinational firms in Pakistan are involved in development of infrastructure and social work programs and extended the scope of available goods and services. The economy of Pakistan is primarily based on agriculture sector. Keeping in view the fertility of agricultural lands in Pakistan Engro set up its business as MNC in 1960 and Hercules from USA also start joint venture with it. The agriculture sector has developed more rapidly due to the existence of MNC firms in Pakistan which support farm industry and the MNC like Belarus, Fiat and Massey Ferguson have set up their business for agriculture sector. A French MNC Sogea also set up its venture in construction sector of Pakistan and have taken mega projects like Air ports construction.

1.3 Research objectives

The main objective of this thesis is to carry out an empirical investigation of the relationship between corporate governance and firm financial performance in Pakistan. More specifically, there are four main research objectives of this study. The first objective is to investigate that how corporate governance mechanism impact on firm performance in Pakistan. There are a very few studies in Pakistan which have examined the impact of corporate governance on firm performance and such studies unable to provide a detailed understanding of corporate governance practice in Pakistan. Most of these studies have used a very small sample size of top 100 index firms with a period of five years or less. As per researcher best knowledge this is first study in Pakistan which has used extensive attributes of corporate governance by covering sixteen explanatory and control variables for the period of twelve years. After having most relevant variables of corporate governance, this study covers major dimensions of corporate governance and examine its impact on firm performance in Pakistan.

The second specific objective of this study is to ascertain how corporate governance practices differ across multinational and local listed firms in developing economy like Pakistan. More

specifically this study seeks to explore whether there is any difference in corporate governance practices between multinationals and local listed firms in Pakistan. In addition, to examine whether the impact of corporate governance on firm performance of MNC in Pakistan is better than local firms. The listed MNC firms in Pakistan are bound to compliance with Pakistan corporate governance code 2012. The head offices of these MNC firms are in developed countries which have their own corporate governance standards. It is accepted in general that corporate culture of MNC in Pakistan influenced by their country of origin and impact on their corporate governance practice. Therefore, this study investigates whether corporate governance practice of MNC firms are different from local firms in Pakistan. Moreover, this study is meant to provide firms with better understanding of similarities and difference of corporate governance practice between multinational and local firms of Pakistan.

The global financial crisis emerged in 2008 because of US subprime mortgage crisis and has considered to be the worst since great depression of 1930. Pakistan has also suffered due to macro-economic imbalances resulted from global financial crisis of 2008. Therefore, the third objective of this study is to investigate the impact of corporate governance on firm performance in different economic periods. This study determines whether corporate governance impact differently in different economic period? As per researcher best knowledge there is no previous study which has examined the impact of corporate governance in different economic periods. Therefore, to achieve research objective this study divided the sample into three different economic periods such as pre-crisis period (2003-2008) and during crisis period (2009-2013).

The fourth specific objective of this study is to investigate whether and how impact of corporate governance structure on firm performance differs across High growth firms (HGFs) and Low growth firms (LGFs) in Pakistan. Therefore, full sample data is divided into two sub samples e.g. High growth firms and Low growth firms. As per researcher best knowledge there is no previous study which has examined the impact of corporate governance on firm performance across High and Low growth firms thus, it is a unique contribution.

1.4 Research Questions

Keeping in view the research objectives, this study seeks to answer the following four specific questions:

1. What are the impacts of corporate governance mechanism (such as, board size, female board members, presence of non-executive directors, frequency of board meeting, audit

committee size, directors' ownership, institutional ownership, associated ownership, and ownership concentration) on firm performance in Pakistan?

2. Whether and how corporate governance practice differs across multinational and local listed Firms in Pakistan?
3. How corporate governance structure impact on firm performance during different economic periods such as, pre-financial crisis period (2003-2008) and during financial crisis period (2009-2013)?
4. Whether and how impact of corporate governance structure on firm performance differs across High growth firms (HGFs) and Low growth firms (LGFs) in Pakistan?

1.5 Research gap and Contributions of the study

This study has expanded the existing literature of corporate governance by introducing associated ownership as a unique explanatory variable of corporate governance mechanism. As per researcher best knowledge this variable has not discussed in previous studies of corporate governance and firm performance relationship. Interestingly, this study finds positive and significant relationship between associated ownership and firm performance for both measures of performance (ROA, MB Ratio) in various models of this study.

This study has examined the sample data in multidimensional ways to investigate the impact of corporate governance on firm performance by addressing relevant econometrics issues from all possible aspects. The system GMM is the main estimation technique of this study which produces efficient and consistent estimations after controlling the effects of unobserved heterogeneity, simultaneity and dynamic endogeneity. The findings of this study support the argument that the association between corporate governance structures and firm performance is dynamic in nature. This approach suggests for controlling the potential sources of endogeneity which are inherent in the governance-performance relationship. This study concludes that results from prior studies showing an insignificant impact of corporate governance on firms' performance may be biased as they fail to control potential source of endogeneity.

The study results show that corporate governance structure does matter in Pakistan. The results conclude that the relationship between corporate governance and firm performance of MNC firms are more significant as compared to local firms. The study observed that that the MNC firms in Pakistan have high standards of governance as they are financially sound and belong

to developed countries which impact positively on their performance. The study found that most of MNC are part of top 100 index firms of Pakistan stock exchange which is an ample evidence of their financial worth. The results further conclude that difference in financial worth, well established internal corporate culture and country of origin do impact on performance of MNC firms in Pakistan. Therefore, MNC firms in Pakistan have better corporate governance practice as compared to local Pakistani firms.

The results indicate that impact of corporate governance on firm performance in pre-crisis period (2003-2008) is more significant as compared to crisis periods (2009-2013) for all three samples of this study. Therefore, the relationship between corporate governance and firm performance is more effective during stable economic conditions (2003-2008) and less effective during financial crisis period (2009-2013). Thus, this study suggests that stable economic conditions are one of the determinants of better corporate governance.

This study has examined whether impact of corporate governance on firm performance differs across high growth firms and low growth firms. The results conclude that high growth firms are more significant as compared to low growth firms regarding corporate governance and firm performance relationship. Thus, corporate governance mechanism is more effective in high growth firms and less effective in low growth firms. In addition, this study finds a significant difference in ownership structure of both the models as high growth firms are dominating by director ownership whereas, low growth firms are dominating by associated ownership in Pakistan.

Pakistan is unique country having varied social and cultural values. These values have impact on corporate sector of Pakistan. For example, females in Pakistan are less tempted to serve as a board member especially after marriage due to domestic responsibilities and cultural environment in Pakistan. In general, the females in Pakistan not prefer to continue their jobs after marriage because of strong family system. Therefore, this study explores whether and how presence of female board members impacts firm performance especially in varied cultural and social environment of Pakistan. The results indicate that presence of women have not signification impact on firm performance.

Pakistan first among five south Asian countries in performance and efficiency of corporate governance (World Bank report 2007). Therefore, Pakistan is an important country in relations to corporate governance practice as its leading among south Asian countries. Moreover, due to strategic location Pakistan offers the shortest route of 2600 km to Central Asia regions as

compared to Iran 4500 km or Turkey 5000 km through Gwader port. Pakistan is also providing direct and shortest access to south Asian countries, especially China for trade in Middle East countries by its sea ports. Third, Pakistan also set up project of CPEC (China Pakistan economic corridor) which is 3218-kilometre-long rout consisting on highways and railways tracks keeping in view the expected high volume of trade. This CPEC project expected to be result in the creation of 2.3 million jobs between (2015-2030) and add 2.5 % to the country's annual economic growth. Most recently US, UK and other European countries also show their interest to get benefit from CPEC which enhance the importance of Pakistan in developed world. Pakistan corporate sector playing a significant role in world trade especially Asian regain. Therefore, it's worth standing to explore the impact of corporate governance on firm performance in Pakistani context. Moreover, Pakistan located at a region which has great political, economic and strategic location and it lies near Persian Gulf where 65% of the world's oil is produced.

There are a very few studies in Pakistan[2] which have examined the impact of corporate governance on firm performance, but these studies have not provided detailed understanding of corporate governance practice in Pakistan. Most of these studies have used a very small sample size such as 100 index firms of Pakistan stock exchange and for the maximum period of five years or less and have ignored a large sample of remaining data related to Pakistani firms (see for example, Mir and Nishat ,2004; Ghani and Ashraf ,2005; Javid and Iqbal, 2006; Nadia Ishaq, 2007; Javid A, 2008; Iqbal, Arshad Hasan ,2009; Nauman Zaheer,2010; Nouman Afgan ,2010; M. Khyzer Bin, 2011; Qaiser Rafique, 2011; Amir Shehzad, Amina, 2011; Attiya, et al.,2012: Sajid, Gul, et al.,2012; Nadeem A sheikh et al. 2013; Ahsan et al.,2014). Therefore, this study attempt to fill the gap in literature by reviewing all aspects of corporate governance in Pakistan.

The result validated the main hypothesis of this study that corporate governance practice differs across local and multinational firms. Therefore, corporate governance's practice of MNC firms are better than local firms. The result analysis also validates the hypothesis that non-executive directors, frequency of board meeting, audit committee size, associated ownership, firm size, firm age and leverage have significant impact on firm performance. Moreover, this study

2 Most of the studies in Pakistan about corporate governance are not published in recognised journals. Therefore, such studies results have not discussed in this study.

suggests that financial worth, well established internal corporate culture and country of origin are the determinants of better corporate governance.

In addition, the study results accept the hypothesis that the relationship between corporate governance and firm performance is more effective during stable economic conditions (2003-2008) and less effective during financial crisis period (2009-2013). Therefore, this study suggests that stable economic conditions are one of the determinants of better corporate governance.

This study is beneficial for key stakeholders such as directors, managers, investors, regulators and policy makers in number of ways. The outcome of this study strengthens the importance of effective corporate governance practice by explaining the significant impact of corporate governance on firm performance. This study has used four accounting ratios as control variables and developed their relationship with corporate governance which may help investors in better decision making about prospective investment. This study is useful for directors and manager for better understanding that how to increase the effectiveness of corporate governance practices at firm level in emerging market like Pakistan. The findings of this study may helpful for policy makers and regulatory bodies in Pakistan such as Security exchange commission of Pakistan (SECP) and Institute of corporate governance of Pakistan (PICG). The study outcome is also helpful in directors training programme which is organised by (PICG) regarding implementation of corporate governance regulations in Pakistan corporate sector.

This study has included the sample of Multinational firms which belong to developed countries therefore, the finding of this study can be generalise to other developed and developing countries and may help in setting up new corporate governance regulations, revision of policies and strengthening the existent regulations in terms of corporate governance.

Chapter 2

Theoretical Literature review

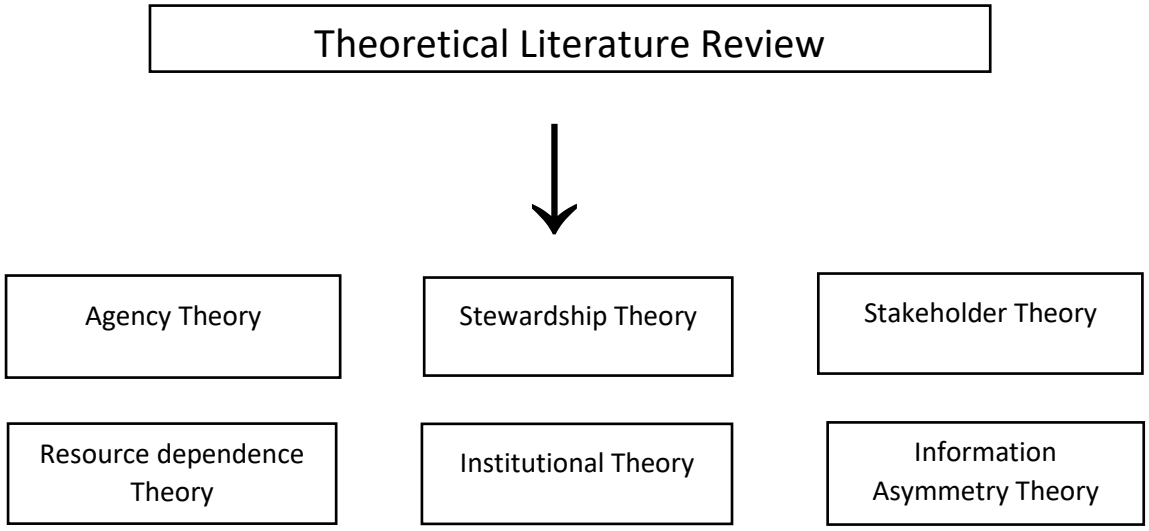
2.1 Introduction

The aim of this chapter is to review the theoretical framework of the relationship between corporate governance and firm performance. Parum et al, (2005) documents that "among the researchers there is no agreed theoretical framework to study corporate governance" but extensive review of previous literature shows that the ultimate theories discusses in previous literature regarding corporate governance are agency, steward, resource dependence, institutional and stake holder theories.

These theories have focused on cause and effects relationship of the variables, like board composition, presence of non-executive directors, role of audit committee, and regulatory structures. Wan yusoff et al., (2002) suggests that combination of various theories is most suitable way to define good corporate governance practice rather than generalizing the corporate governance on a single theory.

For this study, agency theory is considered the main theory as the corporate structure of Pakistan is like shareholder model of governance, which is linked up with the concepts of agency theory. However, this study reviews the stewardship, stakeholder, resource dependence, institutional, and information asymmetry theory to construct the theoretical framework for this study. The theoretical review of literature further explains by Figure 2.1

Figure 2.1



2.2 Agency theory

Agency theory is the most dominant theory of corporate governance which states that "agency problems arise because individuals focuses on their own benefits when they are in agency relationship and have different goals and interests". (Krambia and Roberts, 2004; Hendry,

2005; Psaros, 2006). The agency theory focuses on corporate governance and argues that in a modern corporation, where management positions are not associated with ownership functions, management actions may require maximizing shareholder returns. Agency theory considers external audit as an effective control procedure to eliminate the conflicts of interest between principal (shareholder) and agent (manager) and minimise the agency costs.

The studies such as, (Berle and Means, 1932; Jenson and Meckling, 1976; Fama and Jensen, 1983) are considered pioneer researchers and have analysed the theoretical concepts of agency theory under the context of corporate governance. Since, later majority of researchers are using concepts, models, assumptions, limitations and arguments of agency theory to understand corporate governance components like board composition, board practices, ownership structure, agency cost, agency conflicts and reforms of corporate governance. (Manosa et al., 2007).

Jensen and Meckling (1976) study focuses on concept of 'principal-agent' framework and explain that "agency theory focuses on agency relationship where one party, the principal delegates authority to agent who accept the responsibility on behalf of principal. In agency relationship, the shareholder is titled as principal and the managers by 'agent" (Shankman, 1999). The study further reveals that firm's faces agency costs and internal inefficiencies. The agency theory further explains that the main aim of corporate governance is to provide assurance to shareholder that the managers' decision making is align with their interest. Therefore, the agency relationship formed a contractual relationship between the principals and the agents who served for mutual benefits. The study result shows that the conflict of interest arises because principals are unable to monitor the performance of agents. (Mallin, 2004).

The study result of Fama and Jensen (1983) show that shareholders are not in position to fully trust on managers. Therefore, shareholder appoint directors to protect their interest against managers who try to maximise their self-interest at the expense of the organisation's profitability. Thus, firms need an effective system of monitoring manager's activities which helps to protect shareholder interest. Agency theory has significant importance in the field of corporate governance as researchers have assessed the theoretical approach of agency theory for empirical research of corporate governance. (Fama, 1980; Warda and Filatotchev, 2010; King and Wenb, 2011; Bezemer et al., 2012; Renders and Gaeremynck, 2012.

The agency theory stats that the managers are usually follow their own personal interest and work to exploit their position for personal gains and benefits rather considering shareholders'

interests. Therefore, the focus of agency theory is ensuring that managers follow shareholders interest and avoid from seeking own interests. Eisenhardt (1989) argues that it is difficult and costly for the shareholder (principal) to watch what the manager (agent) is doing within office which becomes the reason of conflict between principal and agent.

Most of the studies related to corporate governance has conducted by following the concepts of agency theory (Filatotchev and Boyd, 2009). The empirical literature document that nature of corporate governance mechanism is define by various theories because agency theory has multi-dimensional concepts such as stewardship and information asymmetry theory (Haniffa and Hudaib, 2006; Filatotchev and Boyd, 2009).

In emerging market, several other researchers such as, (Reed, 2002; Imam and Malik, 2007; Farooque et al, 2007; Manosa et al., 2007) have applied agency theory to develop corporate governance structures and address the issues and challenges facing by the modern organisations and suggest the measure for best practice of corporate governance. The study results of Kao and Chen (2004) reveal that the role of corporate governance mechanism based on agency theory where shareholders interest is effectively protected by monitoring managers' decision making. Therefore, corporate governance mechanisms such as boards of directors, external auditors and audit committees protect shareholders interest by closely monitoring the decisions of managers. The existence of external auditor helps to reduce agency costs by cutting information asymmetry in financial reporting (Coles and Hesterly, 2000).

Even though agency theory is dominating in literature relating to corporate governance, various researchers such as (Davis et al., 1999; Burton, 2000; Aguilera and Jackson, 2003; Roberts, 2004; Jakobsson, 2012) have criticised agency theory. These studies reveal doubt on the strength of agency theory that it does not cover all issues related to corporate governance in emerging and developed markets. The study of Charkham (1994) and Moreland (1995) highlights the shortcoming of agency theory that it does not include various expenditures and factors of investment which are basic pre-requisite for long term sustainability of an organization. The other researchers like (Jensen and Meckling, 1976; Bhagat and Black, 1998; Deegan, 2004) have given different observation about concept of agency theory in the context of separation of ownership from management. These researchers have observed that contrary to concept of agency theory when ownership is separate from management then there is possibility that managers are still unable to maximise shareholder interest due to incapability's and lack of experience.

Johanson, Ostergen (2010) argue that apart from major contribution of agency theory for corporate governance mechanism and agency cost, it's applicable to only those developed and emerging markets where Anglo-Saxon model of governance are being followed. Mallin (2010) reveals that the provisions of agency theory are extensively applicable to developed economies like US and UK, where the legal system provides good protection of minority shareholders.

In summary, the above arguments which are split in favour and against of concepts of CEO duality and role of audit committee in reducing agency cost, it is desirable to give conclusion to this debate by testing the agency theory on corporate governance practice in local and MNC's firms in Pakistan.

2.3 Stewardship theory

The Stewardship theory presents a different model of management as compared to agency theory where agents (managers) are considered good stewards who serve in the best interest of the Principal (shareholders). The foundation of stewardship theory is based on social psychology which support the professional behaviour of executives. The steward's approach is pro-organizational where self-interest is compromise upon organisational long-term goals and objectives which ultimately support all concerned parties of organisation. (Donaldson and Davis, 1991).

Various researchers such as (Fama and Jensen, 1983; Nicholson and Kiel, 2003; Nicholson and Kiel, 2003; Letza *et al*., 2004; Clarke, 2004; Smallman, 2004; Albrecht et al., 2004) review stewardship theory and have taken an opposite perspective as compared to agency theory. The stewardship theory states that the agents are honest and trustworthy who can manage financial resources as per the expectation of owners which makes monitoring unnecessary. Since managers are not self-cantered and opportunistic and their aims are aligned with the organisational aims and objectives, so they have entitlement to get autonomy based on their trust which reduces the cost of monitoring and controlling manager's actions.

Muth and Donaldson (1998) study shows a comparative analysis of agency and stewardship theory and find that stewardship theory provides the basis of good model of governance which trust on mangers who work for the common interest of shareholders and other concerned parties. The study further argues that the authority, commitment and responsibility of executive managers enhance self-confidence and they focused more on company goals and objectives. It

also helps to developed flexible corporate culture which leads to better corporate governance and enhancing shareholders value.

Fama and Jensen, (1983) study reveals that steward theory focuses on behaviour of senior managers based on several assumptions. First, the executive managers possess first hand and good knowledge about internal and external matters of the firm which help to develop better decision making. Second, the executive's managers normally spend their maximum working within the company, so they are more likely to understand the affairs of firm as compared to outside directors and capable to make good decision making.

Porcher (2010) study documents that the stewards are considered well motivated and ready for the fulfilment of their responsibilities. They are willing to achieve desired targets by performing a challenging work with great performance to get recognition from peers and bosses. The stewardship theory considers directors and managers as stewards of the firm which likely to increase the shareholders' wealth.

Apart from the significant importance of stewardship theory, there is a strong opposition against it by those researchers who argue that domination of non-executive directors in a board structure is associate with better corporate governance and link with the enhancement of shareholder value (See for example, Donaldson and Davis, 1994; Albrecht et al., 2004; Mace M, L 2004; Choo and Tan, 2007). These studies criticise the perspective of stewardship theory where steward is considering trustworthy manager. These studies have revealed that council of institutional investors in US and UK which are most influential and powerful sources is also fully supporting the domination of non-executive directors. These non-executive directors play a vital role in firm's optimal decision making. The prospective investor feels more comfortable if number of non-executive directors have good strength in board.

Choo and Tan (2007) study have objected that managers are not always act for the common interest of shareholders and their personal interest are not fully aligned with firms' long-term goals and objectives. The study further argues that psychologically, it's difficult to work honestly and with more professional commitment particularly in a situation where board has lack of non-executive directors. There are more chances that managers may encourage to commit fraud if there is no non-executive director or less number of non-executive directors. The researcher further argues that non-executive directed have no vested interest therefore, they work for the best interest of the firm. Steward theory also explains that managers are not self-cantered and opportunistic, and their aims are aligned with the organisational aims and

objectives. Moreover, they have entitlement to get autonomy based on their trust which reduces the cost of monitoring and control manager's actions.

In summary, it is observed that the stewardship theorists focus more on philosophy of manager's empowerment and less focus on monitoring and control. The proponents of stewardship theory reject the concept of highly individual and self-centred model of agency theory as it portrays a suspicious "watch dogs" behaviour which suggest that principals and agents' interests are totally different from each other. Thus, Stewardship theory rejects the concept of agency theory that principal supposed to watch the activities of self-centred agent and monitor with the application of incentives or sanctions policy.

2.4 Stakeholder theory

Stakeholder prospective of governance capture researcher eyes after the introduction of Freeman's strategic management "a stakeholder approach" (1984) and since then many renowned researchers have reviewed stakeholder theory. Under traditional view of management, only shareholder or owner prospective is take into consideration, and the firm has a binding responsibility to put their interest first. Instead traditional view, stakeholder theory argues that the interest of other concerned parties should also be protected. These parties are employees, customers, suppliers, investors, public, political groups, trade associations, governmental bodies and trade unions.

The study of Freeman and Reed (1983) and Sternberg (1997) reveal that in modern world the stakeholder concept become more specific and associate with those groups which can affect or affected by firms' development and achievements. The study results of Letza et al., (2004) and Gamble and Kelly (2001) document that stakeholder theory is one of the important theory of business ethics and firm management which addresses values and morals for managing an organization. The study further states that the firm should take into consideration the wider external stakeholders' interests rather than merely shareholders' interest. The advocators of the stakeholder model argue that the key to success is to associate with successful management relations with stakeholder and it's linked up with better corporate governance.

Smallman (2004) and Wicks and Parmar (2004) study results indicate that stakeholder theory is an extension in contents of agency theory, where responsibility of the board of directors is extended from shareholders' approach to other stakeholders' interests. Thus, a narrow scope of

shareholder interest is added by a wider scope which protect the interest of stakeholders and associate with social, environmental and ethical considerations.

The study of Jones and Wicks (1999) have explained four major elements of stakeholder theory. First, the firm has relationships with many concerned parties (stakeholders) that influenced by their decisions. Second, the theory is concerned with the processes and outcomes of the firm and its stakeholders. Third, the interests of all concerned parties have intrinsic value, and no one is dominating upon others interest. Fourth, the theory associates its relationship with managerial decision making as their decision may affect directly or indirectly to the concerned stakeholders.

The stakeholder approach helps to support firm liability towards social responsibility. Choi and Wang (2009) study support the argument of Hillman and Keim (2001) and agreed that engagement with stakeholders increases their level of confidence and satisfaction which ultimately increase their commitment towards firm.

Despite the fact that stakeholder theory occupied a unique status in literature related to corporate governance, many researcher criticise stakeholder model of governance (see for example, Jansson, 2005; Lepineux, 2005; Plaza-Ubeda et al., 2010; Tse, 2011; Tipuric, 2011).These researchers have argued that unlike agency theory, the stakeholder theory is incomplete in terms of sound governance, unable to express corporate purpose and not successful in setting specific mechanisms for better corporate governance. Hillman and Keim (2001) criticised stakeholder theory and states that stakeholder relationships are vary from individual firms and stakeholder loyalty is associate with those firms which have more support to stakeholder model of corporate governance.

In summary, stakeholder's theory states that the firm having relations to wider external stakeholders' interests rather than merely shareholders' interest. The management should also protect the interest of stakeholders while framing firms' strategic decision making. The above debate which is in favour and against of implementation of stakeholder theory, have a space to find the answer of various questions which is not answered yet.

2.5 Resource dependence theory

The resource dependence theory (RDT) considers by the researchers as a fundamental theory to assess firm relations with external environmental. The idea about resource dependence has firstly introduce by Lawrence and Lorsch (1967) and has supported by Pfeffer and Salancik (1972) who developed an association between the resource dependency theories and corporate governance. The researchers argue that a successful firm focuses on internal structure which link up with environmental demands.

There are several researchers who review the prospective of resource dependence theory and conduct meta-analytic studies (see for example, Nicholson and Kiel, 2003;Hillman et al. 2009; Davis and Cobb; 2010; Haniffa and Cooke, 2010; Cannella Jr and Paetzols, 2011; Drees and Heugens 2013;Sharif and Yeoh 2014).These studies have discussed the importance of resource dependence theory and evaluate the actions of organizations with reference to external resources which link up with other organisations and firm own decision making. These studies explain that resource dependence theory is characterize by firm behaviour rather explaining firm performance.

In summary, the resource dependence theory explains that how external resources of firm affect the managerial behaviour of the firm. The acquisition of external resources is a vital segment of strategic management of any firm therefore, the role of resource dependent theory become important in strategic decision making.

2.6 Institutional Theory

Kraft's Public Policy (2007) explains that institutional theory is Policy-making which associate with legal and formal aspects of government structures. Institutional theory follows a sociological perspective to discuss firm structure and behaviour. It focusses on cultural and social elements which influence firms' strategic decision making long term objectives. There are two major aspects in institutional theory. First, an old institutionalism which is linked with historical institutionalism and second is new institutionalism. (Meyer and Rowan, 1977; Scott, 2001).

Fogarty (2011) study reveals that institutional theory is very helpful for researchers who interested to make a comparison between the best practices of corporate governance elements with the elements of actual performance. According to Cohen et al. (2007) the institutional theory perspective of corporate governance expected a change in firm processes over time. Second, it determines that how corporate governance structures helps to legitimise various

factors which associate with better corporate governance. The institutional theory focuses on acceptance or rejection of changes under the context of political, social and historical issues which related to absorbing organisational changes within complex situation. Therefore, to implement a new system along with recommendation of effective corporate governance, the institutional frame work must have capacity to absorb such changes.

In summary, institutional theory follows a sociological perspective to discuss firm structure and behaviour. It focusses on cultural and social elements which influence firms' decision making and long-term objectives.

2.7 Information Asymmetry Theory

The information asymmetry theory reveals that individuals in firms at all level do not have same information at the same point. Its mean that behaviour of individual within organisation is different due to their different level of information and normally they took different decision which may impact on firm performance. According to information asymmetry, the individual's information about firm is very important as its give direction to firm decision-making process.

Apart from the fact that there is wealth of literature on corporate governance mechanism but there are limited number of studies which have investigated the association between nature of firm corporate governance and volume of asymmetric information. The studies such as (Perotti, Thadden, 2003; Pawlina and Renneboog 2005; Ozkan, 2009) have reported that existence of large shareholders is negatively related to asymmetric information and enhance long term performance. As per Jensen and Meckling, (1976) the agency problem arises because of divergence of interests between principal and agent. (Shleifer and Vishny, 1997; Miller, 2002) Moreover, principal unable to resolve agency problem due to the presence of asymmetric information which related to the efforts and actions of agents. The principal is not in position to monitor the activities of agents in perfect manners and ultimately agency problems are unresolved.

Aymen and Danielle Sougne (2013) review the data of 160 French firm for the period of 2008 to 2010 and examine the association between corporate governance and information asymmetry including the characters of board of directors. The study result reports a significant association between various corporate governance mechanism and information asymmetry. The study suggests that firm having an effective corporate governance mechanism may help to minimise informative asymmetry and enhance transparency.

In contrast, various studies such as, (Heflin and Shaw, 2000; Swisher, 2003; Belghitar et al, 2011) report that larger institutional ownership is correlated with higher information asymmetry as there is less degree of informed trading. These studies suggest that effective monitoring of managerial activities helps to reduce asymmetric information.

Chen et al. (2013) determines the relationship between firm internal resources and information asymmetry. The study results show that needs of external financing are negatively associate with information asymmetry. The study suggests that effective monitoring of managers' activities help to overcome the effects of information asymmetry. Belghitar and Khan (2011) study the impacts of information asymmetry on governance mechanism. The study reports that internal governance mechanisms have significant impact on those firms which have high growth investment opportunities.

In summary, the information asymmetry reveals that individuals in firms at all level do not have same information at the same point. Its mean that behaviour of individuals within organisation is different due to their different level of information and normally they took different decision which may impact on firm performance. Thus, the individual's information about firm is very important as its give direction to firm decision-making process.

2.8 Conclusion

Among the various theories which have discussed above the agency, stewardship and resource dependence theory are the most dominating theories in corporate governance literature and they link up with aims and objectives of this study. The other theories like stakeholders, institutional and information asymmetry are also important, but their concepts are beyond the scope of this study. Therefore, this study examines the concepts of agency, stewardship and resource dependence theories in relation to research objectives.

Chapter 3

Overview of Corporate governance in Pakistan
3.1. Introduction

The primary aim of this chapter to overview the corporate governance practice in Pakistan. This chapter has organised as follows. Section 1 is starts with the introduction. The institutional framework presents in section 2. Section 3 briefly reviews the implementation of code of corporate governance of Pakistan. The assessment of the code of corporate governance is provided in section 4.

Better corporate governance plays important role in financial development by supporting the flow of capital to the financial market. The Asian financial crisis brings serious attention towards the importance of effective corporate governance practice. The OECD corporate governance principles of (1999) are considered as core framework to assess a country level of corporate governance compliance. Corporate governance consists of public and private institutions which manage the relationship between those who govern the firms' activities and those who invest economic resources in firms. These institutions include corporate laws, security provisions, regulations of capital market, accepted business practices and business ethics (Omran, 2004).

Although the government of Pakistan took various steps to promote the culture of better corporate governance but corporate governance in Pakistan is still in its developing stage. The structure of corporate governance in Pakistan is based on various institutions such as, Securities and Exchange Commission of Pakistan Act 1997 which is extended by the Securities and Exchange Ordinance (SEO) 1969, Institute of corporate governance of Pakistan and Companies Act 1984. The principle regulator of corporate governance of Pakistan is the Securities and Exchange Commission of Pakistan (SECP) which establishes and maintains the compliance of all listed and non-listed companies in Pakistan. Therefore, the SECP plays an important role in regulatory framework for corporate governance practice in Pakistan. (Javid and Iqbal, 2010).

The first code of corporate governance in Pakistan has established in March 2002 which is set up by considering the listing requirements of all three-stock exchange (Karachi, Islamabad and Lahore). All listed firms have mandatory compliance requirement for corporate governance code 2002. The main aim of corporate governance code 2002 is to develop a regulatory system for all firms to be govern and manage with best practice of corporate governance provisions

establish by OECD. The provisions of this code provide guideline to the management of all firms to ensure that the interest of shareholders and stakeholder is protected.

The corporate governance provisions for banks have also addressed by the corporate governance code 2002 and the SBP (State bank of Pakistan). The SBP established a regulatory framework for corporate governance compliance requirement for the banking sector of Pakistan. Khalid and Hanif (2005) examine the existing structure and development regarding corporate governance practice of banking sector in Pakistan. The study results document that State bank of Pakistan plays an important role as regulator and supervisor for the compliance, development and effective corporate governance in banking sector of Pakistan. The SBP have taken various steps to restructure the banking regulations to promote better corporate governance in Pakistan.

This code is considered as major step in establishing corporate governance regulations in Pakistan. It consists of procedures and regulation for better corporate governance practice in Pakistan which is in line with the provisions of corporate governance practice of developed economies. The main area of provisions and recommendation is reforms related to the role and scope of the responsibilities of directors in order to protect the interest of shareholders and stakeholders. However, the provisions regarding independence of director are voluntary which is not supporting the firms' effective system of internal control and compensation procedures.

Securities and Exchange Commission of Pakistan (SECP) issued the code of corporate governance 2012 which has revision of earlier code of 2002. More specifically, the present code is extended version of original drafted by ICAP in 1998. This code is prepared by considering international model of corporate governance such as Hampbell committee report UK, Cadbury committee report UK and King's report from South Africa.

All provisions of corporate governance code 2012 have effective from its date of issuance and it stands as 'present code' whereas code 2002 termed as 'previous code'. The CG code 2012 also revised in July 2014.This latest code also includes the listing regulations of stock exchange of Pakistan and Penalty is also fixed for non-compliance of such listing requirements.

3.2 Institutional Framework

The institutional framework becomes more important since last two decades particularly after Asian financial crisis and corporate failures like Enron. Therefore, for better corporate governance regulations and implementations it is important to improve that institutional

framework. The effective institutional framework strengthens the effective corporate governance mechanism which increase the shareholder value and implementation of better corporate governance practice. The Security exchange commission of Pakistan played an important role in development and improvement of regulatory framework of capital market. The Security exchange commission of Pakistan has established on 1st January 1999 under SECP Act, 1997. Later, finance ministry of Pakistan succeeds it as Corporate Law Authority (CLA). At initial stage, the CLA has responsible for regulations and compliance of corporate sectors and capital market. The commission is divided in to following six division based on their responsibilities.

- Company Law Division.
- Finance and Admin Division.
- Specialized Companies Division
- Securities Market Division
- Insurance Division.
- Human Resource and Training Division.

For effective administration, each division is further divided into wings and department for better management and control. The Securities and Exchange Commission of Pakistan is control and managed by SECP Act, 1997 which manages the constitution of the Commission appointment, the scope of commissioners' appointment, terms and conditions of chairman and commissioners, powers and functions of commission. The Securities and Exchange Commission of Pakistan is responsible to manage and govern the regulations of above laws and commission. Moreover, SECP regulates various other laws such as, the company ordinance, 1984 (which is revised and implemented in 2002), insurance Ordinance, 2000 (revised from Insurance Act, 1938), the Ordinance 1969 for securities and exchange and Modaraba companies' ordinance, 1980.

The policy board has set up by Securities and Exchange Commission of Pakistan Act, 1997 for providing the support to commission regarding provisions, regulations and revision of policies. The policy board included maximum nine members of the Federal government. The five members out of nine are ex-officio members and remaining from private sector of Pakistan. There is numerous amendments in corporate laws which implemented to maintain the development and compliance of corporate sector. These include e.g. the company ordinance, 1984 which is revised and implemented in 2002, insurance Ordinance, 2000 (revised from

Insurance Act, 1938), the Ordinance, 1969 for securities and exchange and Modaraba Ordinance, 1980. The new provisions required that copies of minutes' have need to be provided within 14 days of meeting. The appointment of full-time company secretary is required the listed company for effective corporate governance. The firm has authority to remove its auditors by a special resolution of 75% shareholders' votes. The replacement of previous year auditor by the appointment of new auditor must be done with the permission of commission. The number of meeting of listed firms have increased from three members to ten members

In developed and developing countries the stock market is main source of investment for corporate sector. There are three stock markets are functioning in Pakistan, namely Karachi stock exchange, Islamabad stock exchange and Lahore stock exchange. Since last decade the stock market of Pakistan secured a significant growth and development in trading volume. The protection and custody of paper certificates need maintenance by the institutions and individuals. Moreover, the physical settlement of the certificate is not easy however, the manual system also takes lengthy delays and risk of damages. CDC (Central Depository Company of Pakistan Limited) has set up in 1993 and start working in 1997 as Central Depository System (CDS). The CDS is an electronic book entry system to manage, record, exchange and transfer securities.

The institute of corporate governance of Pakistan (PICG) is also established under Section 42 of company ordinance, 1984. The main aim of PICG is to encourage corporate governance practice and provide training to directors and executive for best corporate governance practice in Pakistan. The institute of corporate governance of Pakistan played a significant role in training and development of corporate governance executive. The state bank of Pakistan, Securities exchange Commission of Pakistan, three stock exchanges and banking and insurance institutions are founding members of PICG.

The PICG has conducted a conference of banking reforms in Pakistan with the collaboration of State Bank of Pakistan and IFC in 2006 which has provided a great source of awareness. The conference has developed a good understanding about the importance of good corporate governance practice in Pakistan.

3.3 Code of the Corporate Governance

The code of corporate governance is established with joint effects of SECP, ICMAP (Institute of cost and management accountant of Pakistan and three stock exchange. All listed firms in Pakistan published and circulate a statement of compliance in annual reports about their best practice of corporate governance. The primary aim of the code is to set up a system through which a firm is directed and control by its directors in compliance with best practice to protect the interest of shareholders and stakeholders.

The code also recommends the board structure with inclusion of non-executive directors to protect the interest of minority shareholders. The code also proposes transparency and disclosure procedure in firm affairs and decision making which expect that directors perform their fiduciary responsibilities in the best interest of shareholders and perspective stakeholders. It is also the mandatory responsibility of the firm to set up audit committees. In 2007 SECP (Security and exchange commission of Pakistan) conducted a survey with the coordination of IFC (International Financial Corporation) and PICG (Pakistan institute of corporate governance) on code of corporate governance in Pakistan. The survey targeted the financial and non-financial listed firms in three stock exchange. One of the major key finding is the need for creating awareness about the advantage of the code therefore, the directors could go further than tick box approach to adopt the provision of code.

The CG governance code of 2012 recommend that one independent director is mandatory while preference is for 1/3rd of the total members of the board to be independent non-executive directors. Moreover, maximum number of executive directors cannot be more than 1/3rd of elected directors including CEO. The code also recommend that a director can be on the board of up to 7 listed companies however, the limit does not include directorship in listed subsidiaries of a listed holding company.

The code also restrict that Chairman and CEO shall not be the same person, unless specifically provided in any other law. Moreover, it is necessary that the Chairman shall be elected from non-executive directors. It is mandatory for directors of listed companies to attain certification under any director training program (DTP) offered by any institution which meets the criteria specified by the SECP. The code also recommend that Audit committee must be consist of nonexecutive directors and the chairman of the audit committee shall be an independent director and not be the chairman of the board.

There three main types of listed firms in Pakistan such as state-owned, multinational and family control firms. A large number of listed firms are family owned via cross-shareholding and pyramid structures in various sectors of Pakistan like automotive, Textile, agriculture and tobacco. In Pakistan, a significant number of firms are family owned unlike dispersed shareholding structure of Anglo-American model. The majority shareholders manage and control the firms and avoid to raising equity to hold their autonomy in decision making. (Ibrahim, 2005). This situation is not different from the rest of the world where 30% of the companies have closely held family owned companies. (La Porta et al., 1999) The study results of Javid and Iqbal (2007) document that family ownership firm is less likely to protect the minority shareholders. Second, the family ownership firms are less motivated to excel in their relevant business areas. In contrast, Klein et al., (2005) reports that family dominating firms does not affect the overall performance of the firm.

The World Bank (2005) country wide assessment report on corporate governance in Pakistan reveals that contrary to issues related low compliance culture in Pakistan, most of family-oriented firms' have improved their standard corporate governance compliance by implementing the guidelines of SECP code. The family owned firms have also acquired the services of non-executive directors which is major step towards better corporate governance practice.

The progress of Pakistan' in corporate governance have been recognized by the World Bank in its research. The World Bank's 2007 report on doing business in South Asia observes that "Pakistan provides relatively strong protections for minority shareholders against the misuse of corporate assets." The report ranks Pakistan 19th out of 175 countries on the issue of protecting investors. Moreover, the World Bank in its report getting finance in South Asia 2009 has ranked Pakistan first among five south Asian countries in performance and efficiency of corporate governance. The report, however, also recommend a few areas which need to address regarding accountability, transparency and disclosure and protection of shareholders' interest.

3.4. Assessment of Corporate Governance

The Security exchange commission of Pakistan is receiving technical support from Asian Development Bank to enhance the effectiveness of corporate governess practice in Pakistan. The Karachi Stock Exchange (KSE) has established a board committee for corporate governance and a scheme in company affairs department to monitor compliance with code. The directors are elected using a form of cumulative voting process and can be removed by a

resolution through shareholders. The shareholder approval is mandatory where firms need to change company articles, sale of major fixed assets and increasing authorise capital. It's mandatory for the companies to must hold annual general meeting to discuss all major affairs with the shareholders and meeting should be held in a place where the shareholder has easy access.

In Pakistan, the accountability system is not very much established as the firms have not strong internal control system. The SECP has taken various steps to make the internal system more accurate and transparent by making awareness of better corporate governance practice. SECP has implemented many regulations to improve monitoring role within the firm which is part of the code 2012. However cross holdings and pyramid structure make it difficult for outsider to understand the structure of ownership, particularly for business group. The family owned firms are managing and controls by the owners themselves. The multinationals and state-owned firms have direct association between foreign /state owners and management and ignores the board members. Moreover, many important corporate issues have discussed in annual general meeting. The code suggested directors' responsibility to act independently for the best interest of the firm. The business groups' board are dominated by executive and non-executive members of controlling family. The family dominating board often not protect the rights of minority shareholders right. The presence of non-executive directors on board is considered a significant impact as it discourages the firms' act of protecting personal interests and exploitation of minority shareholders. The presence of non-executive directors also improves the overall decision making of the firm (Rias, Saeed, 2005). The publication of quarterly results helps investors to make a better decision of investment. The corporate governance code recommend that listed firms shell share their financial information with SECP and stock exchange which affect the market price of the share. This provision of code helps to establish that financial information ensures transparent trading.

In Pakistan, at least 20 % equity share holding is required where a minority shareholder required to file a suit in court, which indicates that minority shareholder protection is not yet valued in Pakistan corporate sector. Moreover, a common complaint has logged about the submission of quarterly unaudited statements as a compliance requirement therefor, 84 firm de-listed between 2002 to 2006 due to this strict compliance requirement. In addition, lack of monitoring procedures, ineffective mechanism of accountability and weak legal system are needing to be address for better corporate governance practice in Pakistan.

Chapter 4

Literature review and Hypothesis development

4.0 Introduction

Corporate governance has become the part of worldly debate in various theoretical and empirical studies especially after the financial scandals like Parmalat, Adelphia, World.com and Enron. Keeping in view the significant importance of corporate governance practice, majority of developed and emerging markets conducted survey and empirical research to determine the association between corporate governance and firm performance.

According to Jensen and Meckling (1976) "the literature related to corporate governance is primarily deals with agency problem which develop from conflict of interest between shareholders and managers". The empirical literature recommends various element which associate with ownership and firms' corporate governance that helps to minimise the conflict between managers and shareholders and increase firm performance. The empirical literature focuses on various corporate governance mechanism which help to reduce agency problems.

Corporate governance is the most prominent areas of research which has widely discussed in last two decades. It is generally considered better corporate governance practice is linked up with better firm performance, that if corporate governance improves, then firm performance is also increase. The firm performance is associate with the satisfaction of external investors and stakeholders as well. There is large body of literature which consist of discussion regarding corporate governance and firm performance relationship in developed and emerging markets. (see for example, Florackis, 2005; Black et al., 2006; Haniffa and Hudaib, 2006; Wintoki, 2012; Gibson et al,2013; Tuan Nguyen et al., 2014; Saeed et al., 2016).

In this study, the main governance mechanism is grouped into two main categories which are board structure and ownership structure. These two categories are helped to determine the relationship between corporate governance and firm performance. This study reviews a set of nine internal corporate governance variables which deemed to influence firms' financial performance in previous literature. These variables include board size, female board members, presence of nonexecutive directors, frequency of board meeting, audit committee size, director's ownership, institutional ownership, associated ownership, and ownership concentration. There are seven control variables which are part of model estimation such as firm size, firm age, leverage, dividend to total assets, sale to assets, sale growth and dividend to cash flow. The details of each variable are as follows.

4.1 Board Size

The board of directors is deemed to be the first defence who protect shareholders interest against undue management actions. The effective board assure corporate legal and ethical compliance apart from monitoring management actions. Board composition is not only associate with its size and the director's independent role but also include the system of nominating new board members along with their respective remunerations. Board size means the total numbers of board members sit in board both executive and non-executive directors. The board of directors serve as an agent of shareholders and monitor the behaviour of management on behalf of the shareholders in order to protect them from managers who prefer their personal interest upon firm objectives (Jensen and Meckling, 1976).

Liu, Yu, Wei, Zuobao (2014) and Haniffa and Cooke (2002) studies report that the board of directors is composite of two types of directors' namely executive directors and non-executive directors. The executive directors responsible to manage day to day activities of the business whereas, non-executive directors are not involved in day to day management of the business. Various researchers such as, (Yermack, 1996; Adams and Mehran, 2005; Beiner et al., 2006; Yawson, 2006; Guest, 2009; Henry, 2008) agreed that the empirical evidence on board size and firms' financial performance is conflicting and researchers' opinion are not uniform.

The empirical literature related to board size and firms' financial performance relationship has mixed results. Few studies such as, (Yermack, 1996; Dehaene, A. et al, 2001; Bozec, R, 2005; Chen, G. et al. 2006; Baranchuk, Dybvig, 2009) find a positive association between board composition and firm financial performance. Whereas few researchers such as (Sundgren, and Wells, 1998; Rose, 2007; Garg, 2007) studies have reported a negative correlation between board composition and firm performance.

Yermack (1996) examines the data of 452 sample of large American firms for the period of 1984 to 1991.The study result shows that there is negative relationship between board size and firm financial performance. It is observed that as per investors, the valuation of firms' declines where board range is between 4 and 10, and above a board size of 10, the study finds no relationship between board size and market valuation. The study results also support prior theoretical recommendations of Lipton and Lorsch, (1992) and Jensen (1993).

Guest (2009) reviews a sample of 2746 UK listed firms for the period of 1997 to 2002 and finds a significant and negative association between board size and firm. The finding of the

study has provided an empirical support to the theory that smaller boards link up with quick decision making, proper managerial control and evaluation of management achievements. (Jensen, 1993; Lipton and Lorch, 1992).

Al-Najjar (2014) and Dian, Yang (2014) studies report that large board have few disadvantages like ability to control management and lack of effective communication and decision making. The study finds an inverse relationship between board size and firm value. The study results of Dundek, Ivana (2014) and Akshita Arora, Chandan (2016) report that small board is more favourable for firm performance. The study further states that large board face the problem of lack of effective communication and coordination which leads to unnecessary influence of CEO.

Kula (2005) and Haniffa and Hudaib (2006) find a negative association between board size and firm financial performance. The study further suggest that larger board is considered as ineffective from investors view. The larger board also consume more prerequisite as compared to a smaller board. (Eisenberg et al, 1998)

In contrast, few researchers supported large board size for better corporate governance practice (see for example, Tri Minh Nguyen, 2014; Chen, Lilin, 2013). These studies argue that because of varied organisational culture and complex business environment a large size board is in better position to support and advise management more effectively. Few other researchers such as, (Gupta, Sharma, 2013; Pooja 2014; Feng, Tianjun,2015) also support the above arguments and argue that large size board is in better position to support and advise management more effectively.

Nicholson (2003) study determines the association between board size and firm performance and finds a positive association between board size and firm performance. The study further suggests that large board size is more effective in protection of shareholder interest. Sanda et al. (2005) study based on a sample of 93 Nigerian listed firms for the period of 1996 to 1999.The study find a positive relationship between board size and profitability of firm. It links up with the argument that larger boards can have greater access to firm's external environment. This access of firm external environment helps to secure critical resources like finance, business contacts and raw material. (Zahra and Pearce 1992; Goodstein et al., 1994).

Mangena and Tauringana (2008) study uses a sample of 72 Zimbabwean listed firms for the period of 2002 to 2004 and reveal a positive relationship between board size and performance

in an environment of political uncertainty. The study further explains that period of outcomes remains unchanged when inflation adjusted data is evaluated.

A third stream of studies find no relationship between board size and firm performance, (see for example, Yang, Zhao, 2014; Farrukh and Naveed A, 2015). Moreover, Supriti, Pitabas Mohanty (2014) study reveal that firm performance is not affected by size of board. The study suggests that firm should develop a balance board size by considering a mix of age, qualification, gender and race rather than focus on board size only. Hermalin and Weisbach (2011) study has investigated the relationship between board composition and firm financial performance. The study result shows that there is no significant relationship between board size and firm performance. Amir Shehzad, Amina (2011) review the data of 200 listed firm in Pakistan and determine the relationship between board size and firm performance. The study finds no significant relation between board size and firm performance.

The empirical literature related to board size and firms' financial performance relationship has mixed results. Few studies such as, (Yermack, 1996; Baranchuk, Dybvig, 2009; Hossain et al., 2013; Karaye, Abubakar, 2014; Luckerath-Rovers, 2014) find a positive association between board composition and firm financial performance. Whereas, the study results of Baysinger and Butler (1985) and Hermalin and Weisbach (1991) document a very weak relationship between board composition and firms' financial performance. The study results such as (Rose, 2007; Garg, 2007) report a negative correlation between board composition and firm performance.

This study finds that existing theoretical literature and empirical evidence regarding impact of board size on firm financial performance are equally conflicting. The researchers have mixed arguments in favour and against of the opinion whether board size have significant and positive influence on firm performance or not. The difference in empirical evidence is due to methodologies of research analysis and because of country to country different legal system, ownership structure and practice of corporate governance. Therefore, it is observed from previous literature that there is conflict among researchers' regarding impact of board size on firm performance. The empirical literature shows that relationship between board size and firm performance may be (i) significant positive (ii) significant negative (iii) No significant relationships.

The corporate sector of developed and emerging markets is comprising on ownership of private sector and deemed to be influenced by resource dependence theory which suggests the large

board size with high level of links to external environment. These external links enhance the firm access to more economic resources which impact positively on firm performance. Therefore, based on above discussion, this study develops the following hypothesis.

H1A: Board size is positive and significantly associate with firms' performance (ROA).
H1B: Board size is positive and significantly associate with firms' performance (MB Ratio).

4.2 Female Board Member

The board diversity is one of major debatable governance variable of firms in emerging and develop market. The board diversity includes the gender, racial and cultural composition of the board of directors. (Kang et al, 2007) This study determines the impact of female board members on firm performance. There is mixed empirical evidence regarding the impact of female board members on firm performance and shareholder value.

There are numerous studies which document that presence of female has positive impact on firm performance and woman in board is consider as competitive advantage of the firm. This result is consistent with prier studies, (see for example, Burke, 2000; Carter et al., 2003; Swartz and Firer, 2005; Smith et al. 2006; Reddy et al., 2008; Liu, Yu et al. 2014). Burgess and Tharenou (2002) reports that the presence of female board members may enhance team performance, as more diverse board may view the wider range of perspectives which lead to better decision making. These effective decisions impact positive on firm performance. (Singh and Vinnicombe, 2004).

The study results of Smith et al. (2006) reveals three main reasons to recognise the positive role of female in board composition. First, generally female board members have wider understanding of market as compared to male board members. This better understanding of females supports the overall decision making of the board. Secondly females bring better image of community perception which positively correlated with firm performance. Thirdly, because of presence of female board of members the understanding of business environment of other board members is also increase. Thus, a firm performance is increase directly and indirectly with the involvement of female board members.

Another study of Catalyst (2005) has investigated top 100 US firms in term of revenue and it is reports that 97 firms have at least one woman is part of board. The study of Catalyst (1993) reviews the data of 50 US firms and it reveals that 82% of firms' board have the presence of female in board composition. However, in practice the board of directors still has men

dominating situation in most companies in both the developed and developing worlds. For instance, in the UK the number of women on the board of 350 large companies are less than 5 percent in 1995. (Conyon and Millan, 1997)

Burke, (1994) study reports that various studies of board composition show that 5 percent of board members are females. These studies have given the reason for the less percentage of woman in cooperate board is that CEO has preference to appoint male member of board for firm better performance. Another study of Kang et al, (2007) who reviews 100 Australian firm for the period of (2003-2008). The result shows that 33 firms out of 100 firms don't have any female directors whereas, 51 firms have one female director and only 15 firms have two or more-woman directors. Therefore, only 10% of total Australian firms have female directors.

Bernardi et al. (2002) study reveals that level of good corporate governance can be achieved with the presence of woman in board and consider competitive advantage of the firm. The woman plays a vital role in strategic decision making. The study reports a positive relationship between presence of female members in board and firm performance.

In contrast, few studies argue that board diversity has a negative impact on firm financial performance. For example, Goodstein et al. (1994) investigates the effects of board diversity on a firm's financial performance by using the data of 335 US firms from 1980 to 1985.The study find that firms having diverse boards are not associated to bring strategic changes than those, having no diversity in board composition. The study further suggests that board diversity become the reason of conflicts, which is an obstacle in improving board's ability to initiate timely strategic changes.

Ryan and Haslam (2005) report a negative association between presence of female board members and firm performance as woman presumably not be making any significant contributions to corporate board. Whereas, Carter et al. (2003) and Rose (2007) do not find any association between female board members and firm performance.

Vinnicombe and Johnson, (2001) study result reveals that females are herself reluctant to stay as board members. The study has given the example of president of Coca-Cola UK, Mrs Penny Hughes who left her board position to look after her young sons and Miss Brenda Barnes who served as CEO of Pepsi Ltd has leave the position of manager based on her domestic matters. Shrader et al. (1997) investigates the relationship between the percentage of female board members and two major accounting measures such as ROA and ROE and use a sample of 500 US firms. The study reveals significant and negative relationship between the percentage of

women on the board and firm financial performance. The researcher finds negative relationship by considering the theory of social marginalisation and exclusion.

A third stream of studies find no relationship between board diversity and firm performance. For example, Rose (2007) study has used the data of Danish listed firms over the period of (1998-2001) and determines the impact of female board member on firm financial performance. The study shows that there is no significant influence of female members on firm financial performance.

Thus, the existing theoretical literature and empirical evidence regarding impact of female board members on firm financial performance have no consensus. The researchers have mixed arguments in favour and against of the opinion whether presence of female board members have significant and positive influence on firm performance or not. There are many researchers who agree for more diversity in boardrooms and others support the argument of boardroom uniformity and corporate monoculture. (Abubakar, Procedia, 2014). Therefore, on average there are less numbers of females in board of directors in developed and emerging markets. Keeping in view the empirical literature regarding presence of female board members this study develops following hypothesis related to presence of female board members.

H2A: There is no significant association between presence of female board and firm performance (ROA).

H2B: There is no significant association between presence of female board and firm performance (MB Ratio).

4.3 Presence of Non-executive directors (NEDs)

Cadbury report (1992) reveals that non-executives' directors protect shareholders interest by playing their role as independent and impartial part of board. They try to make sure that decision in board meeting are transparent and based on merit for the best interest of shareholders, management and stakeholders. OECD report (2004) stats that board should assign sufficient number of non-executive directors in board composition in order to contribute independent opinion which helps to protect shareholders interest. The key responsibilities suggested by report are included reliability of financial and non-financial reports, nomination of board members and board salaries.

Mcnulty and Pettigrew (1996) study defines the board functions into three perspectives which are the strategic perspective, the resource perspective and governance perspective. The

strategic perspective consists of active participation of non-executive directors in firm's strategic decision making which helps to protect shareholders interest. The resource perspective focuses to develop a link between firms and its outside environment inclusive of addressing stakeholder concern. The governance perspective emphasis that board ensure shareholders that activities of business are in accordance of their interest and there is no conflict of interested between managers, directors and shareholders.

Bernardi et al., (2002) study results reveal that role of non-executive directors become more important for better corporate governance. For example, in UK Cadbury report suggested that non-executive directors should perform with objectivity and impartiality which helps to protect shareholders interest. The non-executive members are in position to mobilise powers and exert influence through persuasion and coordination within board for better decision making. The study states that non-executive directors have used their personal knowledge and corporate experience to develop relationship with the board members and provide their independent judgement in firms' strategic decision making. The study further reveals that in UK firms, the percentage of non-executive directors is consistently increase from 34 % in 1991 to 49 % in 2001. Mallin (2004) study reveals that non-executive directors are vital element of board as they monitor firm activities and play an important role in overall firm development and more effective way. Thus, study conclude that there is positive association between NED's and firm performance.

Cheng and Firth (2005) study states the importance of non-executive directors and have considered them as a referee especially in a situation, when there is conflict between managers and shareholders. Non-executive directors monitor the activities of higher management and make accountable for their activities and strategic decision making. They also become a hurdle while CEO try to use his power for his private interest. Gupta and Fields (2009) investigate a sample of 744 US firms for the period of 2001 to 2004 and determine the performance of firm based on board independence. The result shows that more number of NEDs have positive impact on firms' financial performance. The study further suggest that investor feel more confidence if firm acquire the services of more numbers of non-executive directors as its associate with effective monitoring of managerial behaviour (Woodliff, David, 2014; Naveed Ahmed, 2015).

Chun, Bong Geul (2014) study reveals that non-executive directors' play important role in firm decision making. The study also explains that the firm having more numbers of NEDs directors

relatively secure more performance as compared to those firms having less numbers of non-executive directors. Ho and Williams (2003) collected the data of 84 South African firms for the period of 1998 to 2001 and investigate the relationship between NEDs and firm intellectual capital performance. The study reports that there is positive relationship between percentage of NEDs and a firm's intellectual and physical capital performance. (Zeeshan Naeem, 2015)

In contrast, few studies results show that percentage of NEDs have negative impact on firm performance. For instance, (Yermack, 1996; Agrawal and Knoeber, 1996; Laing and Weir, 1999; Bozec, 2005; Akshita Arora, Chandan 2016; Amina Buallay 2017; Mahdi Moradi, 2017). These studies highlighted various disadvantages which associate with high numbers of non-executive directors like, lack of business knowledge, excessive monitoring and lack of real independence.

Sanda et al. (2005) reviews the data of Nigerian firms and find a negative relation between NEDs and firm performance. The study reveals that Nigerian firms with less percentage of NEDs perform better than those having more numbers of NEDs. The study further argues that although presence of NEDs increases objectivity and independence, yet it's require excess monitoring.

Weir and Lang (2001) study argue that there is negative relationship between non-executive directors and firm performance. Non- executive directors have other commitments and preference as they employed on part time basis. Therefore, they tend to have less expertise and information about the internal matters of the firm and have not sufficient information to play important role in key decision making. Pass (2004) study criticises the role of non-executive directors and states that non-executive directors are partly engage with the firm activities, therefore, they have little time to collect first-hand information about the firms' day to day management. They are reluctant to work independently because they can re-elect if they still have good affiliation with CEO and executive members of the board. Moreover, Treadwell (2006) argue that it's difficult to find experienced and professional non-executive directors having full expertise to monitor firm activities and who have the time as well to perform their role effectively.

A third stream of empirical research convince that presence of NEDs has no impact on firm performance. (See for example, Hermalin and Weisbach, 1991; Vefeas and Theodorou 1998; Weir and Laing, 2000; Haniffa and Hudaib, 2006). Similarly, Hermalin and Weisbach (1991) study 142 US listed firms and conclude no link between non-executive directors and firm

performance. Vafeas and Theodorou (1998) and Weir and Laing (2000) have the same results that relationship between NEDs and firm performance is insignificant. The study of Haniffa and Hudaib (2006) based upon 137 Malaysian listed firms also report that there is no impact of NEDs on firm performance.

In summary, the prior empirical research is not consistent with theoretical regarding the association between presence of NEDs and firm financial performance. The evidence is mix which is in favour and against the presence of NEDs due to its conflicting nature. (Balsmeier, Benjamin, 2014). There are numerous studies such as (Mallin, 2004; Cheng and Firth, 2005; Chun, Bong Geul, 2014; Aren, Kayagil, 2014) who document a positive association between presence of non-executive directors and firm performance. In contrast, few studies results show that percentage of NEDs have negative impact on firm performance (see for example, Laing and Weir, 1999; Agrawal and Knoeber, 1996; Yermack, 1996; Haniffa and Cooke, 2002; Bozec, 2005). A third stream of empirical research convinces that presence of NEDs has no impact on firm performance (see for example, Theodorou 1998; Hermalin and Weisbach, 1991; Weir and Laing; 2000; Haniffa and Hudaib, 2006).

Since last decade, most developed and emerging market has taken various steps to encourage foreign investment as the investors feel more confidence if firm acquires the services of non-executive directors as its associated with effective monitoring of managerial behaviour. Moreover, the corporate sector of most of developed and developing countries tend to hire the services of qualified and professional non-executive directors which may expected to have positive impact on firm performance. These NEDs act as a referee especially in a situation, when there is conflict between managers and shareholders. These days most of the firms prefer more numbers of independent non-executive directors in order to monitor the activities of higher management and make accountable for their activities and strategic decision making. Therefore, based on above discussion, following hypothesis are developed.

H3A: Presence of non-executive director has positive and significant impact on firm performance. (ROA)
H3B: Presence of non-executive director has positive and significant impact on firm performance. (MB Ratio).

4.4 Frequency of Board Meetings

In existing literature, there is limited studies regarding the relationship between the frequency of board meetings and firm financial performance. Second, the results of such limited number of studies have also conflicting. Thus, there is gap in existing literature to assess frequency of board meeting and investigate its impact upon firm financial position.

Mangena and Tauringana (2006) review a sample of 157 Zimbabwean listed firms for the period 2001 to 2003 and find a positive relationship between the frequency of board meetings and firm performance. The study further argues that during the period of crisis, the monitoring become more difficult and frequency of meeting helps the board to resolve the problem in such situation. Carcello et al. (2002) study has used a sample of 258 US firms and reveals a positive relationship between amount of audit fee and frequency of audit committee meetings. The study further suggests that frequency of board meeting helps to resolve corporate issues more quickly. Karamanou and Vafeas (2005) have studied a sample of 275 US firms and for the period of 1995 to 2000 and find a positive relationship between frequency of board meeting and accuracy of management earnings forecasts. The study reveals that frequency of board meeting helps to improve the overall performance of the firm through continuous monitoring.

In contrast, Vafeas (1999) study based on 307 US listed firms for the period of 1990-1994 and determines the relationship between frequency of board meeting and firm performance. The study results reveals that US firms have negative relationship between frequency of board meeting and firm financial position.

A third stream of literature finds no relationship between frequency of board meeting and firm performance. For example, El Mehdi (2007) study reviews a sample of 24 Tunisian listed firms for the period of 2000 to 2005 and find that the frequency of board meetings has no relationship with economic performance. The study further suggests that financial performance of a firm depend upon day to day effective management rather frequency of board meeting.

The above discussion concludes that the existing theoretical literature and empirical evidence regarding impact of frequency of board meetings on firm financial performance are equally conflicting like other variables of corporate governance. The researchers have mixed arguments in favour and against of the opinion whether frequency of board meeting has significant and positive influence on firm performance. The difference in empirical evidence is due to methodologies of research analysis and because of countries different legal system, ownership structure and practice of corporate governance.

There are a very few studies in developed and developing countries which has examined the impact of frequency of board meeting on firm performance. It is general perception in corporate sector of developing countries tend to have more numbers of meeting to review the firm performance due to competitor's perspective. Therefore, based on above discussion, following hypothesis are developed.

H4A: Frequency of board meeting has positive and significant impact on firm performance. (ROA).

H4B: Frequency of board meeting has positive and significant impact on firm performance. (MB Ratio).

4.5 Audit committee size

Board committees are considered primary mechanism which protect shareholders interest by providing independent oversight regarding firm activities and overall firm strategic decision making. (Harrison, 1987). There are many evidences where one of the reasons of business failure is ineffective working of board committees. (Petra, 2007). Therefore, the presence of board committees become interesting area of further research particularly in the context of developing economies.

The Cadbury Committee report (1992) suggests that it is the responsibility of board to nominate sub committees to address three main functions. First, audit committee monitors the external audit and accounting functions. Second, the remuneration committee decides the salaries of business executives and third, nomination committee nominate directors and managers for the board.

The audit committee is not new mechanism, especially in developed economies. For example, the UK firms have audit committees since 1872 (Vanasco, 1994). The major adoption of audit committees begins in late 1980s. The empirical literature related to the association between audit committees and the reliability of financial information is mixed. Karamanou and Vafeas (2005) study reveals the importance of audit committees and stated that it is a monitoring mechanism which increase quality of information among shareholders, managers and stakeholders. It improves the disclosure practice especially in a financial reporting environment. The study further reveals that the presence of audit committee itself an assurance of less errors, illegal activities, irregularities on firm activities due to implementation of control procedures. Therefore, audit committee is linked with more reliable financial reporting.

Carcello and Neal (2000) study shows that audit committee along with greater percentage of non-executive directors reports less probability of decline business. (Vanasco, 1994)

Mangena and Chamisa (2008) study a sample of South African listed firms and report that existence of audit committee increases internal monitoring, decrease internal fraud and improve corporate governance compliances. The study further reveals that existence of audit committee decreases the chances of suspension from stock market due to elimination of fraud. Karamanous (2005) and Petra (2007) study has assessed the relationship between presence of audit committee and firm financial performance. The study reports that there is positive relationship between presence of independent audit committees and quality of financial statement. Spira and Bender (2009) support the arguments of Petra (2007) and report that presence of audit committee helps to improve firms' activities with the support of non-executive directors.

Mallin (2004) and Al-twaijry et al. (2002) studies have determined the relationship between presence of audit committee and firm performance. The study results reveal that audit committee served as a tool for effective monitoring process within the organisation. The study reveals that audit committee serve as a useful bridge between board and external auditors. April Klein (2000) study reports that audit committee is the most impart element of effective cooperate governance. The presence of audit committee helps to protect the interest of shareholders. Chan et al. (2008) study supports the argument of April Klein (2000) and reveals that existence of audit committee helps to enhance the value of firm. In contrast, Vefeas (1999) and Main and Johnston (1993) study have assessed the relationship between presence of audit committee and firm performance. The results of these studies report that audit committee's impact negatively on firm performance.

A third stream of studies suggest that there is no empirical relation between board committees and firm performance, (see for example, Vefeas and Laing and Weir, 1999; Theodorou, 1998; Klein, 1998). Moreover, Baxter (2006) study reviews the relationship between audit committee and firm performance. The study finds no significant association between audit committee and quality of financial reporting. Beasley (1996) study evaluates the association between audit committee and firm performance. The study result reveals that there is no relationship between presence of audit committee and reliability of financial reports.

The above debate concludes that the existing theoretical literature and empirical evidence regarding impact of audit committees on firm financial performance are equally conflicting.

Most of developed and developing countries studies which has discussed above recommends that at least one third of audit committee should consist of non-executive directors. The corporate sector of these economies recognises the fact that existence of audit committee increases internal monitoring, decreases internal fraud and improve corporate governance compliances. Therefore, based on above evidence this study developed following hypothesis.

H5A: Audit committee size is positive and significantly associate with firms' performance (ROA).

H5B: Audit committee size is positive and significantly associate with firms' performance (MB Ratio).

4.6 Directors ownership

Ownership structure is one of the essential element of effective corporate governance. In exiting literature, various researchers have considered different form of ownership to test the impact of ownership structure on firm performance. Directors' ownership refers to a situation where executive directors and senior managers hold between 5 to 10 percent of total shares. The empirical research regarding relationship between director ownership and firm performance is mixed. There are numerous studies which has reported positive relationship, others reveal negative relationship and a third group of studies agreed that there is non-linear association exist between director ownership and firm financial performance.

The ownership structure of firms has significant importance in practice of effective corporate governance. In exiting literature, two empirical evidence have discussed by most of the studies for an effective ownership structure. Firstly, the situation where insider managers or directors acquire a reasonable portion of the share capital which is helpful in reducing agency conflicts. It also helps to align the interest of managers and shareholders. Second, the outsiders who acquire a major part of share capital, having powers and incentive to monitor firms' activities particularly the financial reporting process, long term planning and strategic decision making.

Gugler (1999) study result shows a positive relationship between director ownership and firm financial performance. The study supports the argument that the firms having a single block of equity exceeding 5% to 10% control are considered as owner-controlled firms. Elayan, Lau and Meyer (2003) study find a positive relationship between director share ownership and firm financial performance. The study reveals that managers are rewarded with higher compensation and shares due to increase in firm financial performance. These studies supported the

arguments that low level of director ownership is positively correlated with firm financial performance.

Reits Lecomte et al. (2013) study reviews the relationship between director's ownership and firm performance. The study reveals that firm financial performance is positively correlated to the percentage of equity held by managers and directors. The study result of Lisboa, Esperranca (2006) examine the relationship between directors' ownership and firm performance. The study reports a positive association between directors' ownership and firm performance as interest of shareholders and managers are aligned.

Mangena and Tauringana (2008) has used a sample of 72 Zimbabwean listed firms for the period of 2002 to 2004 and find a positive relationship between director share ownership and firm financial performance as measured by return on assets. Two other studies such as, Kapopoulos and Lazaretou (2007) and Krivogorsky (2006) review the data of 175 Greek and 187 European listed firm for the period of 2006.The study result shows a positive relationship between director share ownership and firm financial performance. Mir and Nishat (2004) have studied the listed firms of Pakistan and determine the impact of ownership concentration on firm performance. The study reports that block holding by industrial firms, individuals, and family members have positive association with firm performance. The study further states that where chairperson and CEO are the same person then it has negative impact on firm performance. Few other researchers like Chung and Pruitt (1996) and Jensen and Murphy (1990), also support the arguments of Brickley et al. (1988) and states that board's ownership is positively associate with firm performance.

In contrast, the study result of Williams et al. (2003) finds that there is inverse relationship between director ownership and firm's physical and intellectual capital performance along with data analysis of 84 South African firms. The study further evaluates that director share ownership and firm financial performance are negatively correlated with each other.

There are few other studied such as, (Fama and Jensen, 1983; Stulz, 1988; McConnell and Servaes, 1999; Morck et al. 2001) which reveal that managers holding of large block of shares leads to entrenchment problems. These studies further suggested that greater amount of stock ownership by the managers increase their power within firm and reduce the power of external stakeholders which affect the financially performance of the firm. Bhagat and Black (2001) study finds a negative relationship between directors' ownership and board composition which affect the performance of the firm. These studies further support the argument that high-level

directors' ownership is negatively associate with firm financial performance. Haniffa and Hudaib (2006) study a sample of 347 Malaysian listed firm for the period of 1996 to 2000 and analyse the relationship between share ownership and firm performance. The study finds a negative relationship between director share ownership and financial performance and favour the arguments of other studies.

A third stream of empirical research reveals no relationship between director share ownership and firm performance. The study of Mangena and Chamisa (2008) review 81 South African firms and find statistically insignificant relationship between director share ownership and firm financial performance. Cho (1998) studies also support the argument of Hermalin and Weisbach (1991) and reports no relationship between directors' ownership and firm performance. El Mehdi (2007) and Vefeas and Theodorou (1998) study a sample of 24 Tunisian and 250 UK listed firms, respectively. Their study results reveal that there is no impact of director share ownership on firm financial performance.

The above discussion conclude that the researchers have mixed arguments in favour and against of the opinion whether existence of directors' ownership have significant and positive influence on firm performance or not. For example, Wang, Kun; Shailer (2015) and Reits Lecomte et al., (2013) studies find a positive association whereas, Williams et al. (2003) and Bjuggren et al., (2007) find that there is inverse relationship between director ownership and firm performance. Moreover, Amir Shehzad, Amina (2011) find no significant relationship between ownership concentration and firm performance for Pakistani firms. In emerging markets, the firms dominating by family ownership prefer to recruit their family members and relatives as managers and directors of the firm with the intention that shareholding of the firm remains in the hands of family members. When the director's ownership increases, it helps to minimise opportunist behaviour of managers which reduce agency cost and improve firm performance. Moreover, due to weak investor protection and lack of well-developed market for corporate control the director's ownership make the internal control mechanisms more effective. Therefore, based on above discussion about the relationship between directors' ownership and firm performance following hypothesis has developed.

H9A: Director's ownership has positive and significant impact on firm performance (ROA)
H9B: Director's ownership positive and significant impact on firm performance (MB Ratio).

4.7 Institutional Ownership

Institutional ownership of a firms is one minus the fraction of its all shares take up by individual investors. (Kee H. Chung et al., 2009) There are mixed empirical evidence regarding the relationship between institutional ownership and firm performance. Various researchers such as, (Graves, 1988; Baysinger et al. 1990; Kosnik et al., 1991) agreed that institutional ownership has direct and positive relationship with the research and development spending of the firms which influence the short-term profits. Wang, Y. (1999) study finds a negative relationship between firms' profitability and institutional ownership.

Coffee (1991) study reveals that as per recent empirical research the institutional investors can by classified into two main categories. Firstly, institutional investors who do their investment with an intention of longer term basis. This category of institutional investors is generally involved in monitoring activities. Second category is short term institutional investors who more interested on current profitability. These investors are not likely to concern the future profit of the firm which normally effect the share price. They are not usually involved in firm managerial activities and sell their shares in case of firm loss rather to replace inefficient managers.

Whidbee (1997) study results reveal that institutional ownership has considerable impact on board composition. The study further suggested that higher degree of institutional ownership is associate with more social pressure on board to protect the interest of stakeholders. The study further suggested that institutional investors are more consistent and hold their investment for longer period as compared to other investors. Its further argue that in less developing economies when firms size are increases, it attracts the external investors and institutional shareholders and they are more likely to become the part of firm as shareholders. It also more likely that such firms' shares are listed in more than one stock market.

Kee H. Chung and Hao (2012) study results reveal that institutional investors are consider trustworthy investors who helps to minimise typical managerial decision and serve a mentoring role in strategic management. The results find a positive impact of institutional on firm performance. Osman Gurbuz et al. (2010) review the Panel data of 164 Turkish firm from Istanbul stock exchange for the period of 2005 to 2008.The study reports a positive impact of institutional ownership on firm financial performance as a part of corporate governance. The study further reveals that firms having institutional ownership pronounce stronger firm in corporate governance index.

Ferreira (2007) study analyse the data of equity holders from 27 countries and investigated the role of institutional investors. The result shows that firms with higher ownership of institution and foreign investors have greater firm value, less capital expenditure and higher operating performance. The study finds that involvement of institutional investors is considered complementary corporate governance mechanism. Chiou, J.R, Lin (2005) has conducted a comparative study of Chinese and Taiwan firms to investigate the relationship among different ownership structure and firm financial performance. The study finds a positive association between institutional ownership and firm operating performance. The study further suggested that institutional investors are more consistent and hold their investment for longer period as compared to other investors. Grinstein and Michaely (2005) study reveal that institutional investors avoid investing on those firm which have less practice to offered dividend regularly. The study suggested that investors are facing the problem of large risk of exploitation and not get fair rate of dividend in poorly governed firms. Institutional investors have advantage over individual investors as they involve in monitoring of firm activities.

In contrast, Xu, X. and Wang (1999) has investigated the chines listed firms and determine their relationship with institutional ownership structure. The study finds a negative relationship between firms' profitability and institutional ownership. The also study finds a positive association between ownership structure and firm performance.

The above debate concludes that the existing theoretical literature and empirical evidence regarding impact of institutional ownership on firm financial performance are equally conflicting. The researchers have mixed arguments in favour and against of the opinion whether presence of institutional investors have significant and positive influence on firm performance or not. The institutional ownership has great capacity and incentive to monitor managerial operation which impact positively on firm financial performance. The Institutional investors which consist of banks, insurance companies and pension funds have more fiduciary responsibilities and expected to be associated with firm performance. Therefore, based on above discussion following hypostasis are developed.

H7A: Institutional ownership has positive and significant impact on firm performance (ROA).
H7B: Institutional ownership has positive and significant impact on firm performance (MB Ratio).

4.8 Associated Ownership

Associated ownership is unique variable which exists in annual reports of listed firms in Pakistan. As per researcher knowledge this variable has not discussed in previous research at all. The associated ownership means companies that hold shares of a given company and play key role in corporate governance. The associated ownership is a type of Pyramid form of ownership as it acquires the shares of subsidiary firm and associated directors' necessary to participate in corporate governance matters. The essential feature of associated ownership is that associate directors are integral part of firm corporate governance. The essential feature of associated ownership is that associated directors are integral part of firm corporate governance. For example, DGKC, Nishat mills and Jubilee insurance companies are in the ownership of Mansha group. Similarly, DGKC holds shares of NML. For NML, the firm DGKC is an associate company. This is a unique variable which is introduce by this study. The following hypothesis are developed regarding associated ownership in context of Pakistan.

H8A: Associated ownership has positive and significant impact on firm performance (ROA).
H8B: Associated ownership has positive and significant impact on firm performance (MB Ratio).

4.9 Ownership concentration

Ownership concentration is considered as a mitigating agency cost in existing literature as its associate with an effective monitoring measures to increase shareholders value. The existence of ownership concentration under stakeholder model increases firm financial performance. The empirical evidence shows that higher ownership concentration leads to effective monitoring which impact positively upon firm financial performance, (see for example, Fama and Jensen 1983, Morck et al., 1988; Servaes, 1990; Zeckhauser and Pound, 1990). These studies reveal that existence of board ownership is considers as "two-edged knife" which is positively associate with firm performance. Shlifer and Vishney (1997) study find that ownership concentration is primary determinants of effective corporate governance. Laporta et al. (2002) study reports that the countries where regulations and legal protection is weak, ownership concentration considered one of major agency problem and not favourable for minority shareholders.

There are various studies in UK and US which report that ownership concentration has positive relationship with firm financial performance, (see for example, Morck et al., 1988; Wruck, 1989; McConnell and Servaes, 1990; Franks, Mayer and Renneboog, 1995; Mahdi Moradi

2017). Moreover, Amihud and Lev (1991) study the relationship of ownership concentration and firm financial performance and have observed that firms which managed by large block shareholders are less likely to involved in merger and acquisition.

Fitriya Fauzi and Stuart (2013) study report that block holding by industrial firms, individuals, and family members have positive association with firm performance. The study further states that where chairperson and CEO are the same person then it has negative impact on firm performance. Denis and McConnell (2003) and Becker et al. (2011) studies have favoured the importance of block holders and argue that they play important role in better corporate governance practice. The block holders have relevant expertise, skills, experience and time to perform firm activities which support better performance of the firm. The study further argues that centralizing managers' authorities and powers is generally bring a positive impact on firm performance. Brickley et al. (1988) study reveals that board's ownership is favourable for board management as it helps to enhance performance of the firm. The board's ownership also helps the board member for quick decision making. Franks and Mayers (1997) study review the German firms and reports that 85% of the public firms have major shareholding which is close to 79% in French firms. The study result of Barca (1994) reports that 88 % of manufacturing firms in Asian countries are controlled by one person or family. Fernandez, Gomez-Anson, (2006) review the data of Spanish listed firm to determine the relationship between ownership concentration and firm performance. The study reports a positive relationship between ownership concentration and firm performance.

In contrast, studies such as, Hoskisson, Johnson and Moesel (1994) and Hill and Snell (1989) determine the relationship between ownership concentration and firm performance. These studies report a negative relationship between ownership concentration and firm financial performance. Bjuggren, et al. (2007) reviews 190 Swedish listed firm and determine the relationship between ownership concentration and firm performance. The study finds that there is negative impact of ownership concentration on firm performance. Schiehll, E (2006) investigates the relationship between ownership concentration and firm performance by using a panel data for 159 Canadian firms. The study result reports that large inside shareholdings is negatively associate with firm performance. The study finds no relationship between outside shareholdings and firm financial performance.

A third stream of literature report no relationship between ownership concentration and firm performance. (See for example, Gedajlovic and Shapiro, 1998; Bhabra et al., 2003; Schiehll,

E, 2006). The empirical evidence reveals that there is non-linear association between board ownership and firm performance. Similarly, Amir Shehzad, Amina (2011) finds no significant relationship between ownership concentration and firm performance in Pakistan.

The above discussion revealed that the researchers have mixed arguments which is in favour and against of the opinion whether existence of ownership concentration have significant and positive influence on firm performance or not. This study finds that the corporate sector of developed and developing countries is dominated by large group of companies which prefer concentration of powers in few hands and link up ownership concentration with better corporate governance. These group of firms deemed to follow the concepts that block holders have relevant expertise, skills and experience to perform firm activities which enhance firm performance. Therefore, based on above discussion following hypothesis are developed regarding ownership concentration.

H9A: Ownership concentration has negative and significant impact on firm performance (ROA)
H9B: Ownership concentration has negative and significant impact on firm performance (MB Ratio).

4.10 Firm size

There are numerous studies which have used firm size as control variable. (see for example, O'Sullivan, 2003; Core et al, 2006; Lehn et al., 2009; Topak, 2011; Elsayed, 2007; Henry, 2008; Al-Matari et al., 2012; Amina Buallay 2017). There are various researchers, like (Garen, 1994; Agrawal and Knoeber, 1996; Nenova, 2003; Amina Buallay 2017) who have pointed out that large firms need more security and inspection. Jensen, (1986) and Beiner et al., (2006) studies report that firm size is positively correlated with better corporate governance.

The large group of companies are expected to be more diversified, more financially stable and expected to have a positive impact on firm performance. These large size firms have capacity to acquired economies of large scale which is resulted in positive impact on firm performance. Therefore, based on above discussion following hypothesis are developed regarding firm size.

H10A: Firm size has positive and significant impact on firm performance (ROA).

H10B: Firm size has positive and significant impact on firm performance (MB Ratio).

4.11 Firm Age

There are numerous studies which have revealed a positive impact of firm age on firm performance (see for example, Evan 1987; Lipczinsky and Wilson ,2001; Claessens et al. 2002; Boone et al. 2006; Black et al., Cui et al., 2008). Two latest studies find no relationship between firm age and firm performance, (see for example, Akshita Arora, Chandan, 2016: Amina Buallay 2017)

The older firms operating in industries from many years and they have well established system and procedures. These firms with larger age expected to be more mature and their managers have good external links which are expected to be high firm performance. Therefore, based on above discussion in Pakistani context, following hypothesis are developed for firm age.

H12A: Firm age has positive and significant impact on firm performance (ROA).

H12B: Firm age has positive and significant impact on firm performance (MB Ratio).

4.12 Leverage

Jensen (1986) pointed out that there is positive impact on firm performance when the level of debt increased its constraint managerial discretion. Moreover, Agrawal and Knoeber (1996) and Akshita Arora, Chandan (2016) reveal a positive association between leverage and firm performance.

The empirical literature of corporate governance documents the central banks of developing countries tend to reduce the interest rate at many occasions for easy and low-cost borrowing by the potential investors. The low rate of interest resulted in acquisition of optimal cost of operation and decrease in amount of debt which reduces firms' re-payment. Moreover, the study results of Nadeem A sheikh et al. (2013) examine the impact of corporate governance on firm performance for the period of (2004-2008) and find a positive association between leverage and firm performance measure by MB ratio. Therefore, based on above discussion following hypothesis are developed regarding impact of leverage on firm performance.

H11A: Leverage has positive and significant impact on firm performance (ROA).

H11B: Leverage has positive and significant impact on firm performance (MB Ratio).

4.13 Conclusion of literature review

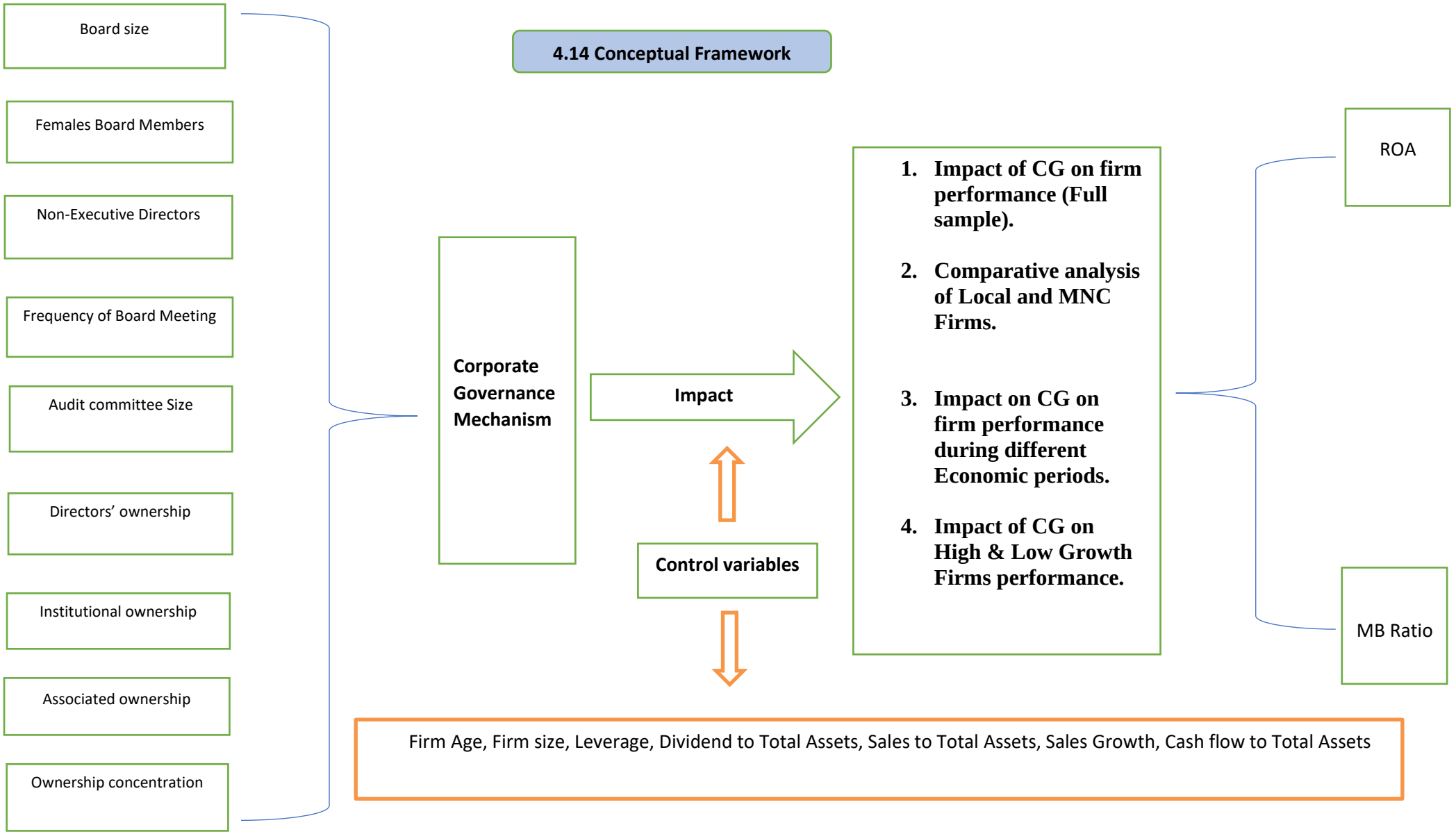
In conclusion, the existing theoretical literature and empirical evidence regarding impact of corporate governance on firm financial performance are equally conflicting. The researchers have mixed arguments in favour and against of the opinion whether various corporate

governance variables have significant influence on firm performance or not. The difference in empirical evidence is due to methodologies of research analysis and because of country to country different legal system, ownership structure and practice of corporate governance. In this regard, Pakistan is interesting research context to investigate the impact of corporate governance on firm financial performance. Pakistan is ethnically diverse populace having different social and cultural values and follow different industry practice attribute as a part of emerging market.

4.14 Conceptual Framework

The conceptual framework of this study can be explained by Figure 4.14. On the left-hand side, there are governance variables namely: board size, female board members, non-executive directors, frequency of board meeting, audit committee size, directors inside ownership, institutional ownership, associated ownership and ownership concentration. This is linked to firm performance on the right-hand side, measured by ROA and MB ratio. There are seven control variables which are firm size, firm age, leverage, dividend to total assets, sales to total assets, sales growth and cash flow to total assets. The empirical literature of corporate governance document that high growth and efficient firms have better corporate governance practice.

4.14 Conceptual Framework



Chapter 5

5: Research design, Data collection and Research methodology

5.1 Research Design

Selection and justification of appropriate research method is an essential element of research in social science. According to Punch (1998) it is very important to develop the most appropriate research method which directly associate with the nature and requirement of research issue. A crucial part of any research is to develop an effective research design to minimise the chances of drawing wrong conclusion from the date (Chisnall, 2005). Research design is a logical process to ensure that information collected for research is reliable and relevant to the research problem.

5.2 Research methods

There are mainly two types of research method namely the quantitative and the qualitative research methods. There is another method termed as mixed method which include both quantitative and the qualitative methods and develop a rational for mixing. The inter-correlated paradigmatic assumptions about the nature of reality (ontological assumption), the role of researcher (epistemological assumption) and the process of research lead to the scientific research. This study follows these assumptions to develop research philosophy, research approach, data collection and interpretation of results estimation

Quantitative methods like analysis of financial data generally adopt to test the effectiveness of corporate governance in empirical studies. The researches related to corporate governance examine the impact of corporate governance on firm performance by using various financial ratios, financial reports and trend which lies in the context of quantitate data. There is very little research on corporate governance which has used qualitative approaches. There may be very less information available to conduct a qualitative research related to corporate governance and firm performance. Therefore, the study employed a quantitative approach to test relationship between corporate governance and firm performance.

5.3 Research philosophy

Creswell (2009) document four research philosophy: positivism, advocacy or participatory, social constructivism and pragmatism and considered these as a basic set of beliefs that guide action. According to Burrell and Morgan (1994) the researchers must choose proper paradigm for their research work. The key matter of any research in social sciences is the philosophical assumption.

Positivism is research approach that adopt empirical methods to build up formal explanatory theory with the help of quantitative analysis. Positivism approach link with experimental, scientific, quantitative and deductive framework where researcher focuses on quantifiable observations with application of statistics and hypothesis development. (Neuman, 1997) Second, the philosophy of participatory or advocacy, is mostly seen in qualitative research but it can also provide a foundation for quantitative research. As per this philosophy, the research is based on an action agenda which may help to bring a change in the life of participant and their relevant organisation. The social constructivism is a standard approach which adopted for qualitative research. According to this philosophy, individuals try to understand the world as per their own observation and develop judgement.

The realism also called realistic approach, combines positivistic and interpretivistic paradigms, class analysis and structuralism, dialectical materialism and this approach recognize the social reality like positivism and more concern with conflict and change. Moreover, each method has its strength and weaknesses, but data base surveys is the most appropriate method of positivism approach. Therefor this study follows the positivist paradigm where hypothesis is developed based on investigation regarding effect of the better corporate governance on the firm performance in Pakistan.

5.4 Research approach

There are mainly two research approaches: inductive and deductive. The inductive approach defines as ‘the process of inferring a general law or principle from observation of instances’ and it is more concerned with development of a theory (Rothchild, 2006). This type of research starts by collecting data and then develops a sense from such data to analyse the problem. The analysing and interpreting of collection of data resulted in building of a theory. Saunders et al, (2009) reveals that the deductive approach is concerned with the explanation that what is

happening, and inductive approach explain that why something is happening. The difference between deductive and Inductive approach can be explain with the help of figure 5.4.

Figure 5.4 Research approach

Deductive approach	**Inductive approach**
Theory	Data
↓	↓
Hypothesis	Analysis
↓	↓
Data	Hypothesis
↓	↓
Confirmation	Develop a theory
↓	↓
Testing theory	Development of Theory

Source: Researcher own resources

Therefore, to link up research approach to the research philosophy, this study adopts deductive approach. The deductive approach is more suitable as it tests existing hypothesis that developed based on quantitative data. Therefore, this research approach is deductive. This study is based upon the philosophy of positivism along with deductive approach. Therefore, this study applied quantitative and deductive positivism approach to determine the relationship between corporate governance and firm performance of multinational and local firms in Pakistan.

5.5 Sample Selection

The sample consist of 259 non-financial firms listed on the Karachi Stock Exchange for the period of 12 years (2003-2014). It is practice of previous studies related to corporate governance that they excluded financial firms from sample data. Therefore, this study excludes firms operating in the financial industry (such as banks, insurance companies, government departments, Modaraba businesses and diversified financial services) due to the differences in the applicable regulatory requirements. Second, firms should have listed for at least one full

year as of the end of 2014. Finally, firms with missing data are excluded from sample. In addition, the study covered almost all non-financial MNC, family owned companies, small, medium and large, subject to availability of data.

The data related to governance variables and firms' specific accounting data collected from firms' annual reports, State Bank of Pakistan audited financial statement analysis, disclosure reports, firms' own website, Karachi stock exchange and Securities exchange commission of Pakistan. The annual reports of Pakistani local and multinational firms are prepared in accordance with and are considered consistent with international accounting standards. The annual reports supplied by management are also subject to external auditing, certify that they are prepared in accordance with statutory and professional principles (international auditing standards). The final sample is consisting on 259 firms. The details of data collected is explained in figure 5.5.

Figure 5.5
Distribution of sample data

Sector Name	Total Firms	% of Total firms	Selected Firms	% of selected Firms
Textile	156	35%	67	43%
Sugar	34	7%	30	88%
Fertilizer & Chemical	37	8%	16	43%
Pharmaceutical & Power	35	8%	16	46%
Manufacturing	70	16%	24	34%
Cement	22	5%	17	77%
Automobile	22	5%	19	86%
Miscellaneous	73	17%	70	96%
Non-Financial Firms	449	-	-	-
Financial Firms	132	-	-	-
Total Firms	581	-	-	-
Local Firms sample	370	82%	196	53%
MNC Firms sample	79	18%	63	80%
Total Firms sample	449	100%	259	58%

Source: www.psx.com.pk

5.6 Independent Variables

In this study, the main governance mechanism is grouped into two main categories which are board structure and ownership structure. These two categories help to determine the relationship between corporate governance and firm performance. This study reviews a set of nine internal corporate governance variables along with seven control variables which impact

on firm performance and are validated by the previous literature. These variables have discussed in chapter 3 of literature review.

5.7 Dependent Variables (Performance Measures)

Previous empirical studies have used two types of performance measures such as accounting base measures like ROA, ROE, etc., and market base performance measure such as Tobin's Q and MB Ratio to examine the relationship between corporate governance and firm performance. Haniffa and Hudaib (2006) argued that there is no consensus in the literature that which measure is the best indicator of financial performance. The researchers agreed that every measure has its own worth and weaknesses thus, there is no single measure that can be considered the best proxy for financial performance. However, this study focuses on two dimensions of firm performance which are accounting base measure (ROA) and Market base measure (MB ratio). Moreover, various control variables have included in this study to justify the application of accounting-based measures of performance. The formulas use for both performance measure are as follows:

5.7 (a) Return on Assets (ROA)

ROA gives an information that how efficient management is at utilizing its assets to generate earnings.

Formula = (Net Income) / (Total Assets).

5.7 (b) MB Ratio

The market to book financial ratio measures the market value of a company relative to its book value.

Formula = Market value of the shares / Book value of Total Assets

5.8 Control Variables

In order to determine specific impact of corporate governance on firm performance, it is important to include different control variables to limit omitted variable bias. These control variables affect firm performance, but they are not defined as corporate governance mechanism. According to Black et al., (2006) the use of control or omitted variables is very useful in research analysis as omitting an important variable may cause biased results in association of corporate governance and firm performance.

This study has selected control variables based on existing studies of corporate governance and data availability. The control variables remain constant and unchanged throughout the data analysis and define the variation in firm performance. However, in existing literature there is no specific rule to select any control variable. Therefore, by following previous practice this study has included seven control variables such as firm size, firm age, leverage, dividend to total assets, sales to total assets, sales growth and cash flow to total assets. The definition of control variables is further explained with the help of Figure 5.6.

Figure 5.6: Definition of variables

Independent variable	Definition
(A) Board Structure	
1-Board Size	Total numbers of directors on firm board
2-Female board members	Number of Female board members in board composition
3-Non-executive directors	% of Non-executive directors in board
4-Frequency of board meeting	Numbers of board meeting in a year
5-Audit committee size	Total Numbers of Audit committee members
(B) Ownership Structure	
6-Director's ownership	% of shares of directors, their spouse, children's and seniors' managers
7-Institutional ownership	% of share held by Banks and other financial institutes
8- Associated Ownership	% of Shares held by Associated shareholders
9- Ownership concentration	% of share held by top 5 shares holders divided by total shares
(C) Control Variables	
10-Firm size	Natural log of Market capitalization
11-Firms Age	Number of years since Firm listed in stock exchange
12-Leverage	Total debt / Total Equity
13-Dividend to total Assets	Ratio of Dividend to Total Assets
14-Sales to Assets	Ratio of sales to Total Assets
15-Sales Growth	Previous year sales minus current year sales and divided by previous year sales
16-Cash flow to total Assets	Cash flow to Total Assets
Dependent variables	
1-ROA	Ratio of profit before tax to total Assets
2-Market to Book value ratio	Market to book value of Total Assets

5.9 How many lags of performance are required for dynamic completeness?

Empirically, it is important for the consistent estimation of dynamic GMM Model, to assess that how many lags of performance are required to capture all information from the past. If the impact of past performance is not fully capture, there might be an omitted variable bias and estimation may be misspecified. Second, it is assumed that all older lags exogenous in relation to the residuals of the present, which can be used as instrument. (Wintoki, 2012)

The main concern is to make sure that enough lags have included to control the dynamic aspects of empirical relationship. If the enough numbers of lags have taken, then historical value of firm performance beyond those lags are considered valid instrument, provided it is exogenous to current performance shocks.

As the population sample of this study is consisted on annual data therefore, the first lag of dependent variable has taken to capture the dynamic completeness. The previous studies of corporate governance have documented that two lags of dependent variable are sufficient to capture the dynamic impact of corporate governance, (see for example, Glen et al., 2001; Gschwandtner,2005). However, this study follows (Adams and Ferreira, 2009; Dezso and Ross, 2012) who recommends the use of one lag of past performance including all control variables to capture dynamic endogeneity.

5.10 Panel data Issues and Methodologies

Panel data are repeated observation on same cross section, typically of individuals or companies in microeconomics applications, observed for several time periods. The terms longitudinal data and repeated measure are also use for it. Panel data meant to analyse the same cross-sectional unit (individual, firm, industry, country) and observed over time (days, quarter, years, before and after treatment).

The most common type of data which is generally available for empirical analysis are time series, cross sectional and panel data. In case of time series, data observe the value of one or more variable over a period. Whereas in case of cross sectional data value of one or more variable are collected for various units or samples at the same point of time. In Panel data, the same cross-sectional units as firms, countries or families are evaluating over time. Therefore, Panel data have space along with time dimensions. (Gujarati, 2003).

There are two main panel data regression models namely, fixed effects model and random effects model and these models have different assumption regarding error term. In case of fixed

effect model, it is assumed that individual effect term is constant. Whereas in random effect it is assumed that the individuals to be random which taken out from probability distribution. According to Green (2003) a general panel data regression model is written as:

$Y_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 X_2 \ldots\ldots + BnX_{it} + \varepsilon_{it}$

Where:

Y_{it} represent the dependent variable.

X_{it} represent independent variables.

β is constant term.

ε_{it} is the error term. (Green 2003)

5.11 Diagnostic tests for panel data

According to Carl Friedrich and Andrey, linear regression in which the errors expectation is zero and uncorrelated with equal variance is consider as the (BLUE) best linear unbiased estimator of the coefficient. This study run multiclonality, Heteroscedasticity, serial correlation and endogeneity test to examine whether the underlying statistical assumptions have violated which validate the status of BLUE.

5.11.1 Multicollinearity

According to Hair et al., (2009) the problem of multicollinearity arises when two are more variables are highly correlated which affect the estimation of regression. Gujarati (2003) explain that presence of multicollinearity makes the assessment of regression coefficients and hypothesis testing indeterminate. The existence of multicollinearity makes the regression coefficient unstable and difficult to elaborate. It can impact the coefficient to change signs and make it more complicated to choose the correct model.

In order to identify the existence of multicollinearity the variance inflation factor (VIF) has commonly used. The variance inflation factor (VIF) is commonly used to identify the presence of multicollinearity. The variance inflation factor defines the degree of all independent variable that been explained by other independent variable in order to remove collinear variables. (Gujarati, 2003). If VIF is greater than 10, then it shows that there is problem of multicollinearity. According to Gujarati (2003), identification of multicollinearity is initial step of the process and it must be follow with an appropriate solution of the problem. There are no

specific guidelines that how to overcome it but researchers suggested following recommendations:

- Combining time series and cross-sectional data
- Using prior or extraneous information.
- Transforming and obtaining new or additional data.
- Omitting highly collinear variables

5.11.2 Heteroscedasticity

Heteroscedasticity is a violation of one of the assumption of classical liner regression model. Normally heteroscedasticity occurs in following four situations:

- It occurs when variance of error term is not constant.
- There is a lot of variance arises in data
- If any important variable is missing from data
- When there is existence of skewness in data
- When there is functional misspecification
- If it's better suited liner model and researcher take log of liner model

The effect of heteroscedasticity that "B" no longer Blue which means they are not best liner unbiased estimator. There is some other estimator which has a lower sampling variance. In statistics, the Breusch–Pagan test developed in 1979 by Trevor Breusch and Adrian Pagan which use to test for heteroscedasticity in a linear regression model. It tests whether the estimated variance of the residuals from a regression are dependent on the values of the independent variables. If an F-test confirms that the independent variables are jointly significant then the null hypothesis of homoscedasticity can be rejected. (Zaimah Abdullah, 2015)

5.11.3 Endogeneity causes, effects and proposed responses

According to Wooldridge (2003) Endogeneity is a term use to explain the existence of endogenous explanatory variable in multiple regression model which is correlated with the error term, due to measurement error, omitted variable or simultaneity. It is one of the significant element of econometric analysis to investigate endogeneity which causes biased estimates for coefficients and standard errors. Generally, the effect of endogeneity problem is

that the regression model makes The coefficient on explanatory variable unreliable and inefficient in affecting the robustness of the governance performance association. Black (2001) study reveals that endogeneity is a common issue for studies related to corporate governance and firm performance. The study of Hammelberg, (2002) also supported the arguments in studies related to accounting and finance. It further reveals that variables related to corporate governance are exogenously determined by environmental factors like legal affairs and standard rules and regulations. (Andrews Owusu, 2012)

Coles et al (2008) document that the firm level corporate governance should be considered as endogenous as majority of corporate governance structure are based on choice variables which may become the cause of endogeneity. The study results of Chenhall and Moers (2007) pointed out that when variable is determining within the context of model, it is termed as endogenous whereas if the value of variable is determining outside the model then it said to be exogenous variable and is correlated with dependent variable. Various researchers (such as, Borch and Koke, 2002; Larcker and Rusticus, 2007; Chenhall and Moers, 2007; Roberts and Whited, 2011) have explained three causes of endogeneity exist in governance-performance relationship. These are as follows:

1. Omitted variable or unobserved heterogeneity:
2. Simultaneity or reverse causation
3. Measurement error

5.11.3A Omitted variable or unobserved heterogeneity

Omitted variable endogeneity occurs if the model does not include all relevant variables. For example, in a situation where a relevant control variable is omitted from equation because of unavailability of data. (Wooldridge, 2009)

5.11.3B Simultaneity or reverse causation

Simultaneity or reverse causation endogeneity arises when one or more of the independent variable (Xi) is jointly determined with dependent variable (Yi). In case of studies related to corporate governance, the right-hand side variable and firm performance variables may be simultaneously determined. (Wooldridge, 2009)

5.11.3C Measurement error

Roberts and Whited, (2011) point out that measurement error endogeneity occurs when variables of interest are imperfectly measured. Therefore, if the measurement error is in firm performance (dependent variable), the statistical implications are like the omitted variables endogeneity.

5.11.3D Durbin-Wu-Hausman Test (DWH)

This study applied Durbin -Wu-Hausman Test (DWH) test to check the endogeneity problem in the data. The null hypothesis of Durbin -Wu-Hausman Test is that regressors are exogenous. Where the DWH test shows the endogeneity problem, it is appropriate to use dynamic GMM model to control the issue of endogeneity (Nirosha Hewa, 2012).

5.12 Panel Data Framework

This study applies panel data analytical framework to investigate the association between corporate governance and firm financial performance with a proposal to address the problems of endogeneity. One of most important motivation of Panel data is that it helps to control unobserved heterogeneity. In this study, the method of analysis is multiple regressions and the method of estimation is pooled ordinary least squares, fixed effects and random effects that explained later in this chapter. (Cameron, 2007)

5.13 Pooled OLS

Pooled OLS assumes constant coefficients which is related to both intercepts and slopes. Moreover, there is neither a significant temporal effect nor a significant firm specific effect so there is possibility to pool all data and use a pooled OLS regression model. (Andrews Owusu, 2012) Therefore, the classical assumption of uncorrelated observations and constant variance must continue to hold. According to Gujarati (1995) this model is not appropriate if the time period (t) is small is small. This study uses the following general form of Pooled OLS regression.

$$y_{it} = a_i + b_i x_i + e_i \quad \ldots\ldots\ldots (1)$$

The x_i and e_i are correlated so the estimated Pooled OLS regression is biased due to unobserved heterogeneity. The pooled OLS depend upon firm comparison and within variation as compared to cross sectional OLS regression so there is tendency that this bias may be lower.

5.14 Fixed Effect Model

Fixed effect model determines the difference in intercepts for every groups by using as separate dummy variable for each group. The fixed effect model is first introduced by Mundlak (1961) and it helps to increase the degree of freedom. According to Green (2006), the Ordinary least

square model (OLS) with dummy variable helps to control difference among groups with the assumption of constant slopes (coefficients) for constant variance across groups and independent variables.

Fixed effect indicates the association between predictor and variable outcomes within an entity like country, firm and person. Each entity has its own unique features that may or may not impact on the predictor variables. Fixed effect eliminates the effect of time-invariant features from predictor variable. Second assumption of fixed effect model is that those time-invariant features are unique to the individual and should not correlated with features of other individuals. (Kohler and Kreuter, 2005) The advantage of fixed effect model is that it controls all time-invariant difference among individuals therefore the estimated coefficient of FE model cannot be biased due to omitted time-invariant features, for example, gender, race and religion. The disadvantage which associate with fixed effect model is that it cannot assess time-invariant causes of the dependent variables. (Andrews Owusu, 2012)

According to Green (2002) the term fixed effect does not vary over time. Therefore, fixed effect model developed consistent estimates and it is written as:

$Y_{it} = \beta_1 X_{it} + \alpha_i + \varepsilon_{it}$ ..... (2)

Where:

– *Yit* representing dependent variable where *i* = entity and *t* = time.

– β_1 is the coefficient for independent variable

– X_{it} represents one independent variable

– αi (*i*=1…. n) is the unknown intercept for each entity

– ε_{it} is the error term (Green 2003)

5.15 Random Effects Model

Random effect model is basically hierarchical linear model which is also known as variance components model. Random effect model is used in analysis of Panel or hierarchical data. This model assume that data is based on hierarchy of different populations whose difference relate to that hierarchical. The significance of the random effects is that the variance among groups is assumed to be uncorrelated and random with independent variables. In case of random effect model there is chances of non-availability of some variable which can lead to the problem of omitted variable bias. (Greene, 2006) This model also associates with consistent estimates that develop from correlation between independent variables and individual effects. The random

effect model is applied when researcher believe that difference across entities have some impact on dependent variable. Another advantage of random effect model is that time invariant variables like gender can be included in it whereas these variables are absorbed by intercept in case of fixed effect model. (Andrews Owusu, 2012)

The random effect model can be written as:

$Y_{it} = \beta_1 X_{it} + \alpha_i + \varepsilon_{it}$ ……. (3)

One of the assumption of random effect model is that entity's error term is not correlated with predictors that allows time-invariant variables to act as explanatory variables.

5.16 Selection between pooled OLS and the alternative random and fixed effects

In this study, a panel data technique has used to test all the existing hypothesis. Therefor the panel data regression assumptions are tested to choose between pooled OLS and the alternative random and fixed effects regression models. This study tests pooled OLS regression and determine whether unobserved variables are uncorrelated with the error term *(uit)* and the independent variables, if it is the case then random effect model is suitable whereas OLS estimator is consistent but not efficient. However, if there is no presence of unobserved variables then OLS is the more efficient and suitable. (Andrews Owusu, 2012)

5.17 Hausman Test

Hausman test apply a null hypothesis that random effect and fix effects estimators do not differ systematically. If the null hypothesis is rejected, then fixed effect model is considered a most appropriate model. If results of hypothesis show that the P value is less than the significance level at 1%, 5% or 10%, then null hypothesis is rejected. Hausman test helps to determine whether fixed or random effect is more appropriate by calculating null hypothesis that the preferred model is random effect vs the alternate fixed affect model. Hausman test assess whether the unique errors (ui) are correlated with regressors or not by using hypothesis. (Green 2008).

5.18 Generalized Method of Moments (GMM)

This study employs dynamic model, GMM to examine whether there is presence of target mechanism between corporate governance and firm performance. Under the context of dynamic modelling framework, the study evaluates the dynamics association between corporate governance and firm performance. Generalized Method of Moments (GMM) approach has first introduced by Holtz-Eakin, Rosen Newey (1988) and Bond and Arellano (1991) and extended by further researchers like Bover and Arellano (1995) and Blundell and Bond (1998).

There are few limitations of static model which limit its scope of estimation. The static model unable to determine the internal and external dynamic shocks that influence firm's overall decision making and corporate strategy. On the other hand, dynamic model depicts the long-term impact of corporate governance on firm performance. The pooled ordinary least square (OLS) regression and fixed effect models significantly suffers from severe biases under static modelling framework. Pikas et al., (2003) study reveals that fixed effect model is biased upward, whereas in case of pooled OLS there is downward biases because of ignoring the existence of fixed effects.

In accordance with Pikas et al., (2003) GMM model covers both dimension of times series and cross-sectional estimations therefore, it helps to provide an efficient and more useful estimator of the econometrics. Arellano and Bond, (1991) point out that dynamic model helps to resolve the deformation caused by fixed effects. Furthermore, the GMM model not only resolve the problem of endogeneity but also arrange efficient instrument that control endogeneity. The General functional equation of GMM are as follows:

$$\mathrm{X}it \;=\; \mathrm{f}\,(y_{it-1} \ldots y_{it}\; p, \mathrm{Z}it\;, \eta\mathrm{i}) \quad \ldots\ldots\ldots (4)$$

X, Z, and y in above equation represent the governance and performance variables, η is the unobserved firms' specific attributes. Therefore, equation recommended heterogeneity need to be address in order to determine the impact of governance variables on firm performance which require to estimate following equation:

$$y_{it} = \alpha + \textstyle\sum_s \kappa_s y_{it-s} + \beta X_{it} + \gamma Z_{it} + \eta_i + \varepsilon_{it} \qquad s = 1, \ldots, p \quad \ldots\ldots\ldots (5)$$

The above equation is conditional on entity heterogeneity. Furthermore ε_{it} is a random error term and β is the effect of independent variable on the dependent variables. It is common observation that when estimation is determine by using OLS, random effects and fixed effects regression for panel, the problem of estimated parameters biases occurred. This bias in OLS,

random and fixed effect regression is because of dynamic endogeneity and unobserved heterogeneity which leads to estimation results less efficient. In order to resolve this problem, the application of dynamic model of panel data (GMM) is suggested in empirical studies of economics and finance. Moreover, the use of GMM provide more reliable, efficient and unbiased results even in the presence of endogeneity and heterogeneity. Therefore, to resolve the problems of inefficiency, inconsistency and biasedness in estimation model by using OLS, fixed and random effect, this study prefers to use dynamic GMM panel model. There are two essential steps in estimation of basic model which can be written in the following dynamic model equation:

$$\Delta y_{it} = \alpha + \kappa_p \sum_p \Delta y_{it-p} + \beta \Delta X_{it} + \gamma \Delta Z_{it} + \Delta \varepsilon_{it}\,, \quad p > 0 \qquad \ldots\ldots\ldots (6)$$

The first differencing removes any potential bias that may exist due to time-invariant unobserved heterogeneity. After first differencing, the equation 2 estimate via System GMM by using lagged value of explanatory variables as instrument for the current explanatory variable. (Wintoki et al, 2012)[3]. Therefore, this study uses the historical values of firm performance, governance variables and control variables as instruments for current changes in these variables. The important feature of dynamic panel is that its use the firm's history as instruments for explanatory variables of the model. For the validity of these instrument, they must meet two criteria. First, the instruments must produce a source of variation for governance variables. Second, the lagged or historical value must produce an exogenous source of variation for corporate governance variables. Therefore, the lagged of independent variable must be uncorrelated with the error term in Eq. (2).

Thus, impact from firm past performance is hold for current expected performance within p time. Therefore, past performance (lags) is sufficient to capture the influence of firm history on current performance. The p lags confirm the dynamic completeness of the model as define in equation of Eq2. (Wintoki, 2012). The model included lags of performance thus, any firm historical information that is earlier than p lags of performance has not direct impact on current performance and affect only on current firm characteristics and governance. Therefore, the firms' history older than t-p considered as exogenous in relation to any shocks to firm current of future performance. By following (Wintoki, 2012) this study examines the validity of

3 See Wintoki et al, (2012) for more details about GMM estimations.

exogeneity assumptions with empirical test. The orthogonality conditions can explain in following ways provided assumptions of exogeneity are valid:

$$E(X_{it-s}\varepsilon_{it}) = E(Z_{it-s}\varepsilon_{it}) = E(y_{it-s}\varepsilon_{it}) = 0, \qquad \forall s > p \ \ldots\ldots\ldots (7)$$

The equation 2 is estimated based on GMM and above orthogonality conditions, contain three econometric shortcomings. First, Beck et al., (2000) documents that if the estimated model is conceptually in level, the difference may reduce the power of testing. (Wintoki et al., 2012). Second Arellano and Bover (1995) report that for first-differenced equations the variables in level may be a weak instrument. Third, first-differencing may intensify the influence of measurement errors on the explanatory variables (Griliches and Hausman, 1986).

Arellano and Bover (1995) and Blundell and Bond (1998) suggested that these shortcomings can overcome and GMM estimator can be improve by adding the levels equations in estimation procedure. Wintoki et al. (2012) suggested that the variables of first differenced can be used as instruments for the equations in levels in a "stacked'' system of equations that consist of the equations in both, levels and differences. It developed a System GMM estimator which can be explain in following ways:

$$\begin{bmatrix} y_{it} \\ \Delta y_{it} \end{bmatrix} = \alpha + \kappa \begin{bmatrix} y_{it} \\ \Delta y_{it} \end{bmatrix} + \beta \begin{bmatrix} X_{it} \\ \Delta X_{it} \end{bmatrix} + \gamma \begin{bmatrix} Z_{it} \\ \Delta Z_{it} \end{bmatrix} + \varepsilon_{it} \quad \ldots\ldots\ldots (8)$$

The equations in level have issue of unobserved heterogeneity therefore, to mitigate this problem it is assume that explanatory and control variables may correlate with unobserved effects but remains constant over the sample period. (Schultz et al., 2011; Wintoki et al., 2012) This assumption is valid in a short period if there are unobserved effects like unobserved director skills and diligence or firms' productivity. The assumption supports an additional orthogonality condition such as:

$$E[\Delta X_{it-s}(\eta_i + \varepsilon_{it})] = E[\Delta Z_{it-s}(\eta_i + \varepsilon_{it})] = E[\Delta y_{it-s}(\eta_i + \varepsilon_{it})] = 0 \quad \forall s > p \ldots\ldots (9)$$

In the above conditions, the GMM provides efficient estimates while controlling the unobserved heterogeneity, dynamic endogeneity, simultaneity and the dynamic relationships between the present values of the independent variables (corporate governance mechanisms) and the past values of the dependent variables. (Wintoki et al., 2012)

This study estimates dynamic GMM by using the orthogonality conditions of (3) and (5) based on assumption that there is not any problem of serial correlation. Moreover, the orthogonality conditions of (3) and (5) allow that in model estimation the lagged levels can use as instruments for differenced equations and lagged differences as instruments for the levels equations. In addition, a test is conduct for the valid application of orthogonality assumptions and the strength of the instruments based on above assumptions.

In order to test the validity, adequacy and appropriateness of the given model and estimation method, it is important that instruments use in model are valid and exogenous as group. Therefore, Arellano-Bond, first order auto-correlation AR (1), second order autocorrelation AR (2) and Hansen test of over-identifying restrictions examines the validity and strength of instrument. The null hypothesis of Arellano-Bond AR (2) test suggests that instruments are valid which means that it's not correlated with error term. The null hypothesis of Hansen test suggests that instruments as a group are exogenous. Under the context of dynamic modelling framework, the study evaluates the dynamics association between corporate governance and firm performance.

Chapter 6

Results and discussion (Full sample)

6.1 Introduction

This chapter aims to presents the empirical results analysis of the data about the relationship between corporate governance and firm performance in Pakistan. This chapter has organised as follows. Section 6.2 and 6.3 present the descriptive statistics of the sample data and treatment of outliers respectively. Section 6.4 and 6.5 present the pair-wise correlations and diagnostic test of Panel data. This is followed by model specification and performance analysis respectively (section 6.6, 6.7 and 6.8). Finally, section 6.16 is about robustness of result which is followed by summary of the chapter in section 6.17.

6.2 Descriptive statistics (Full sample)

Table 6.2 provides a summary of descriptive statistics of dependent, independent and control variables of this study. The table presents the number of observation, mean, median, standard deviation, minimum and maximum value of each variable. There are two main categories of independent variables such as, board structure and ownership structure.

Table 6.2 indicates that the average mean of ROA is 0.1780, median is 0.15, maximum value is .986 and minimum is -.98. The positive value of mean indicates that the majority firms have financial worth over the sampling period. Though, the average mean is small, but this positive value depicts that the sample firms created have shareholders value. This positive mean value also has evidence of an effective utilisation of firm assets to generate operating surplus. Notably, Nadeem Ahmad Sheikh et al., (2011) examine the relationship between corporate governance and firm performance in Pakistan and reports average mean value of ROA is 0.067, maximum value 0.7967 and minimum value -0.2323. The difference in descriptive statics may be due to the reason that Nadeem Ahmad Sheikh e al, (2011) study took relatively small sample of 154 firms for 5 years (2004-2008) whereas, this study sample consist of 259 firms and for 12 years (2003-2014).

The mean of MB Ratio is 2.7445 that is greater than one which shows that on average, firms have created value for the shareholders. The maximum MB Ratio is 18.96, median is 2.11 and minimum value is 0.10.

The minimum numbers of board size are 5 and maximum is 15. The mean of board size is 7 and median is 7. In Pakistan, majority of firms prefer seven members in board of directors. This board size is similar to US average board size, as the study results of Switzer and Tang (2008) document that the range of board size in US is from 4 to 15 and average board consist of 7 to 8 members. The minimum number of female members in board is 0 and maximum is 5. The mean of female members is 0.94 % which is significantly low as compared to European average female board members which is 10% (Boards in Turbulent times, corporate governance report, 2009). The females in Pakistan are less tempted to serve as a board member especially after marriage due to domestic responsibilities and cultural environment in Pakistan. In general, the females in Pakistan does not prefer to continue their jobs after marriage because of strong family system. The minimum number of non-executive directors is 0, median is .25 and maximum is 8. The mean of non-executive directors is 0.2531 which indicates a very small contribution of non-executive directors in board of directors. In Pakistan, the family dominating firms are reluctant to appoint non-executive directors in order to dominate in board decision making. The minimum number of board meeting per year is 2, median is 4 and maximum is 9. The mean of frequency of board meeting is 4.6861 which indicates that Pakistani firms have awareness that frequency of board meeting helps to improve the overall performance of the firm through effective communication and monitoring. The minimum size of audit committee is 0, median is 3 and maximum is 8. The mean of audit committee is 2.9223 which indicates that Pakistani firms recognize that the existence of audit committee increases internal monitoring, decrease internal fraud and improve corporate governance compliances.

The minimum value of director's ownership is 0, median is 0.25 and maximum is 0.99. The mean of director's ownership is 0.3065. This indicates that due to family ownership factor in Pakistan, a reasonable number of selected sample firms have directors' ownership. This situation also supports the argument that presence of director's ownership has positive influence on firm performance as it helps to inline the interest of managers and shareholders.

The minimum value of institutional ownership is 0, median is 0.25 and maximum is 0.9898. The mean of institutional ownership is 0.3261. The maximum value of 0.98 which indicates that in Pakistan the institutional ownership has strong existence. The minimum value of associated ownership is 0, median is 0.47 and maximum is 0.98. The mean of associated ownership is 0.4229. These are group of companies which acquire the shares of other firms and may increase the level of ownership concentration.

The minimum value of ownership concentration is 0, median is 0.6 and maximum value is 0.986. The mean of ownership concentration is 0.5839. It supports the situation where the controlling shareholders influence the ways to company run and obtain private benefits at the expense of minority shareholders interest. The minimum value of firm size is 11.59, median is 19 and maximum is 24.67. The mean of firm size is 19.10 which indicates that there is of mix of small, medium and large size firms in selected sample.

The minimum age of the firm is 17, median is 22 and maximum is 35. The mean of firm age is 23.85. This indicates that selected sample consist of both new and old age firms. The minimum value of leverage is 0, median is .147 and maximum is .0983. The mean of leverage is 0.1968 which indicate that firms in selected sample are highly leveraged. The minimum value of dividend to asset is 0, median is 0.75 and maximum is 5.164. The mean of dividend to asset is 0.9266. This indicates that earning of Pakistani firms are not in good support of the dividend payment. The minimum value of sale to assets is -0.00156, median is 0.196 and maximum is 3.4753. The mean of sale to total asset is 0.3013. This indicates the firm's efficiency of generating sale for each value of assets is vary among sample firms. The minimum value of sale growth is -0.1373, median is 0.144 and maximum is 1. The mean of sale growth is 0.1616. This sale growth rate is very low and generally the firms with low growth of sale have not sufficient funds to run the operation efficiently. The minimum value of cash flow to total asset is -3.055, median is 0.222 and maximum is 4.2499. The mean of cash flow to total asset is 0.1360. This indicates that firm efficiency of collecting cash from sales and debtors which is not seems very efficient in this sample.

6.3 Assumption of Outliers

An outlier or outlying is an observation that is very unlike and with a large residual in the sample population. (Gujarati and Porter, 2009). Stock and Watson (2007) document that the result may biased due to the existence of outliers as it may cause to non-linearity problem (Ntim, 2009). The outliers in statistics are those points of observation that can be differentiated from other observation. (Hair et al., 2006). Similarly, Grubbs (1969) report that outliers in statics consider those observations that are unique and distant from the other observations.

The decision about drop or retaining of the outliers from model is depend upon its effects on The coefficient on regression analysis. Generally, the researcher run the model with and without the outliers and compare its results with each other. If the difference is not significant

then outliers still retained to ensure generalisation of the entire sample population. The alternate option is winsorizing, by which extreme values are limiting to minimise the effect of outliers.

This study examines the outliers in data and resolved the problem of outlying observations by winsorizing which helps to replace the outliers' observation by executing the command in STATA. The winsorizing is a process of replacing the outlier observations with the mean plus (or minus) three standard deviations. This process helps to reduce the possibility of violations of OLS regression assumption like linearity and normality which is part of regression analysis. (Abdullah. M, 2014).

6.4 Correlation Matrix

The results of correlation matrix present in table 6.4 which indicates that explanatory variables are both positively and negatively correlated with dependent variables such as ROA and MB Ratio. Moreover, most of the cross correlation of explanatory variables are small, thus at first stage it does not show any problem of multicollinearity among the explanatory variables. For example, the highest correlation is between associated ownership and director's ownership (0.52) which indicates that Pakistani firms have both type of ownership such as, associated and director's ownership at the same time. The second highest correlation is between firm size and board size (0.23) which supports the theoretical hypothesis that larger firms have large board.

Table 6.4 Correlation Matrix

	ROA	**MBRatio**	**BSize**	**Female**	**NED**	**B Meet**	**Acosize**
ROA	1						
MB Ratio	0.1097	1					
Board Size	0.0754	0.0767	1				
Female	0.0059	0.0189	-0.0532	1			
NED	0.0517	0.0220	0.1624	-0.0514	1		
Board Meet	-0.0316	-0.0274	-0.0159	-0.0093	0.0121	1	
Acom Size	0.0301	-0.0254	0.2034	-0.1691	-0.0698	-0.0335	1
Dir Own	-0.0292	-0.0358	-0.1728	0.1303	0.1146	-0.0066	-0.0679
Institutional Own	0.0299	0.0169	0.0753	-0.1415	-0.1052	0.0343	0.0772
Associated own	0.0624	0.0406	0.1894	-0.1188	-0.1229	0.0309	0.1197
Own Con	-0.0206	-0.0120	0.0835	-0.0811	-0.0453	-0.0277	0.0241
Firm Size	0.1534	0.0018	0.2345	-0.0333	0.0396	-0.045	0.1576
Firm Age	0.0264	-0.0159	0.0609	0.0224	0.0061	0.0034	0.0253
Leverage	-0.1623	-0.0507	-0.0367	0.0254	-0.0194	0.0016	-0.0706
Dividend to TA	0.1032	0.0954	0.1151	-0.0588	0.0168	-0.049	0.161
SaletoAsset	-0.0418	-0.0217	0.0123	-0.0000	-0.0132	0.0136	0.0169

Sale Growth	0.0320	-0.0025	-0.0009	0.0029	-0.0154	0.013	0.0149
CF to TA	-0.0023	0.0560	0.0373	-0.0364	-0.0739	-0.0114	0.0327

	DirOwn	**Ins Own**	**Ass own**	**OwnCon**	**FSize**	**FAge**	**Leverage**
Dir Own	1						
Institutional Own	-0.3267	1					
Associated own	0.5254	0.1829	1				
Own Con	0.0490	0.0760	0.3312	1			
Firm Size	-0.1426	0.1995	0.1906	0.0905	1		
Firm Age	0.0068	-0.0120	0.0792	0.0520	0.0465	1	
Leverage	0.0661	-0.0372	-0.0990	-0.0119	0.0038	-0.0346	1
Dividend to TA	-0.0899	0.0415	0.1904	0.0953	0.1224	0.0531	-0.1248
SaletoAsset	-0.0232	0.0616	-0.0669	-0.0709	0.0456	-0.0419	0.0646
Sale Growth	0.0161	0.0250	-0.0205	0.0017	-0.0316	0.0048	-0.0111
CF to TA	-0.0973	0.0524	0.1602	0.0739	0.0206	0.0096	-0.0773

	DivtoTA	**SaletoAss**	**Sale G**	**CFtoTA**
Dividend to TA	1			
SaletoAsset	-0.0339	1		
Sale Growth	0.0324	-0.0263	1	
CF to TA	0.0774	-0.0058	0.0021	1

The other high correlations are between audit committee and board size (0.21), firm size and associated ownership (0.20), associated ownership and board size (0.19), associated ownership and board size (0.19), director's ownership and board size (0.18), audit committee and female (0.17) etc. None of the independent variables are above 0.53 which indicates that the likelihood of multicollinearity in OLS regression is low.[4] This study also run a formal test of multicollinearity such as VIF (Verification inflation factor) test to validate the results about multicollinearity.

6.5 Diagnostic tests for panel data

According to Carl Friedrich and Andrey, A linear regression about which the errors expectation is zero and uncorrelated with equal variance is consider as the (BLUE) best linear unbiased estimator of the coefficient. This study run a few diagnostic tests to investigate

4 Multicollinearity may be a problem when the correlation exceeds 0.80 (Gujarati, 2003; Haniffa and Hudaib 2006; Ramly 2012).

whether the underlying statistical assumptions have violated which validate the status of BLUE. These diagnostic tests have discussed in chapter 5, section 5.10. Therefore, this section examines the VIF (Verification inflation factor) test, heteroscedasticity, autocorrelation and Hausman test. These test results are recommending whether the underlying assumptions of OLS (ordinary least square regression) have followed or violated. The results of these tests help to determine the best fit model for this study. Therefore, first diagnostic test of this study is VIF test which examine the issue of multicollinear.

6.5.1 Test of Endogeneity

Endogeneity is a term which is used to explain the existence of endogenous explanatory variable in multiple regression model which is correlated with the error term, due to measurement error, omitted variable or simultaneity. A detailed discussion about endogeneity has explained in chapter 5, section 5.11. Most of the previous studies of corporate governance have ignored the effects of endogeneity. Generally, the effects of endogeneity are that the regression model makes the coefficient on explanatory variable unreliable and biased. The ordinary least square (OLS) and fixed effect estimation can have only be obtained efficient results when the independent variables are exogenous. Therefore, it is important to test endogeneity for efficient, reliable and unbiased estimation of the model. (Wooldridge, 2003)

This study conducts a Durbin–Wu–Hausman (DWH) test to check whether endogeneity has existed in corporate governance and firm performance relationship. The DWH test examines the endogenous association between corporate governance variables and proxies of financial performance (ROA, MB Ratio). The result of DWH test shows that null hypothesis (Ho: regressors are exogeneous), cannot accepted as [Chi-sq (8) = 25.67; p= 0.004]. Table 6.5.1 presents the result of DWH test which indicate that variables (denoted by*) have significant endogeneity problem. The existence of endogeneity makes the estimation results biased which led to the application of dynamic GMM estimation.

6.5.1 The DWH test for endogeneity of regressors (Full Sample)

Ho: Regressors are exogeneous

Variables	**ROA**	**MB Ratio**
Board size	6.75***	5.58***
Female	0.032	0.675
NED	3.44**	2.56**
Board Meeting	4.76***	4.67***

Audit committee size	5.15***	0.13
Director Ownership	2.14**	1.95*
Institutional Ownership	0.12	0.34
Associated Ownership	0.007	0.06
Ownership Concentration	0.346	0.88

6.5.2 Does firm's past performance impact on current Governance- A concept of dynamic endogeneity

The empirical research of corporate governance documented two potential source of endogeneity such as, simultaneity and unobservable heterogeneity. However, one source of endogeneity which is ignored by the most of previous studies labelled as dynamic endogeneity that arises when current variables of corporate governance are function of firm past performance. The ignorance of dynamic endogeneity can have serious consequences for inference (Wintoki et al., 2012).

Therefore, to address the issue of endogeneity this study follows four main steps for empirical analysis, (see for example, Wintoki et al., 2012). At first stage, this study explains the theoretical reasoning and empirical evidence which support the arguments that corporate governance is dynamically associated with firm past performance. At second stage, this study develops a dynamic estimator which has capacity to deal with dynamic nature of the association between corporate governance and firm performance. Third, this study applies the Generalise method of moment (GMM) to panel data to estimate the association between corporate governance and firm performance. Fourth, this study examines the implications of dynamic GMM results to address the issue of endogeneity in governance performance relationship.

The theoretical arguments of this study are based on Hermalin and Weisbach's (1998) model who document that board structure is partly function of bargaining process between the chief executive officer (CEO) and the members of board. The bargaining position of CEO is the function of his abilities and skilled which determine by past performance therefore, board structure depends on past performance. (Wintoki et al, 2012). There is another possibility regarding impact of board structure on firm past performance which is revealed by Raheja (2005) study that board structure is determined by the firm characteristics which are related to past performance.

Hermalin and Weisbach, (1998) support the above arguments that firm's poor performance often, leads to the appointment of more independent non-executive directors. It further documents by Dedman (2000) that the firms are preferred to comply with corporate governance recommendations by acquiring more non-executive directors in response of poor corporate performance. Therefore, above discussion concludes that firm past performance has an impact on future structure of corporate governance in any firm.

Similarly, Fama and Jensen (1983) and Boone et al, (2007) document that large firms are more systematic and have formulized chain of command. Therefor the board monitors and ratify the decision of senior managers. It supports the argument that information requirements of larger firms need to have larger board. The researchers, such as (Coles and Naveen, 2007; Raheja et al, 2007; Lehn et al, 2008; Netter, and Yang, 2008) have reported a positive association between board size and firm size. Therefore, firms size is likely to be positively associate with firm past performance. Moreover, the study results of Raheja (2005) and Harris and Raviv (2008) reveal that past performance has direct impact on firm's information environment, ability to generate profit and opportunity cost of outside directors. These factors are directly associated with development of board structure.

6.6 Justification of GMM model

Empirical studies argue that results of ordinary least square (OLS) and fixed effect models can be affected by the presence of endogeneity thus, develops inconsistent and biased results. The traditional fixed effects model can reduce the bias which normally generate from heterogeneity but at the same time it does at the expanse of assumption of strict exogeneity. Therefore, based on above arguments the results of OLS and fixed effect models may be biased and cannot produce consistent estimates. A large strand of studies document that ordinary least square (OLS) and fixed effects estimation may have biased results if the explanatory variables are not strictly exogenous and panel's time dimension is small (Wintoki et al.,2012; Gibson et al.,2013; Saeed et al., 2016).

This study re-examines the arguments of Wooldridge (2002) and Roodman (2008) that if there is a dynamic association between current values of an explanatory variable and past realizations of explanatory variables, an OLS and fixed effect model may estimate biased results and such biased will be opposite of the dynamic relation. (Wintoki, 2012)

Next in the line with previous arguments, the application of 2SLS or GMM estimation can help to fix endogeneity problem and generate more consistent and reliable results. In order to fix endogeneity problem, most of previous studies have used 2SLS (two stages least Square) method. However, 2SLS is required an application of a valid instruments which correlate with endogenous variables and not associate with error term. The DWH (Durbin-Wu-hausman test) results of this study document that the corporate governance variables have an endogeneity effect on ROA and MB ratio. Therefore, it is difficult to find an appropriate instrument because the inclusions of weak instrument in model may lead to misinterpretation of coefficients. The empirical research also documents that GMM estimation is more appropriate in a situation where it is difficult to find instrumental variable to fix the problem of endogeneity and simultaneity. (Nirosha Hewa, 2012)

This study uses dynamic system GMM estimator due to unavailability of appropriate external instruments in existing research especially dynamic relationship of corporate governance. Therefore, a dynamic two step system GMM estimator is a feasible solution to account for endogeneity. (Roodman, 2009b; Nakano and Nguyen, 2012). The system GMM estimator allows researchers to use instruments available within the model itself.

In addition, there are two main advantages of panel dynamic GMM estimation. First, it avoids consistency of endogeneity with the application of lag variables (instrumental variables) which helps to control simultaneity. Second, GMM modelling allows to treat all variables as endogenous. Moreover, GMM estimator covers the orthogonality conditions which assume that there is no serial correlation in error term. The orthogonality conditions allow researchers to use lagged level as instruments for difference equations and lagged differences as instrument for the level equation. Moreover, GMM modelling is more appropriate where N is greater than T (Mileva, 2007). This study sample consists of substantial number of firms such as, 259 and time is 12 years therefore, two step system GMM is the most appropriate model for this study.

6.7 Application of GMM Modelling

The dynamic GMM model, is one of the advance estimation techniques which is more reliable and consistent as compared to ordinary least squares (OLS) and fixed-effects estimates.[5] First, unlike OLS estimation, GMM has capacity to include firm fixed effects to account for (fixed) unobservable heterogeneity. Second, unlike fixed-effects model, it allows to determine the

5 According to Blundell and Bond (1999) the basic advantage of GMM approach is that the model to be estimated is not necessarily to be homoscedastic and serially independent.

impact of past performance, shocks or previous realizations on current governance variable. Third, unlike OLS and fixed effect estimators, the GMM model has capacity to use some combination of variables from firm history as valid instruments to fix simultaneity. Fourth, GMM model eliminates the need of external instruments as it can rely on set of internal instruments within model itself. Therefore, the past values of governance variables can be used as instruments for current governance. (Wintoki et al, 2012).

The empirical literature documents that most often the instruments are selected based on unrealistic assumption of the data leading to the application of instrument that are not fully exogenous (Durnev and Kim, 2005; Aggarwal et al., 2009). The system GMM has capacity to overcome this problem as it allows to employ the past values of explanatory variables as instruments without effecting the efficiency and consistency of the estimators. However, in case of instrumenting explanatory variables with lagged values may evoke inconsistency if the association of lags and current value is weak. This study estimates the model with system GMM which obtain efficient estimates while controlling time-invariant unobserved heterogeneity, simultaneity and determine a dynamic association between current value of explanatory variable and past value of dependent variables.

6.8 Model Specification

The regression model of this study includes both, accounting based and market-based measures of performance (ROA and MB Ratio) including few control variables. Therefore, this study employs the following model:

$$\mathrm{FP_{it}} = \alpha_{1+} \sum_{P=1}^{n=4} \beta_{\mathrm{P}} \mathrm{FP_{it-p}} + \beta_{\mathrm{X}} \mathrm{Controls_{it}} + \varepsilon_{it} \quad \ldots\ldots\ldots (10)$$

Where, $\mathrm{FP_{it}}$ represents firm performance measure by return on assets (ROA) and market to book ratio (MB ratio) and controls represent control variables, which include firm size, firm age, leverage, dividend to total assets, sale to asset, sale growth and cash flow to total assets. In addition, year and industry dummies are also part of the model as control variables.

Further to the arguments which have discussed in previous research finding, this study investigates the dynamic impact of corporate governance on current firm performance (Guest, 2009; Wintoki et al., 2012). To examine the association between past performance on current governance variables, this study estimates the following model:

$$\text{Current variables}_{\mathrm{it}} = \alpha_0 + \beta_2 \mathrm{FP_{t-1}} + \sum_{i=1}^{n} \beta_{\mathrm{i}} \mathrm{Controls_{t-1}} + \varepsilon_{it} \quad \ldots\ldots\ldots (11)$$

In this equation, the current variables include board size, female, NEDs, frequency of board meeting, audit committee size, director ownership, institutional ownership, associated ownership, ownership concentration, firm size, firm age, leverage, dividend to total assets, sale to asset, sale growth and cash flow to total assets. The corporate performance is measures by ROA and MB ratio. In addition, year and industry dummies are included in the model. Moreover, this study tests the strict exogeneity among the variables by estimation the following fixed effects model:

$$FP_{i,t} = \alpha + \beta_1 CG_{i,t} + \beta_X Controls_{i,t} + \Omega_1 CG_{i,t+1} + \Omega_X Controls_{i,t+1} + \mu_i + \varepsilon_{it} \quad \ldots\ldots\ldots (12)$$

Where, CG represents corporate governance variables and control represents control financial variables. In equation 9, the fixed effect specification also includes to control one type of endogeneity in fixed effects which may exist when time invariant firm characteristics may be correlated with explanatory variables. Therefore, if the future value of board and ownership structure variables are significant as per equation no 9, it may consider that existent endogeneity is not only the outcome of fixed effects but also due to dynamic relationship, such as future realisation of the explanatory variables associated with current performance. (Guest, 2009; Wintoki et al., 2012)

6.9 Application of System GMM

Next, in line with above discussion this study conducts an analysis regarding impact of corporate governance on firm performance through the application of dynamic model. We therefore applied GMM estimator where ROA and MB ratio are (proxy of firm performance) as follows:

$$FP_{i,t} = \alpha + k_1 FP_{it-1} + \beta CG_{it} + \gamma_X Controls_{it} + \mu_i + \varepsilon_{it} \quad \ldots\ldots\ldots (13)$$

Where FP represents firm performance, CG represents corporate governance variables and Controls represent control variables as explained in equation (7).

This study applies historical values of explanatory variables as instrument for the model estimations and present the results with two different GMM specification such as (GMMa and GMMb). The method uses the lagged levels from period t-2 or more of dependent and explanatory variables as instrument to control unobserved heterogeneity, dynamic endogeneity and simultaneity. In first model (GMMa), all explanatory variables consider as endogenous except firm age and year dummies and use their lags of two or more periods as instruments (Wintoki, 2012; Gibson et al,2013). The second model (GMMb) considers all variables as

exogenous except those which are strictly endogenous such as board structure attributes. Moreover, Wintoki *et al.* (2012) suggests that the explanatory and control variables lagged two or more periods are used as instruments in two step system GMM regression. Therefore, this study treats all explanatory variables as endogenous except firm age and year dummies and use their lags of two or more periods as instruments.

This study uses xtabond2 command in Stata v14.1 for two step system GMM (Roodman, 2009)[6] along with application of small sample adjustment which report t-statistics and Wald chi-square as opposed to Z-statistics and F-tests. The two-step command uses to get the finite- sample corrected two step covariance matrixes. The system GMM estimator is basically system of two simultaneous equations including one in levels and the other in first difference.

6.10 GMM modelling tests

In order to test the validity, adequacy and appropriateness of the given model and estimation method, it is important that instruments use in model are valid and exogenous as group. Therefore, Arellano-Bond, first order auto-correlation AR (1), second order autocorrelation AR (2) and Hansen test of over-identifying restrictions[7] examine the validity and strength of instrument. The key exogeneity assumption of this study is that the firm historical performance and characteristics are exogenous in relation to current shocks or innovation in performance. (Wintoki, 2012)

6.11 How many lags of performance are required for dynamic completeness?

Empirically, it is important for the consistent estimation of dynamic GMM Model, to assess that how many lags of performance are required to capture all information from the past. If the impact of past performance is not fully capture, there might be an omitted variable bias and estimation may be misspecified. Second, it is assumed that all older lags are exogenous in relation to the residuals of the present, which can be used as instrument. (Wintoki et al., 2012)

The main concern is to make sure that enough lags have included to control the dynamic aspects of empirical relationship. If the enough numbers of lags have taken, then historical value of firm performance beyond those lags are considered valid instrument, provided it is exogenous to current performance shocks.

6 See Roodman, (2009) for more details about GMM

7 When we use robust standard error (which auto correct panel specific Heteroskedasticity and autocorrelation) then p-value of Hansen test is considered instead of Sargan test.

At the first stage of empirical analysis, this study considers the number of lags which sufficient to capture the dynamic influence of past performance on current data. The previous studies of corporate governance have documented that two lags of dependent variable are sufficient to capture the dynamic impact of corporate governance, (see for example, Glen et al., 2001; Gschwandtner,2005). Few other studies such as (Adams and Ferreira, 2009; Dezso and Ross, 2012) have used one lags of dependent variable to assess the dynamic relationship.

Table 6.11 present results regarding lags of performance via estimation of static OLS model. This study estimates a regression of current performance on first lag of past performance along with the controlling of other firm-specific characteristics to see whether first lag is sufficient to ensure dynamic completeness. The results show that the first lag of ROA of MB Ratio is statistically significant.

6.12 Test of Strict exogeneity

This study conducts a test of strict exogeneity of explanatory and control variables as suggested by Wooldridge (2002) and Wintoki et al. (20]12). This test investigates the possibility whether current level of corporate governance has impact on future values of corporate governance by estimating the following fixed effect model.

$$FP_{i,t} = \alpha + \beta_1 CG_{i,t} + \beta_X Controls_{i,t} + \Omega_1 CG_{i,t+1} + \Omega_X Controls_{i,t+1} + \mu_i + \varepsilon_{it} \quad \ldots\ldots\ldots (12)$$

This study develops the null hypothesis of strict exogeneity ($\Omega = 0$) which means that current value of the corporate performance is not associates with future value of corporate governance and control variables.

Table 6.12 presents the result of equation 9 with various corporate governance variables and control variables using ROA and MB Ratio as measure of firm performance. The future values of financial variables are present in columns (2) and (4). The results indicate that future values of corporate governance variables are not significantly associate with firm performance.

In each column of Table 6.12 the coefficient estimates for the future values of explanatory variable are significantly different from zero. This insignificant association shows that characterises of explanatory variables cannot be consider as strictly exogenous and do not respond to ROA and MB Ratio. Therefore, future values of governance variables might not vary in response to current performance indicators which may allow current governance variable to be considered as predetermined, as opposed to endogenous. (Roodman, 2009; Kryzanowski and Mohebshahedin, 2016; Saeed et al, 2016). In conclusion, the results indicate that corporate governance variable and control variables are not strictly exogenous.

Table 6.12: Test of strict exogeneity

Dependent Variable	ROA 1	ROA 2	MB Ratio 3	MB Ratio 4
Board Size (t)	-0.0961	-0.254	0.361	0.245
	(0.118)	(0.1801)	(0.4693)	(0.5038)
Female (t)	-0.0297	-0.0232	0.234	0.282
	(0.0268)	(0.0348)	(1.068)	(0.973)
NED (t)	-0.2056	-0.1712	0.3009	0.14582
	(2.112)	(114.2)	(0.8415)	(0.31955)
Board Meet (t)	0.0122	0.00516	-0.629	-0.214
	(0.0154)	(0.0204)	(0.613)	(0.57)
Acom size (t)	0.0254	0.0377	-0.355	0.545
	(0.018)	(0.0231)	(0.719)	(0.645)
Director Own (t)	0.13	0.915	0.1171	0.2109
	(0.325)	(0.943)	(0.1294)	(0.2638)
Institution Own (t)	0.103	-0.231	0.1097	0.1112
	(0.168)	(0.392)	(0.6676)	(0.1096)
Ownership Con (t)	0.747**	0.196	-0.375	-0.2309*
	(0.29)	(0.617)	(0.1155)	(0.1255)
Associated Own (t)	1.215	-0.4607	0.135	-0.1871
	(2.901)	(0.4486)	(0.1156)	(0.1725)
Firm Size (t)	0.00869	-0.027	0.491	-0.1301
	(0.0249)	(0.0553)	(0.993)	(0.1548)
Firm Age (t)	0.137	0.0123	-0.969	0.0459
	(0.104)	(0.104)	(0.4151)	(0.0377)
Leverage (t)	0.252**	-0.103	-0.1070**	-0.2321
	(0.12)	(0.174)	(0.4765)	(0.4869)
Dividend to TA (t)	0.013	-0.0137	-0.7500***	-0.162
	(0.0451)	(0.0541)	(0.1795)	(0.1512)
Sale to Assets (t)	-0.124*	-0.096	0.963	-0.0371
	(0.0683)	(0.0851)	(0.272)	(0.2381)
Sale Growth (t)	0.110**	0.208***	0.2181	0.2689
	(0.0482)	(0.0614)	(0.1919)	(0.1718)
CF to TA (t)	0.0459*	-0.0462	0.86	0.522
	(0.0276)	(0.0311)	(0.1099)	(0.871)
Board Size (t+1)	…	0.317	…	-0.3096
	…	(1.952)	…	(0.5462)
Female (t+1)	…	0.00249	…	-0.274
	…	(0.0393)	…	(0.1101)
NED (t+1)	…	-0.122	…	-0.13278
	…	(0.109)	…	(0.30501)
Board Meet (t+1)	…	-0.00225	…	0.434
	…	(0.0208)	…	(0.582)
Acomsize (t+1)	…	0.00747	…	-0.201
	…	(0.0261)	…	(0.73)
Dir Own (t+1)	…	-0.472	…	0.1109
	…	(0.948)	…	(0.2652)
Insti Own (t+1)	…	0.22	…	-0.1254
	…	(0.363)	…	(0.1016)
Own Con (t+1)	…	-0.1114	…	-0.4162
	…	(0.689)	…	(0.3376)
Asso Own (t+1)	…	0.807	…	0.153
	…	(0.1207)	…	(0.1927)
Firm Size (t+1)	…	0.0208	…	0.1557*
	…	(0.0319)	…	(0.891)
Firm Age (t+1)	…	0.053	…	0.3735
	…	(0.107)	…	(0.3007)
Leverage (t+1)	…	-0.0954	…	-0.9545**
	…	(0.153)	…	(0.4283)
Dividend to TA (t+1)	…	-0.0156	…	0.816
	…	(0.0506)	…	(0.1416)
Sale to Assets(t+1)	…	-0.0639	…	-0.1678
	…	(0.0803)	…	(0.2247)
Sale Growth (t+1)	…	-0.0575	…	-0.228
	…	(0.0612)	…	(0.1712)
CF to TA (t+1)	…	-0.028	…	-0.549
	…	(0.0305)	…	(0.853)

$FP_{i,t} = \alpha + \beta_1 CG_{i,t} + \beta_X Controls_{i,t} + \Omega_1 CG_{i,t+1} + \Omega_X Controls_{i,t+1} + \mu_i + \varepsilon_{it}$….(12) This table present the results indicate whether board structure adjust to past performance based on equation 7. The results of firm performance (ROA) is present in column 1 and 2 and MB ratio in column 3 and 4 respectively. Year and industry dummies are included in all regressions. All t-statistics are based on robust, firm-clustered standard errors. The P-values are reported in parentheses, whereas, ***; **; * represent significance at the 1%, 5%, and 10% level, respectively.

6.13 Empirical analysis

Next to previous discussion about dynamic endogeneity, this section examines the results about the relationship between corporate governance and firm performance. This section further compares the estimations results of static model (Fixed effects) and dynamic model (GMM) and evaluate the impacts of dynamic association between corporate governance and firm performance.

6.14 Empirical results based on ROA (Full sample)

Table 6.14 present the results which indicate the association between corporate governance and firm financial performance (ROA) for full sample of the study. The results present as per the definitions report by system GMM estimator which indicates that dynamic endogeneity is a significant concern of the model. Moreover, Wintoki et al. (2012) suggests that the explanatory and control variables lagged two or more periods are used as instruments in two step system GMM regression[8]. Therefore, this study treats all explanatory variables as endogenous except firm age and year dummies and use their lags of two or more periods as instruments.

Interestingly, both System GMM estimators such as GMMa and GMMb have traced the existence of dynamic endogeneity across sample firms. However, GMMa deem to be more appropriate model which validates the value of J-statistics (health of instrument) and fix the problem of autocorrelation, simultaneity and over-identification restrictions. Second, the GMMa also validates the assumptions of previous studies such as, (Wintoki, et al., 2012; Gibson et al.,2013; Tuan Nguyen et al., 2014; Saeed et al., 2016) that all regressors except firm age and year dummies are endogenous. Therefore, this study discusses the results of GMMa which assumes that all regressors except firm age and year dummies are endogenous and compare it with the results of fixed effects[9]

In order to test the validity, adequacy and appropriateness of the given model and estimation method, it is important that instruments use in model are valid and exogenous as group. Therefore, Arellano-Bond, first order auto-correlation AR (1), second order autocorrelation AR (2) and Hansen test of over-identifying restrictions10 examine the validity and strength of instrument. Table 6.14 indicates that p-value of AR (2) is enough high (0.661) therefore, null hypothesis regarding instruments validity cannot be rejected as instruments are not correlated

8 This study uses System GMM as the basic condition of GMM application is that number of cross section (N) should be greater than number of time series (T). In this study, the number of cross section is 259 (N=259) while number of time series is 12 (t=12).
9 The study has conducted Hausman test which recommended that Fixed effects is better estimation technique for this data as compare to Random effect.

to the error term. Similarly, the p-value of Hansen test is also high (0.677) thus, the null hypothesis that instruments as a group are exogenous cannot be rejected. The p-value of AR (2) of GMMb model is 0.861 and the p-value of Hansen test is (0.822). The results of GMMb are more appropriate and support to economic theory as compare to results of GMMb model which shows weak instruments in various model. Therefore, the results of GMMb are not explained and discussion of this study evolved around the results of GMMa.

Board Size

Table 6.14 shows that the coefficient on board size is insignificant with ROA which indicate that firm performance is not affected by the size of board. The magnitude of The coefficient on board size is (0.00743) which is less than the previous studies such as Nadeem, A. Sheikh et al., (2013) who reported (0.1187) and greater than (Aymen Ammari et al.,2014) who reported (-1.67). This result is consistent with prior studies of (Hermalin and Weisbach, 1991; Ho and Williams, 2003; Mohd Ghazali, 2010; Zyad M. S, 2014). Similarly, Amir Shehzad, et al (2011) reviewed the data of 200 listed firm in Pakistan and found no significant relation between board size and firm performance. This result is not supporting the arguments of resource dependence theory which predicts a positive association between board size and firm performance (Dalton et al., 1999). This result is incongruent with agency theory which suggests a negative association between board size and firm performance (Jensen, 1993). Therefore, based on this result regarding board size, hypothesis H1A is rejected. Moreover, static fixed effect and dynamic fixed shows negative and significant relationship between board size and firm performance.

Female board members

The coefficient on presence of females is insignificant for ROA which indicates that woman in Pakistan are presumably not be making any significant contributions to corporate board decisions making. The magnitude of The coefficient on female board members is (0.0344) which is less than the previous study of Tuan Nguen et al., (2014) who reported (1.183) as coefficient of female board members. The reason of insignificant relationship is that the females in Pakistan are less tempted to serve as a board member especially after marriage due to domestic responsibilities and cultural environment in Pakistan. Therefore, based on this result regarding presence of female board members H2A is accepted. This result is consistent with prior studies of Zahra and Stanton (1988) and Rose (2007) who have found insignificant relation between presence of female and firm performance.

Vinnicombe and Johnson (2001) study reveals that females are herself reluctant to stay as board members. The study has given the example of president of Coca-Cola UK, Mrs Penny Hughes who left her board position to look after her young sons and Miss Brenda Barnes who served as CEO of Pepsi Ltd has leave the position of manager based on her domestic matters. Moreover, dynamic fixed effects show a negative relationship between female board members and firm performance.

Non-executive directors

The coefficient on presence of non-executive directors is insignificant for ROA which indicates that firm performance is not influence by presence of non-executive directors. The magnitude of The coefficient on NED is (-0.438) which is less than the previous study of Aymen Ammari et al., (2014) who reported (0.020) as coefficient of non-executive directors. This result is incongruent with agency theory which predicts that higher proportion of non-executive directors leads to greater monitoring by the board (Fama and Jensen, 1983). The possible reason is that non-executive directors are partly engaged with the firm activities and have little time to collect first-hand information about the firms' day to day management. This result is consistent with several prior studies (see for example, Hermalin and Weisbach, 1991; Laing and Weir, 1999; Reddy et al. 2010). Therefore, based on this result regarding presence of non-executive directors, hypothesis H3A is rejected.

Moreover, it's difficult to find experienced and professional non-executive directors having full expertise to monitor firm activities. (Treadwell, 2006). In addition, mostly non-executive directors are recruited based on personal instead of formal interview. Therefore, there is possibility that non-executive directors have lack of professional qualification and industry knowledge which may become the reason of insignificant association between non-executive directors and firm performance. (Higgs, 2003)

Frequency of board meeting

The coefficient on frequency of board meeting is negatively associated with ROA at 1% significant level, which indicate that frequency of board meeting is not necessarily beneficial. Moreover, large numbers of meeting can result in high cost of management in the form of managerial time, travel cost, director meeting fees and refreshment expenses. The magnitude of The coefficient on frequency of board meeting is (-0.409) which is less than the previous study of (Collins Ntim et al., 2009) who reported (-0.003) as coefficient of frequency of board

meeting. This result is consistent with previous studies like, (Carcello et al. 2002; Karamanou and Vafeas, 2005; Mangena and Tauringana, 2006; Collins Ntim et al., 2009). These studies reported a positive relationship between frequency of board meeting and firm performance. Therefore, based on this result regarding frequency of board meeting, hypothesis H4A is rejected.

Audit committee size

The coefficient on audit committee is insignificant for ROA which indicates that firm performance is not affected by audit committee. The GMM estimator show that the magnitude of The coefficient on Audit committee size is (-0.066)) which is less than the coefficient size in case of Static fixed effects. Therefore, based on this result regarding size of audit committee, hypothesis H5A is rejected. This result is consistent with Beasley (1996) and Baxter (2006) who document that there is no association between audit committee and firm performance. Similarly, Keong et al., (2002) study reveals that audit, remuneration and nomination committees have no worth and deem like a window dressing unless audit committee members are independent and have full access to monitor firm's activities. Notably, fixed effects and GMM both have found an insignificant coefficient of audit committee size for ROA.

Director ownership

The coefficient on director's ownership is insignificant for ROA which indicates that director ownership is not necessarily beneficial and has no impact on firm performance. The magnitude of The coefficient on director ownership is (0.496) which is greater than the previous study of Nadeem, A. Sheikh et al., (2013) who reported (0.0462) as coefficient of director ownership. This may be due to the reason that when the managerial ownership increase, the managers become the directors and shareholders of the firm. This situation is not positively influence on firm performance as agency theory argues that the manger and shareholders' interests are not align. Therefore, based on this result regarding director's ownership, hypothesis H6A is rejected. This result is consistent with previous study of Florackis et al. (2009) who examines the UK listed firms for the period of 2000-2004 and find an insignificant relationship between director's ownership and firm performance.

Institutional ownership

The coefficient on institutional ownership is insignificant and negative for ROA which indicates that firm performance is not affected by institutional ownership. The GMM estimator

show that the magnitude of The coefficient on Institutional ownership is (0.662) which is greater than the coefficient size in case of Static fixed effects. Therefore, based on this result regarding institutional ownership, hypothesis H7A is rejected. Notably, all estimation models of this study such as, static fixed effects, dynamic fixed effects, GMMa and GMMb have found a statistically insignificant coefficient of institutional ownership for ROA.

Associated ownership

The coefficient on associated ownership is insignificant for ROA which indicates that firm performance is not affected by associated ownership. The static fixed effects and dynamic fixed effects shows a significant and negative association between associated ownership and ROA. Therefore, based on this result regarding associated ownership, hypothesis H8A is rejected. The Static fixed effects show that the magnitude of The coefficient on Associated ownership is (-0.717) which is less than the coefficient size in case of GMM estimator. Interestingly, the results of dynamic fixed model indicate a significant negative relationship between associated ownership and firm performance which indicates that group of companies have negative impact on firm performance. This is a unique variable which has examined and introduced by this study as a part of corporate governance mechanism to determine its impact on firm performance.[11]

Ownership concentration

The coefficient on ownership concentration is insignificant and negative for ROA which indicates that firm performance is not affected by ownership concentration. The magnitude of The coefficient on ownership concentration is (0.705) which is greater than the previous study of Tuan Nguyen et al., (2014) who reported (0.002) as coefficient of ownership concentration. This result is incongruent with agency theory which predicts that ownership concentration is one of the important mechanisms for monitoring managerial behaviour that helps to mitigate agency problems. Therefore, based on this result regarding ownership concentration, hypothesis H9A is accepted. The reason may be that the countries where regulations and legal protection is weak, ownership concentration considered one of major agency problem which is not favourable for minority shareholders. Moreover, the controlling shareholders influence the way to company run and obtain private benefits at the expense of minority shareholders interest. (Laporta et al, 2002). This result is consistent with various previous studies (see for example, El Mehdi, 2007; Mangena and Chamisa, 2008; Amir Shehzad et al., 2011).

11 The data related to Associated ownership is available in annual reports of listed firms of Pakistan.

Firm size

The coefficient on firm size is insignificant for ROA which indicates that firm performance is not affected by size as the sample firms have not effective control and monitoring mechanism due to large volume. The magnitude of The coefficient on Firm size is (0.0696) which is greater than the previous study of Saeed et al., (2016) who reported (0.009) as coefficient of firm size. Therefore, based on this result regarding firm size, hypothesis H10A is rejected. This result is consistent with prior study of (Tuan Nguyen et al., 2014) who reports an insignificant association between firm size and corporate performance. The results of fixed effect are consistent with the results of dynamic GMM which indicates a positive and insignificant association between firm size and ROA.

Firm age

The coefficient on firm age is insignificant for ROA which indicate that firms age does not necessarily be have any impact on firm performance. The magnitude of The coefficient on firm age is (-0.0025) which is less than the previous study of (Wintokie et al., 2012) who reported (-0.0295) as coefficient of firm age. This result is constant with (Tuan Nguyen et al., 2014) who document that there is association between firm age and corporate performance. Therefore, based on this result regarding firm age, hypothesis H11A is rejected. Moreover, all other estimators also show an insignificant impact of firm age on firm performance.

Leverage

The coefficient on firm leverage is negative and statistically significant at 1% level for ROA which indicates that large amount of debt decreases firm performance. The magnitude of The coefficient on leverage is (-1.448) which is less than the previous study of Gibson Munisi et al., (2013) who reported (0.003) as coefficient of Leverage. Interestingly static fixed effect and dynamic fixed effect also show a significant and negative association between leverage and firm performance. The possible reason is that the amount of debt increases due to high cost of operation which is resulted in high rate of interest payment (Dechow et al., 1996). Therefore, based on this result regarding firm leverage, hypothesis H12A is accepted. The negative association between leverage and performance indicates that highly profitable firm tend to use less debt than equity as the equity give more financial flexibility to managers. (Shabbir and Padget, 2005) Moreover, larger firms have capacity to acquired economies of large scale which turns positive impact on firm performance. This result is consistent with several prior studies (see for example, Dechow et al., 1996; Collins Ntim et al., 2009: Qaiser.R, 2011; Zyad M. S,

2014). The results of static fixed effects and dynamic fixed effect also show a negative and significant association with leverage.

Dividend to total assets

The coefficient on dividend to total assets is insignificant for ROA which indicates that dividend to total assets do not necessarily to have any impact on firm performance. The Static fixed effects show that that magnitude of The coefficient on dividend to total assets is (0.00687) which is less than the coefficient in case of GMM estimator. The results of fixed effects are also not showing any relationship between dividend to total assets and firm performance. The results of GMM estimation find an insignificant relationship after controlling of unobserved heterogeneity, simultaneity, dynamic endogeneity and autocorrelation.

Sale to assets

The coefficient on sale to assets is insignificant for ROA which indicates that sale to assets do not necessarily to have any impact on firm performance. The Static fixed effects show that the magnitude of The coefficient on sale to assets is (-0.0966) which is less than the coefficient in case of GMM estimator. This leads to the hypothesis that firms have failed to optimal use of their resource which improve firm efficiency and resulted in positive impact on firm performance. The results of fixed effects show 5% level of significance with negative coefficient but after controlling of dynamic effects, GMM results indicate a significant negative relationship between leverage and ROA.

Sale Growth

The coefficient on sale growth is insignificant for ROA which indicates that firms with high or low sale growth do not necessarily to have better corporate governance performance. The magnitude of The coefficient on sale growth is (0.0113) which is less than the previous study of Gibson Munisi et al., (2013) who reported (0.021) as coefficient of sale growth. This result does not support the theoretical hypothesis that on average firms with high amount of sales are more likely to have a positive impact on firm performance. This may be due to the reason that firms even with high growth of sale have not sufficient funds to run the operation efficiently. This result is incongruent with prior studies results see for example, (Shabbir and Padget, 2005; Collins Ntim et al., 2009) who have found a positive association between sale growth and firm performance.

Cash flow to total assets

The coefficient on cash flow to total assets is insignificant for ROA which indicates that cash flow to total assets do not necessarily to have any impact on firm performance. The Static fixed effects show that the magnitude of The coefficient on sale to assets is (-0.0592) which is less than the coefficient size in case of GMM estimator. This result supports the argument that potential investors are not only consider the cash flow to total assets ratio to estimate the tendency of firms earning. Moreover, the static fixed effects and dynamic fixed effects model of this study shows a negative and significant association between cash flow to total assets and firm performance.

6.15 Empirical results based on MB Ratio (Full Sample)

Table 6.15 present the results which indicate the association between corporate governance and firm performance (MB Ratio) for full sample of the study. The results present as per the definitions report by system GMM estimator which indicates that dynamic endogeneity is a significant concern of the model. Moreover, Wintoki et al. (2012) suggests that the explanatory and control variables lagged two or more periods are used as instruments in two step system GMM regression. Therefore, this study treats all explanatory variables as endogenous except firm age and year dummies and use their lags of two or more periods as instruments.

The null hypothesis of Arellano-Bond AR (2) test suggests that instruments are valid which means that it's not correlated with error term. The null hypothesis of Hansen test suggests that instruments are exogenous. Table 6.15 indicates that p-value of AR (2) is enough high (0.458) therefore, null hypothesis regarding instrument validity cannot rejected. Similarly, the p-value of Hansen test is also high (0.535) thus, the null hypothesis that instruments as a group are exogenous cannot be rejected.

Board size

Table 6.15 shows that coefficient of board size is insignificant for MB Ratio which indicates that firm performance is not affected by the size of board. The magnitude of The coefficient on board size is (-0.0643) which is less than the previous study of Gibson Munisi et al. (2013) who reported (0.020) as coefficient of board size. This result is not consistent with agency and resource dependence theory as agency theory predicts a negative association between board size and firm performance and resource dependence theory suggests a positive association. (See for example, Dalton et al., 1999; Jensen, 1993). Therefore, based on this result regarding

board size, hypothesis H1B is rejected. This result is consistent with prior studies (see for example, Hermalin and Weisbach, 1991; Ho and Williams, 2003; Mohd Ghazali, 2010; Zyad M. S, 2014). Similarly, Amir Shehzad el al., (2011) reviews the data of 200 listed firm in Pakistan and find no significant relation between board size and firm performance.

Female board members

The coefficient on presence of females is insignificant with MB Ratio which indicate that woman presumably not be making any significant contributions to corporate board decisions making, but even than they will paid their remuneration. The magnitude of The coefficient on female board member is (-0.0624) which is less than the previous study of Tuan Nguyen et al., (2014) who reported (0.028) as coefficient of female board members. Therefore, based on this result regarding presence of non-executive directors, hypothesis H2A is rejected. This result is consistent with prior studies of Zahra and Stanton (1988) and Rose (2007) who found insignificant relation between presence of female and firm performance.

Vinnicombe and Johnson, (2001) study revealed that females are herself reluctant to stay as board members. The study has given example of president of Coca-Cola UK, Mrs Penny Hughes who left her board position to look after her young sons and Miss Brenda Barnes who served as CEO of Pepsi Ltd, had leave the position of manager based on her domestic matters. Interestingly, static fixed effect and dynamic fixed effect model of this study shows an insignificant negative impact of female board members on MB ratio.

Non-executive directors

The coefficient on presence of non-executive directors is insignificant for MB Ratio which indicates that there is possibility that non-executive directors are not fully independent and have lack of professional expertise and business information. The magnitude of The coefficient on non-executive directors is (5.811) which is greater than the previous study of Aymen Ammari et al., (2014) who reported (-2.4) as coefficient of non-executive directors. This result is incongruent with agency theory which predicts that higher proportion of non-executive directors are leading to greater monitoring by the board (Fama and Jensen, 1983). Moreover, Stewardship theory argues that the non-executive directors have lack of business knowledge and unable to understand the complexities of the firm (Weir and Laing, 2000). This insignificant association between NEDs and MB Ratio is incongruent with the arguments of agency theory which stat that the experience, knowledge, reputation and skills of NEDs help to improve the firm performance.

The other possible reason of the negative association is that non-executive directors have lack of professional qualification and industry knowledge which may become the reason of insignificant association between non-executive directors and firm performance. (Higgs, 2003) This result is consistent with several prior studies such as, (Hermalin and Weisbach, 1991; Laing and Weir, 1999; and Reddy et al. 2010).

Frequency of board meeting

The coefficient on frequency of board meeting is positively associated with MB Ratio at 5% significant level which indicate that frequency of board meeting help to improve the overall performance of the firm through continuous monitoring and help to resolve corporate issue more quickly. The Static fixed effects show that The coefficient on frequency of board meeting is (0.0404) which is less than the coefficient size in case of GMM estimator. This result is consistent with previous studies like, (Carcello et al. 2002; Karamanou and Vafeas, 2005; Mangena and Tauringana, 2006; Collins Ntim et al., 2009). These studies reported a positive relationship between frequency of board meeting and firm performance.

This result is also supported by the study of Mangena and Tauringana (2006) who review a sample of 157 Zimbabwean listed firms for the period 2001 to 2003 and found statistically significant and positive association between the frequency of board meetings and ROA. The study further document that during the period of crisis the monitoring become more difficult and frequency of meeting help the board to resolve the problem in such situation.

Audit committee size

The coefficient on frequency of board meeting is insignificant with MB Ratio, which indicate that frequent board meetings is not necessarily beneficial. The Static fixed effects show that The coefficient on Audit committee size is (0.131) which is greater than the coefficient size in case of GMM estimator. Moreover, large numbers of meeting can result in high cost of management in the form of managerial time, travel cost, director meeting fees and refreshment expenses. This result is consistent with previous studies of El Mehdi (2007) and Collins Ntim et al., (2009) who document the insignificant relation between frequency of board meeting and firm performance. Another argument in favour of above insignificant relationships is that, more numbers of meeting can result in high cost of management in the form of managerial time, travel cost, director meeting fees and refreshment expenses. (Collins Ntim et al., 2009). El Mehdi (2007) study a sample of 24 Tunisian firms for the period of (2000-2005) and reported an insignificant association between frequency of board meeting and firm performance. The

study further suggests that financial performance of a firm depend upon day to day effective management rather frequency of board meeting. Therefore, based on this result regarding size of audit committee hypothesis H5 is rejected. In contrast, the static fixed effect and dynamic fixed effects shows a significant and positive impact on firm performance.

Director ownership

The coefficient on director insider ownership is insignificant with MB Ratio, indicating that director inside ownership are not necessarily beneficial and as result have no impact on firm performance. This may be due the fact that when the managerial ownership increase, the managers become the directors and shareholders of the firm, then it is not positively influence on firm performance as the manger and shareholders' interests are not align. The magnitude of The coefficient on director ownership is (-3.252) which is less than the previous study of Nadeem, A. Sheikh et al., (2013) who reported (0.0462) as coefficient of institutional ownership. This result is consistent with previous studies of Florackis et al. (2009) who analyses UK listed firms for the period of 2000-2004 and did not found any relationship between director ownership and firm performance.

Institutional ownership

The coefficient on institutional ownership is insignificant for MB ratio which indicates that firm performance is not affected by institutional ownership. The Static fixed effects show that The coefficient on institutional ownership is (0.311) which is greater than the coefficient size in case of GMM estimator. Therefore, based on this result regarding institutional ownership, hypothesis H7B is rejected.

Associated ownership

The coefficient on associated ownership is positive and statistically significant at 5% level for ROA which indicate that associated ownership has positive influence on firm performance as group of companies are more diversified, more financially stable and have positive impact on their performance. Moreover, group of companies have capacity to acquire economies of large scale which turn positive impact on firm performance. This is unique variable which is first time evaluated in this study as a part of corporate governance mechanism to determine its impact on firm performance. The Static fixed effects show that The coefficient on associated ownership is (-0.907) which is less than the coefficient size in case of GMM estimator. Therefore, based on this result regarding associated ownership, hypothesis H8B is accepted.

Ownership concentration

The coefficient on ownership concentration is insignificant for MB Ratio which indicates that firm performance is not affected by ownership concentration. The magnitude of The coefficient on ownership concentration is (-0.872) which is less than the previous study of Tuan Nguyen et al., (2014) who reported (0.007) as coefficient of ownership concentration. This result is incongruent with agency theory which predicts that ownership concentration is one of the important mechanisms for monitoring managerial behaviour which helps to mitigate agency problems. The reason may be that the countries where regulations and legal protection is weak, ownership concentration considered one of major agency problem which is not favourable for minority. Moreover, the controlling shareholders influence the way to company run and obtain private benefits at the expense of minority shareholders interest. (Laporta et al, 2002). Therefore, based on this result regarding ownership concentration, hypothesis H8B is rejected. This result is consistent with several prior studies (see for example, Vefeas and Theodorou, 1998; El Mehdi, 2007; Mangena and Chamisa, 2008; Amir Shehzad et al., 2011).

Firm size

The coefficient on firm size is insignificant with MB Ratio which indicates that firm performance is not affected by size. The magnitude of The coefficient on firm size is (-0.152) which is less than the previous study of Aymen Ammari et al., (2014) who reported (7.032) as coefficient of firm size. The possible reason is that the sample firms have not effective control and monitoring mechanism due to large volume which may impact insignificantly on their performance. Therefore, based on this result regarding firm size, hypothesis H10 is rejected. This result is consistent with prior study of Tuan Nguyen et al., (2014) who reports insignificant association between firm size and corporate performance. The static and dynamic fixed effects estimators indicate a negative and significant association between firm size and MB.

Firm age

The coefficient on firm age is insignificant for MB Ratio which indicates that firm's age does not necessarily to have any impact on firm performance. The magnitude of The coefficient on firm age is (0.0438) which is less than the previous study of Tuan et al., (2014) who reported (0.208) as coefficient of director ownership. Therefore, based on this result regarding firm age, hypothesis H11B is rejected. This result is rejecting the theoretical hypothesis that older firms operating in industries from many years and they have well established system and procedures.

Second, this result is also incongruent with concept that firm with less age are generally low credit worth and risk of instability.

Leverage

The coefficient on leverage is insignificant for MB Ratio which indicates that firm performance is not affected by leverage. The magnitude of The coefficient on leverage is (0.0922) which is less than the previous study of Aymen Ammari et al., (2014) who reported (0.689) as coefficient of leverage. Therefore, based on this result regarding firm leverage, hypothesis H12B is rejected. This result is consistent with study results of Tuan Nguyen et al., (2014) who documents that leverage is insignificant for firm performance. The reason may that the firm major operational cost is finance by equity. Moreover, the results static fixed effects show negative association at 10% level of significance.

Dividend to total asset

The coefficient on dividend to total assets is insignificant for MB Ratio which indicates that dividend to total assets do not necessarily to have any impact on firm performance. The Static fixed effects show that The coefficient on dividend to total asset is (-0.0390) which is less than the coefficient size in case of GMM estimator. This result is incongruent with theoretical hypothesis that payment of dividend is considered by market as better utilisation of cash flow and resulted in positive impact on firm performance.

Sale to assets

The coefficient on sale to assets is insignificant for MB ratio which indicates that sale to assets do not necessarily to have any impact on firm performance. The Static fixed effects show that The coefficient on sale to assets is (-0.177 which is less than the coefficient size in case of GMM estimator. This leads to the hypothesis that firms are unable to optimal use of its resources which can help to improve firm efficiency and resulted in positive impact on firm performance.

Sale Growth

The coefficient on sale growth is insignificant for MB ratio which indicate that firms with high sale growth do not necessarily be have any impact on firm performance. The magnitude of the coefficient on sale growth is (-0.0183) which is less than the previous study of Saeed et al., (2016) who reported (0.019) as coefficient of sale growth. This result is inconsistent with the

theoretical concept that on average firms with high amount of sales are more likely to have a positive impact on firm performance.

Cash flow to total assets

The coefficient on sale to assets is insignificant MB ratio which indicate that sale to assets do not necessarily be have any impact on firm performance. The potential investors consider the cash flow to total assets ratio to estimate the quality of firms earning. The cash flow to total asset ratio is generally calculate by the management to estimate cash availability for future operations. The Static fixed effects show that The coefficient on sale to assets is (0.0561) which is less than the coefficient size in case of GMM estimator.

6.17 Summary of Results (Full sample)

This chapter discusses the findings regarding the impact of corporate governance on firm performance by ROA and MB ratio for full sample. This study finds an issue of endogeneity and heteroscedasticity in data which leads to the application of system GMM. Therefore, system GMM is the main estimation technique of this study which results have compared with static fixed effects model to analyse that how dynamic endogeneity influence the corporate governance and firm performance relationship. Interestingly, both GMM estimators such as, GMMa and GMMb have traced the existence of dynamic endogeneity across sample firms.

Overall, this study finds that corporate governance structure does matter in Pakistan. There are three corporate governance variables such as, board meeting, associated ownership and leverage statistically significant effect on firm performance for ROA and MB ratio as per the results of system GMM estimator. Moreover, the dynamic fixed effects models seven variable which have significant impact on firm performance such as board size, female board members, audit committee size, associated ownership, firm size, leverage and cash flow to total assets. These finding are consistent with the arguments of previous studies such as (Schultz et al., 2010; Pham et al., 2011; Wintokit al., 2012) who document that association between corporate governance and firm performance should be examine in dynamic framework. However, the findings of this study are not completely in agreement with the arguments of these studies as they document that corporate governance mechanisms do not matter after controlling the potential source of dynamic endogeneity.

On the contrary, the findings of this study document that corporate governance does matter and have significant impact on firm performance after controlling of dynamic endogeneity, un observed heterogeneity, simultaneity and autocorrelation. The finding of this study consistent with a few previous studies (see for example, Nirosha Hewa, 2012; Gibson et al, 2013 Abdullah Mohammed, 2014; Tuan Nguyen et al., 2014; Zaimah Abdullah, 2015). These studies results reveal a significant association between corporate governance variables and firm financial performance even after controlling of dynamic endogeneity auto-correlation and simultaneity. These finding also support the arguments of Yabei and Izumida (2008) who has argued that corporate governance plays a vital role in disciplining management and determining firm performance. These results support the arguments that firms should be encouraged to perform better corporate governance practices.

Chapter 7

Results and discussion (Local Firms)

7.1 Introduction

This chapter aims to presents the empirical results analysis of the data about the relationship between corporate governance and firm performance in Pakistani local firms. This chapter is organised as follows. Section 7.2 present the descriptive statistic of the sample data. Section 7.3 and 7.4 present the pair-wise correlation of variables and diagnostic test of Panel data respectively. This is followed by financial performance analysis and discussion (section 7.7). Finally, section 7.12 checked the robustness of results which is followed by summary of the chapter in section 6.13.

7.2 Descriptive statistics (Local Firms)

Table 7.2 provides a summary of descriptive statistics of dependent, independent and control variables of this study. The table presents the number of observations, mean, median, standard deviation, minimum and maximum value of each variable. There are two categories of independent variables which are board structure and ownership structure. The sample consist of 196 non-financial local firms of Pakistan.

The average mean of ROA is 0.1291, whereas maximum value is 0.984, median is 0.119 and minimum is -.98. The positive value of mean indicates that the majority firms have financial worth over the sampling period. Though the mean average is small, but this positive value depicts that the sample firms have created shareholders value. This positive mean value also evidence of an effective utilisation of firms' assets to generate an operating surplus. The mean of MB Ratio is 1.8799 that is greater than one which depicts that on average firms have created value for the shareholders. The maximum MB Ratio is 9.67, median is 2.5 and minimum value is 0.10. The negative sign of minimum value of MB Ratio indicates that various sample firms destroyed shareholders value over the sampling period.

The minimum numbers of board size are 6, median is 7 and maximum is 15. The mean of board size is 7. In Pakistan, majority of firms prefer 7 members in board of directors. This board size is like US average board size, as the study results of Switzer and Tang, (2008) document that in US, the range of board size is from 4 to 15 and average board consist of 7 to 8 members.

The minimum number of female members in board is 0, median is 0 and maximum is 5. The mean of female members is 0.94 % which is significantly low as compared to European average female board members which is 10% (Boards in Turbulent times, corporate governance report, 2009). The females in Pakistan are less tempted to serve as a board member especially after marriage due to domestic responsibilities and cultural environment in Pakistan. In general, the females in Pakistan not prefer to continue their jobs after marriage because of strong family system.

The minimum number of non-executive directors in board is 0, median is 0.25 and maximum is 8. The mean of non-executive directors is 0.2613 which indicates a very small contribution of non-executive directors in board of directors. The family dominating firms are reluctant to appoint non-executive directors in order to dominate in board decision making. The minimum number of board meeting per year is 2, median is 4 and maximum is 9. The mean of frequency of board meeting is 4.7250 which indicates that Pakistani firms have awareness that frequency of board meeting helps to improve the overall performance of the firm through effective communication and monitoring.

The minimum size of audit committee is 0, median is 3 and maximum is 6. The mean of audit committee is 2.84 which indicates that Pakistani firms have awareness that the existence of audit committee increases internal monitoring, decrease internal fraud and improve corporate governance compliances. The minimum value of director's ownership is 0, median is 0.34 and maximum is 0.99. The mean of director's ownership is 0.3439. This indicates that due to family ownership factor in Pakistan, a reasonable number of selected sample firms have directors' ownership. This situation also supports the argument that presence of director's ownership has positive influence on firm performance as it helps to align the interest of managers and shareholders.

The minimum value of institutional ownership is 0, median is 0.266 and maximum is 0.9876. The mean of institutional ownership is 0.3315. The maximum value of 0.9876 indicates that in Pakistan institutional ownership have strong existence. This also support the argument that Pakistan is emerging market which have great potentials for prospective investors as outside shareholder feel more protection in case of institutional ownership. The minimum value of associated ownership is 0, median is 0.31 and maximum is 0.9634. The mean of associated ownership is 0.3218. These are the group of companies which acquire the shares of other firms

which make the firm's board more diversified. Moreover, these group of companies have capacity to acquired economies of large scale which turn positive impact on firm performance.

The minimum value of ownership concentration is 0, median is 0.565 and maximum value is 0.986. The mean of ownership concentration is 0.5471. Laporta et al., (2002) study reports that the countries where regulations and legal protection is weak, ownership concentration considered one of major agency problem which is not favourable for minority shareholders.

The minimum of firm size is 11.59, median is 18.83 and maximum is 24.67. The mean of firm size is 18.86. This indicates that selected sample consist of small, medium and large size firms. There is varied opinion about impact of corporate governance on large and small firms. The minimum age of the firm is 17, median is 18.83 and maximum is 35. The mean of firm age is 23.85. This indicates that selected sample consist of both new and old age firms. The minimum value of leverage is 0, median is 0.168 and maximum is .0983. The mean of leverage is 0.2139 which indicates that firms in selected sample are highly leveraged. The minimum value of dividend to asset is 0, median is 0 and maximum is 2.9466. The mean of dividend to asset is 0.5447. This indicates that earning of Pakistani firms are not in good support of dividend payment. The minimum value of sale to assets is 0.0014, median is 0.194 and maximum is 1.1120. The mean of sale to total asset is 0.3059. This indicates the firm's efficiency of generating sale for each value of assets is vary among sample firms.

The minimum value of sale growth is -0.1373, median is 0.148 and maximum is 0.99. The mean of sale growth is 0.1695. This sale growth rate is very low and generally, the firms with low growth of sale have not sufficient funds to run the operation efficiently. The minimum value of cash flow to total asset is -2.494, median is 0.166 and maximum is 4.2499. The mean of cash flow to total asset is 0.2433. This indicates that firm efficiency of collecting cash from sales and debtors which is not seems very efficient in this sample.

7.3 Correlation Matrix

The results of Correlation Matrix present in table 7.3 which indicates that explanatory variables are both positively and negatively correlated with dependent variables such as, ROA and MB Ratio. Second, most of the cross correlation of explanatory variables are small, thus at first stage it does not show any problem of multicollinearity among the explanatory variables. For example, the highest correlation is between associated ownership and director's ownership which 0.55 which indicates that Pakistani firms have both type ownership such as associated

and director's ownership at the same time. The second highest correlation is between associated ownership and institutional ownership which is 0.46. The other high correlations are between audit committee size and board size (0.23), female and associated ownership (0.22), associated ownership and board size (0.16), NED and board size (0.14), institutional ownership and board size (0.14) etc. None of the independent variables are above 0.53 which indicates that the likelihood of multicollinearity in OLS regression is low. This study also run a formal test of multicollinearity such as VIF (Verification inflation factor) test to validate the results about multicollinearity.

Table 7.3 Correlation Matrix

	ROA	MBRatio	BSize	Female	NED	B Meet	Acomsize
ROA	1						
MB Ratio	0.0740	1					
Board Size	0.0489	0.0542	1				
Female	0.0054	0.0143	-0.0775	1			
NED	0.0680	0.0272	0.1398	-0.0640	1		
Board Meet	-0.0401	-0.0433	-0.0171	-0.0316	0.0208	1	
Acom Size	0.0223	-0.067	0.2233	-0.1766	-0.0916	-0.0421	1
Dir Own	0.0008	-0.0129	-0.1193	0.1600	0.0783	-0.0379	-0.1023
Institutional Own	0.0580	0.0098	0.1354	-0.2064	-0.0833	0.0352	0.1237
Associated own	0.0031	-0.0039	0.1597	-0.2131	-0.1081	0.0561	0.1546
Own Con	-0.0462	-0.0526	-0.0150	-0.0928	-0.0395	-0.0261	-0.0893
Firm Size	0.1608	-0.0307	0.2031	-0.0260	0.1142	-0.0473	0.1178
Firm Age	0.0274	-0.0508	0.0216	0.0084	0.0537	-0.0033	0.0077
Leverage	-0.1640	-0.0192	-0.0578	0.0344	-0.0683	-0.0167	-0.0926
Dividend to TA	0.1465	0.0254	0.0975	-0.0681	0.0466	-0.0377	0.1130
SaletoAsset	-0.0612	-0.0367	-0.0235	-0.0029	-0.0173	-0.0116	-0.0133
Sale Growth	0.0221	-0.0152	0.0136	-0.0031	-0.0025	-0.0092	0.0253
CF to TA	-0.0655	0.0080	0.0168	-0.0304	-0.0623	0.0144	-0.0205

	Dir Own	Ins Own	Ass own	OwnCon	FSize	FAge	Leverage
Dir Own	1						
Institutional Own	-0.4662	1					
Associated own	-0.5425	0.4604	1				
Own Con	0.1419	0.1012	0.0928	1			
Firm Size	-0.0874	0.1954	0.1236	-0.0487	1		
Firm Age	0.0102	0.0632	0.0891	0.0173	0.018	1	
Leverage	0.0449	-0.0766	-0.0398	0.0313	0.0146	-0.0313	1
Dividend to TA	-0.0707	0.1341	0.1111	0.0121	0.1581	0.0213	-0.1705
SaletoAsset	-0.0371	0.0184	-0.0389	-0.055	0.0788	-0.0469	0.0826
Sale Growth	0.0255	0.0291	-0.0071	0.0155	-0.0199	0.0068	-0.0232
CF to TA	-0.0162	0.0097	0.0118	-0.0383	0.043	-0.0194	0.0115

	DivitoTA	SaletoAss	Sale G	CFtoTA
Dividend to TA	1			
SaletoAsset	-0.0234	1		
Sale Growth	0.0634	-0.0279	1	
CF to TA	0.2568	0.0664	-0.0278	1

7.4 Panel data diagnostic tests

According to Carl Friedrich and Andrey, a linear regression about which the errors expectation is zero and uncorrelated with equal variance is consider as the (BLUE) best linear unbiased estimator of the coefficient. This study conducts a few diagnostic tests to investigate whether the underlying statistical assumptions have not violated which validate the status of BLUE. These diagnostic tests have discussed in chapter 5, section 5.10. Therefore, this section examines the VIF (Verification inflation factor) test, heteroscedasticity, autocorrelation and Hausman test. These test results are recommending whether the underlying assumptions of OLS (ordinary least square regression) have followed or violated. The results of these tests help to determine the best fit model for this study. Therefore, first diagnostic test of this study is VIF test which examine the issue of multicollinear.

7.4.1 Test of Endogeneity

Endogeneity is a term used to explain the existence of endogenous explanatory variable in multiple regression model which is correlated with the error term, due to measurement error, omitted variable or simultaneity. A detailed discussion about endogeneity has explained in chapter 5, section 5.11. Most of the previous studies of corporate governance have ignored the effects of endogeneity. Generally, the effects of endogeneity are that the regression model makes The coefficient on explanatory variable unreliable and biased. The ordinary least square (OLS) and fixed effect estimation can have only be obtained efficient results when the independent variables are exogenous. Therefore, it is important to test endogeneity for efficient, reliable and unbiased estimation of the model. (Wooldridge, 2003)

This study conducts a Durbin–Wu–Hausman (DWH) test to check whether endogeneity has existed in corporate governance and firm performance relationship. The DWH test examines the endogenous association between corporate governance variables and proxies of financial performance (ROA, MB Ratio). The result of DWH test shows that null hypothesis (Ho: regressors are exogeneous), cannot accepted as [Chi-sq (8) =2 4.21; p=0.003]. Table 7.3.4 presents the result of DWH test which indicates that variables (denoted by*) have significant endogeneity problems. The existence of endogeneity makes the estimation results biased which led to application of dynamic GMM estimation.

Table 7.4.1: The DWH test for endogeneity of regressors
(Local Firms Sample)

Ho: Regressors are exogeneous

Variables	ROA	MB Ratio
Board size	7.23***	6.32***
Female	0.542	1.35*
NED	3.18***	3.1**
Board Meeting	3.91***	4.21***
Audit committee size	0.15	3.54**
Director Ownership	2.13	2.87
Institutional Ownership	2.95	2.67
Associated Ownership	0.76	0.31
Ownership Concentration	0.654	0.532

7.5 GMM modelling tests

In order to test the validity, adequacy and appropriateness of the given model and estimation method, it is important that instruments use in model are valid and exogenous as group. Therefore, Arellano-Bond, first order auto-correlation AR (1), second order autocorrelation AR (2) and Hansen test of over-identifying restrictions[12] examine the validity and strength of instrument. The key exogeneity assumption of this study is that the firm historical performance and characteristics are exogenous in relation to current shocks or innovation in performance. (Wintoki, 2012)

7.6 How many lags of performance are required for dynamic completeness?

The main concern is to make sure that enough lags have included to control the dynamic aspects of empirical relationship. If the enough numbers of lags have taken, then historical value of firm performance beyond those lags is considered valid instrument, provided it is exogenous to current performance shocks.

Table 7.6 present results regarding lags of performance via estimation of static OLS model. This study estimates a regression of current performance on first lag of past performance along with the controlling of other firm-specific characteristics to see whether first lag is sufficient to ensure dynamic completeness. The results show that the first lag of ROA of MB Ratio is statistically significant.

12 When we use robust standard error (which auto correct panel specific Heteroskedasticity and autocorrelation) then p-value of Hansen test is considered instead of Sargan test.

Table 7.6

Lags on Firm Performance (Local Firm Sample)

Dependent Variable	ROA	MB Ratio
Performance (t-1)	0.285***	0.604***
	(0.0546)	(0.0451)
BoardSize	0.00554	0.0483
	(0.0149)	(0.0330)
Female	0.0137	-0.100**
	(0.0217)	(0.0475)
NED	0.197	0.0466
	(0.180)	(0.389)
BoardMeet	0.0112	0.0734*
	(0.0201)	(0.0436)
Acomsize	0.00861	-0.0133
	(0.0188)	(0.0411)
DirOwn	0.129	-0.101
	(0.123)	(0.267)
InstiOwn	0.0930	0.109
	(0.116)	(0.252)
Associated Own	-0.0947	-0.172
	(0.131)	(0.285)
OwnCon	-0.179	-0.0265
	(0.140)	(0.301)
Firmsize	0.0170	-0.0486
	(0.0154)	(0.0335)
FirmAge	-0.000451	-0.000752
	(0.00411)	(0.00893)
Leverage	-0.375***	-0.496*
	(0.126)	(0.275)
DividendtoTA	0.217	0.397
	(0.199)	(0.429)
SaletoAssest	-0.0934	-0.449**
	(0.0930)	(0.201)
SaleGrowth	0.0858	0.114
	(0.0728)	(0.158)
CFtoTA	0.817**	0.282
	(0.339)	(0.742)
R-sq	0.248	0.498

This table present the results from the OLS estimation of equation 1. All explanatory variable except firm age and year dummies are endogenous variables. Year and industry dummies are included in all regressions. All t-statistics are based on robust, firm-clustered standard errors. The P-values are reported in parentheses, whereas, ***; **; * represent significance at the 1%, 5%, and 10% level, respectively.

7.7 Test of Strict exogeneity

This study conducts a test of strict exogeneity of explanatory and control variables as suggested by Wooldridge (2002) and Wintoki et al. (2012). This test investigates the possibility whether current level of corporate governance has impact on future values of corporate governance by estimating the following fixed effect model.

$$FP_{i,t} = \alpha + \beta_1 CG_{i,t} + \beta_X Controls_{i,t} + \Omega_1 CG_{i,t+1} + \Omega_X Controls_{i,t+1} + \mu_i + \varepsilon_{it} \quad \ldots\ldots\ldots\ldots (12)$$

This study develops the null hypothesis of strict exogeneity ($\Omega = 0$) which means that current value of the corporate performance is not associate with future value of corporate governance and control variables.

Table 7.6 present the results of equation 9 with various corporate governance variables and control variables using ROA and MB Ratio as measure of firm performance. The future values of financial variables are present in columns (2) and (4). The results indicate that future values of corporate governance variables are not significantly associate with firm performance.

In each column of Table 7.6 the coefficient estimates for the future values of explanatory variable are significantly different from zero. This insignificant association shows that characterises of explanatory variables cannot be consider as strictly exogenous and do not respond to ROA and MB Ratio. Therefore, future values of governance variables might not vary in response to current performance indicators which may allow current governance variable to be considered as predetermined, as opposed to endogenous. (Roodman, 2009; Kryzanowski and Mohebshahedin, 2016; Saeed et al, 2016). In conclusion, the results indicate that corporate governance variable and control variables are not strictly exogenous.

Table 7.7
Test of strict exogeneity

Dependent Variable	ROA	ROA	MB Ratio	MB Ratio
	1	2	3	4
Board Size (t)	-0.2	-0.198	-5.276	-0.8417
	(0.167)	(0.495)	(6.509)	(0.1694)
Female (t)	-0.0178	-0.00769	0.855	1.276
	(0.0408)	(0.0552)	(1.591)	(1.96)
NED (t)	-1.331	-0.1604	100.3	0.2318
	(2.614)	(13.42)	(101.9)	(0.4526)
Board Meet (t)	0.00683	-0.00411	-0.492	-0.648
	(0.0206)	(0.0316)	(0.805)	(1.104)
Acom size (t)	0.00214	0.0332	-1.219	-0.479
	(0.0285)	(0.0423)	(1.111)	(1.599)
Director Own (t)	0.0581	1.143	10.97	-0.679
	(0.35)	(1.107)	(13.65)	(37.82)
Institution Own (t)	0.101	-0.184	-3.366	-7.502
	(0.187)	(0.49)	(7.286)	(16.49)
Ownership Con (t)	0.821**	-0.154	-5.746	4.585
	(0.328)	(0.86)	(12.77)	(0.2933)
Associated Own (t)	1.557	-3.735	155	-244
	(3.135)	(5.209)	(122.2)	(176)
Firm Size (t)	0.0181	-0.0404	-1.957	-1.248
	(0.0322)	(0.0768)	(1.254)	(3.659)
Firm Age (t)	0.204	3.063	-0.681	-0.573
	(0.165)	(2.803)	(6.429)	(0.917)
Leverage (t)	-0.271*	-0.124	-4.959	0.424
	(0.15)	(0.223)	(5.853)	(0.7863)
Dividend to TA (t)	0.107	0.0337	-5.733	-2.118
	(0.238)	(0.406)	(9.294)	(0.1354)
Sale to Assets (t)	0.215**	-0.225	-0.83	3.026
	(0.0979)	(0.139)	(3.819)	(4.818)
Sale Growth (t)	0.0417	0.0518	-2.112	2.316
	(0.0727)	(0.0796)	(2.835)	(3.738)
CF to TA (t)	0.597	-0.284	3.582	9.04
	(0.38)	(0.611)	(14.81)	(21.17)
Board Size (t+1)	…	0.208	…	-0.167
	…	(0.528)	…	(17.94)
Female (t+1)	…	0.0358	…	-0.151
	…	(0.0687)	…	(2.436)
NED (t+1)	…	-0.472	…	-12.54
	…	(0.948)	…	(10.16)
Board Meet (t+1)	…	0.0107	…	0.977
	…	(0.033)	…	(1.126)
Acomsize (t+1)	…	0.0251	…	0.75
	…	(0.0533)	…	(1.88)
Dir Own (t+1)	…	-0.229	…	13.45
	…	(1.056)	…	(35.69)
Institution Own (t+1)	…	0.612	…	-13.35
	…	(0.413)	…	(14.44)
Own Con (t+1)	…	-1.256	…	8.802
	…	(1.029)	…	(34.74)
Associated Own (t+1)	…	15.5	…	0.4414
	…	(15.79)	…	(536.2)
Firm Size (t+1)	…	-0.00527	…	0.436***
	…	(0.0369)	…	(1.592)
Firm Age (t+1)	…	0.132	…	4.141
	…	(0.181)	…	(6.087)
Leverage (t+1)	…	0.019	…	-8.093
	…	(0.205)	…	(6.988)
Divi to TA (t+1)	…	0.119	…	1.57
	…	(0.446)	…	(15.54)
Sale to Assists(t+1)	…	-0.0447	…	-3.688
	…	(0.145)	…	(4.963)
Sale Growth (t+1)	…	-0.0243	…	2.971
	…	(0.0793)	…	(3.733)
CF to TA (t+1)	…	-0.516	…	0.1223
	…	(0.507)	…	(0.1725)

$FP_{i,t} = \alpha + \beta_1 CG_{i,t} + \beta_X Controls_{i,t} + \Omega_1 CG_{i,t+1} + \Omega_X Controls_{i,t+1} + \mu_i + \varepsilon_{it}$…(12) This table present the results indicate whether board structure adjust to past performance based on equation 7. The results of firm performance (ROA) is present in column 1 and 2 and MB ratio in column 3 and 4 respectively. Year and industry dummies are included in all regressions. All t-statistics are based on robust, firm-clustered standard errors. The P-values are reported in parentheses, whereas, ***; **; * represent significance at the 1%, 5%, and 10% level, respectively.

7.8 Empirical analysis

Next to previous discussion about dynamic endogeneity, this section examines the results regarding the relationship between corporate governance and firm performance. This section further compares the estimations results of static model (Fixed effects) and dynamic model (GMM) and evaluate the impacts of dynamic association between corporate governance and firm performance.

7.9 Empirical results based on ROA (Local Firms)

Table 7.9 present the results which indicate the association between corporate governance and firm financial performance (ROA) for full sample of the study. The results present as per the definitions report by system GMM estimator which indicate that dynamic endogeneity is a significant concern of the model. The results indicate that p-value of AR (2) is enough high (0.843) therefore, null hypothesis regarding instruments validity cannot be rejected as they are not correlated to the error term. Similarly, the p-value of Hansen test is also high (0.975) thus, the null hypothesis that instruments as a group are exogenous cannot be rejected.

Board size

Table 7.9 shows that The coefficient on board size is insignificant for ROA which indicates that firm performance is not affected by the size of board. The magnitude of The coefficient on board size is (-0.132) which is less than the previous study of Gibson Munisi et.,el.(2013) who reported (0.020) as coefficient of board size. This result is not consistent with agency and resource dependence theory as agency theory predicts a negative association between board size and firm performance and resource dependence theory suggests a positive association (Jensen, 1993; Dalton et al., (1999). Therefore, based on this result regarding board size, hypothesis H1C is rejected. This result is consistent with prior studies such as, (Mohd Ghazali, 2010; Amir Shehzad, el al., 2011; Zyad M. S, 2014).

Female board members

The coefficient on presence of females is insignificant for ROA which indicates that woman presumably not be making any significant contributions to corporate board decisions making. The Static fixed effects show that The coefficient on female board member is (-0.0178) which is less than the coefficient size in case of GMM estimator.

This result is incongruent with agency theory which stat that boards with greater diversity are more independent (Jensen and Meckling, 1976). The females in Pakistan are less tempted to serve as a board member especially after marriage due to domestic responsibilities and cultural environment in Pakistan. In general, the females in Pakistan not prefer to continue their jobs after marriage because of strong family system. Therefore, based on this result regarding presence of non-executive directors, hypothesis H2A is accepted. This result is consistent with prior studies (see for example Zahra and Stanton, 1988; Rose, 2007).

Vinnicombe and Johnson, (2001) study reveals that females are herself reluctant to stay as board members. The study has given the example of president of Coca-Cola UK, Mrs Penny Hughes who left her board position to look after her young sons and Miss Brenda Barnes who served as CEO of Pepsi Ltd has leave the position of manager based on her domestic matters.

Non-executive directors

The coefficient on presence of non-executive directors is insignificant for ROA which indicates that firm performance is not influence by presence of non-executive directors. The magnitude of The coefficient on non-executive directors is (0.1135) which is greater than the previous study of Aymen Ammari et al., (2014) who reported (-2.4) as coefficient of non-executive directors. Therefore, based on this result regarding presence of non-executive directors, hypothesis H3C is rejected. This result is incongruent with agency theory which predicts that higher proportion of non-executive directors leads to greater monitoring by the board (Fama and Jensen, 1983). As per Stewardship theory the non-executive directors have lack of business knowledge and unable to understand the complexities of the firm. (Weir and Laing, 2000). The non-executive directors are partly engaged with the firm activities, so they have little time to collect first-hand information about the firms' day to day management. The most of non-executive directors are recruited based on personal instead of formal interview. Therefore, there is possibility that non-executive directors have lack of professional qualification and industry knowledge which may become the reason of insignificant association between non-executive directors and firm performance. (Higgs, 2003). This result is consistent with several prior studies such as, (Hermalin and Weisbach, 1991; Laing and Weir, 1999; Reddy et al. 2010).

Frequency of Board Meetings

The coefficient on frequency of board meeting is insignificant for ROA which indicates that frequent board meetings is not necessarily beneficial. The dynamic GMM estimator show that

The coefficient on frequency of board meeting is (0.0611) which is greater than the coefficient size in case of Static fixed effects. Moreover, large numbers of meeting can be resulted in excessive cost of management in the form of managerial time, travel cost, director meeting fees and refreshment expenses. Therefore, based on this result regarding frequency of board meeting, hypothesis H4C is rejected. This result is consistent with previous studies such as (El Mehdi, 2007; Collins Ntim et al., 2009).

Audit committee size

The coefficient on audit committee is insignificant for ROA which indicates that firm performance is not affected by audit committee. The dynamic GMM estimator show that The coefficient on sale to assets is (0.137) which is greater than the coefficient size in case of Static fixed effects model. Therefore, based on this result regarding size of audit committee, hypothesis H5C is rejected. This result is consistent with Beasley (1996) and Baxter (2006) who document that there is no association between audit committee and firm performance.

Director Ownership

The coefficient on director's ownership is negative and statistically significant at 10% level for ROA which indicates that presence of director's ownership has negative influence on firm performance. The magnitude of The coefficient on director ownership is (0.1770) which is greater than the previous study of Nadeem, A. Sheikh et al., (2013) who reported (0.0462) as coefficient of director ownership. This negative association support the argument that due to high volume of shareholding, directors may acquire more voting power to protect themselves against any disciplinary action by the other members of the board. This situation encourages managers to adopt opportunistic behaviour which effects negatively on firm financial performance. Therefore, based on this result regarding director's ownership, hypothesis H6C is rejected. This result is consistent with several prior studies (see for example, Williams et al., 2003; Reddy et al., 2008; Mangena and Chamisa, 2008; Collins Ntim et al., 2009; Nadeem sheikh et al, 2013).

Institutional ownership

The coefficient on institutional ownership is insignificant for ROA which indicates that firm performance is not affected by institutional ownership. The dynamic GMM estimator show that The coefficient on sale to assets is (-0.108) which is less than the coefficient size in case of Static fixed effects model. There are less numbers of firms which have institutional

ownership in sample data. Therefore, based on this result regarding institutional ownership, hypothesis H7C is rejected.

Associated Ownership

The coefficient on associated ownership is positive and statistically significant at 5% level for ROA which indicate that associated ownership has positive influence on firm performance. The group of companies are more diversified, more financially stable and have positive impact on firm performance. Moreover, group of companies have capacity to acquired economies of large scale which turn positive impact on firm performance. This is unique variable which is introduce by this study as a part of corporate governance mechanism to determine its impact on firm performance. Therefore, based on this result regarding associated ownership, hypothesis H8C is accepted.

Ownership concentration

The coefficient on ownership concentration is positive and statistically significant at 5% level for ROA which indicates that presence of ownership concentration has positive influence on firm performance as skilled block holders help to improve firm performance. The magnitude of The coefficient on ownership concentration is (0.2656) which is greater than the previous study of Tuan Nguyen et al., (2014) who reported (0.007) as coefficient of ownership concentration. This result support the arguments of Agency theory which predicts that ownership concentration is one of the important mechanisms for monitoring managerial behaviour which helps to mitigate agency problems. The block holders have relevant expertise, skills, experience and time to perform firm activities which support better performance of the firm. Therefore, based on this result regarding ownership concentration hypothesis H9C is rejected. This result is consistent with several previous studies (see for example, Wiwattanakantang, 2001; Gedajlovic, Shaprio, 2002; Denis and McConnell, 2003; Fernandez, Gomez-Anson, 2006; Ehikioya, 2009; Becker et al., 2011; Tuan Nguyen et al., 2014; Zyad M. S 2014). Interestingly, the results of static fixed effects show significant negative association between ownership structure and ROA. After controlling unobserved heterogeneity, simultaneity, dynamic endogeneity, and autocorrelation through system GMM estimation, the coefficient sign of ownership concentration flips from negative to positive.

Firm Size

The coefficient on firm size is insignificant for ROA which indicates that firm performance is not affected by size as the sample firms have not effective control and monitoring mechanism due to large volume which may impact insignificantly on their performance. The magnitude of The coefficient on firm size is (0.0608) which is greater than the previous study of who reported (7.032) as coefficient of firm size. Therefore, based on this result regarding firm size, hypothesis H10C is rejected. This result is consistent with prior study of (Tuan Nguyen et al, 2014) who reports insignificant association between firm size and corporate performance.

Firm Age

The coefficient on firm age is insignificant for ROA which indicates that firm's age does not necessarily to have any impact on firm performance. The magnitude of The coefficient on firm age is (0.015) which is less than the previous study of Tuan Nguyen et al., (2014) who reported (0.208) as coefficient of firm age. Therefore, based on this result regarding firm age, hypothesis H11C is rejected. This result is rejecting the theoretical hypothesis that older firms operating in industries from many years and they have well established system and procedures.

Leverage

The coefficient on leverage is insignificant for ROA which indicates that firm performance is not affected by leverage. The magnitude of The coefficient on leverage is (-0.216) which is less than the previous study of who reported (0.003) as coefficient of leverage. The possible reason may be that the major operational cost of the firm is finance by equity. Therefore, based on this result regarding firm leverage, hypothesis H12C is rejected. This result is consistent with study results of (Tuan Nguyen et al., 2014) who documents that leverage is insignificant with firm performance.

Notably, the results of static fixed effects are significant at 10 % level between leverage and ROA. After controlling unobserved heterogeneity, simultaneity, dynamic endogeneity, and autocorrelation through system GMM estimation, the significant sign of leverage flips to insignificant.

Dividend to total asset

The coefficient on dividend to total assets is insignificant for ROA which indicates that dividend to total assets do not necessarily to have any impact on firm performance. The dynamic GMM estimator show that The coefficient on sale to assets is (0.16) which is greater than the coefficient size in case of Static fixed effects model. This result is rejecting the

theoretical hypothesis that payment of dividend is considered by market as better utilisation of cash flow and resulted in positive impact on firm performance

Sale to Assets

The coefficient on sale to assets is insignificant for ROA which indicates that sale to assets do not necessarily to have any impact on firm performance. The dynamic GMM estimator show that The coefficient on sale to assets is (0.629) which is greater than the coefficient size in case of Static fixed effects model. Notably, the results of static fixed effects show negative relationship at 5% level of significance. After controlling econometrics issues such as dynamic endogeneity through system GMM estimation, the significance sign of sale to asset flips from (significance negative to insignificant positive).

Sale Growth

The coefficient on sale growth is insignificant for ROA which indicates that firms with high sale growth do not necessarily to have any impact on firm performance. The dynamic GMM estimator show that The coefficient on sale to assets is (-0.432) which is less than the coefficient size in case of Static fixed effects model. The results of fixed effects model also show insignificant association between sale growth and ROA.

Cash flow to total assets

The coefficient on cash flow to total assets is insignificant for ROA which indicates that cash flow to total asset do not necessarily to have any impact on firm performance. The dynamic GMM estimator show that The coefficient on sale to assets is (0.1323) which is less than the coefficient size in case of Static fixed effects model. The potential investors consider the cash flow to total assets ratio to estimate the tendency of firms earning. Notably, the results of static fixed effects are also insignificant.

7.10 Empirical results based on MB Ratio (Local Firms Sample)

Table 7.10 present the results which indicate the association between corporate governance and firm performance (MB Ratio) for full sample of the study. The results present as per the definitions report by system GMM estimator which indicates that dynamic endogeneity is a significant concern of the model. The results indicate that p-value of AR (2) is enough high (0.820) therefore, null hypothesis regarding instrument validity cannot be rejected. Similarly,

the p-value of Hansen test is also high (0.976) thus, the null hypothesis that instruments as a group are exogenous cannot be rejected.

Board size

Table 7.10 shows that The coefficient on board size is positively associated with MB Ratio at 10% level of significance which indicate that large board size is positively impact firm financial performance and shareholders' value generation. The magnitude of The coefficient on board size is (0.502) which is greater than the previous study of Nadeem et al., (2013) who reported (0.1187) as coefficient of board size. These phenomena can be better defined by resource dependence theory which suggests that the large board size with high level of links to external environment enhances the firm access to more resources which impact positively on firm performance. This result is consistent with study results of Nadeem A sheikh et al. (2013) who study the data of 154 Pakistani firm for the period of 2004-2008 and found a positive association between board size and firm performance measure by ROA and MB ratio. This result is also consistent with various prior studies like (Kiel and Nicholson, 2003; Jackling and Johl, 2009; Abor and Biekpe, 2007; Collins Ntim et al., 2009) who reported a positive association between board size and firm performance.

Moreover, in a varied organisational culture and complex business environment a large size board will in better position to support and advise management more effectively. The existing literature document that large board provide a firm with greater expertise and accessibility to scarce resources (Dalton *et al.,* 1999). Therefore, the firms with larger board may provide the firm with easy access to latest technology, raw material and foreign markets. As a developing economy like Pakistan, there is political instability and uncertainty is prevailing, therefore the firm with larger and diversifies board are positively associated with firm financial performance.

Female board members

The coefficient on presence of females is insignificant for MB Ratio which indicates that woman presumably not be making any significant contributions to corporate board decisions making. The dynamic GMM estimator show that The coefficient on presence of females is (-0.0104) which is less than the coefficient size in case of Static fixed effects model. This result is incongruent with agency theory which stat that boards with greater diversity are more independent (Jensen and Meckling, 1976). The females in Pakistan are less tempted to serve as a board member especially after marriage due to domestic responsibilities and cultural environment in Pakistan. In general, the females in Pakistan not prefer to continue their jobs

after marriage because of strong family system. Therefore, based on this result regarding presence of non-executive directors, hypothesis H2D is accepted. This result is consistent with prior studies of Zahra and Stanton (1988) and Rose (2007) who have found insignificant relation between presence of female and firm performance.

Non-executive directors

The coefficient on presence of non-executive directors is insignificant for MB Ratio which indicates that firm performance is not influence by presence of non-executive directors. The magnitude of The coefficient on non-executive directors is (1.650) which is greater than the previous study of Aymen Ammari et al., (2014) who reported (-2.4) as coefficient of non-executive directors. This result is incongruent with agency theory which predicts that higher proportion of non-executive directors are leading to greater monitoring by the board (Fama and Jensen, 1983). As per Stewardship theory the non-executive directors have lack of business knowledge and unable to understand the complexities of the firm. (Weir and Laing, 2000). This result is consistent with several prior studies such as (Hermalin and Weisbach, 1991; Laing and Weir, 1999; and Reddy et al. 2010). The most of non-executive directors are recruited based on personal instead of formal interview. Moreover, the non-executive directors are partly engaged with the firm activities, so they have little time to collect first-hand information about the firms' day to day management.

Therefore, there is possibility that non-executive directors have lack of professional qualification and industry knowledge which may become the reason of insignificant association between non-executive directors and firm performance (Higgs, 2003). Therefore, based on this result regarding presence of non-executive directors, hypothesis H3D is rejected.

Frequency of board meetings

The coefficient on frequency of board meeting is insignificant with MB Ratio which indicate that frequent board meetings is not necessarily beneficial. Moreover, large numbers of meeting can result in high cost of management in the form of managerial time, travel cost, director meeting fees and refreshment expenses. The dynamic GMM estimator shows that The coefficient on frequency of board meeting is (0.286) which is than the coefficient size in case of Static fixed effects model. Therefore, based on this result regarding frequency of board meeting hypothesis H4D is accepted. This result is consistent with previous studies of El Mehdi (2007) Collins Ntim et al., (2009) who document the insignificant relation between frequency of board meeting and firm performance.

Another argument in favour of above insignificant relationships is that, more numbers of meeting can result in high cost of management in the form of managerial time, travel cost, director meeting fees and refreshment expenses. (Collins Ntim et al.,2009). El Mehdi (2007) study a sample of 24 Tunisian firms for the period of (2000-2005) and reported an insignificant association between frequency of board meeting and firm performance.

Audit committee size

The coefficient on audit committee is insignificant for MB Ratio which indicates that firm performance is not affected by audit committee. The dynamic GMM estimator show that The coefficient on audit committee is (0.404) which is greater than the coefficient size in case of Static fixed effects model. Therefore, based on this result regarding size of audit committee hypothesis H5D is rejected. This result is consistent with Beasley (1996) and Baxter (2006) who document that there is no association between audit committee and firm performance. Keong et al (2002) study reveals that audit, remuneration and nomination committees have no worth and deem like a window dressing unless they independent and have full access to monitor firm's activities. Moreover, static fixed effect model showed a positive association at 10% level of significance.

Director ownership

The coefficient on director's ownership is insignificant for MB Ratio which indicates that director ownership is not necessarily beneficial and has no impact on firm performance. This result is consistent with previous study of Florackis et al. (2009). The magnitude of The coefficient on director ownership is (1.522) which is greater than the previous study of Nadeem et al., (2013) who reported (0.0462) as coefficient of director ownership. This may be due to the reason that when the managerial ownership increase, the managers become the directors and shareholders of the firm. This situation is not positively influence on firm performance as agency theory argues that the manger and shareholders' interests are not align. Therefore, based on this result regarding director's ownership, hypothesis H6D is rejected.

Institutional ownership

The coefficient on institutional ownership is insignificant for MB Ratio which indicates that firm performance is not affected by institutional ownership. The dynamic GMM estimator show that The coefficient on institutional ownership is (0.837) which is greater than the

coefficient size in case of Static fixed effects model. Therefore, based on this result regarding institutional ownership, hypothesis H7D is accepted.

Associated Ownership

The associated ownership is positive and statistically significant at 5% level for MB Ratio in case of local firms which indicate that associated ownership has positive influence on firm performance. The dynamic GMM estimator show that The coefficient on associated ownership is (0.5412) which is greater than the coefficient size in case of Static fixed effects model. Therefore, based on this result regarding associated ownership, hypothesis H8D is rejected.

Ownership concentration

The coefficient on ownership concentration is insignificant with MB Ratio which indicate that firm performance is not affected by ownership concentration. The magnitude of The coefficient on ownership concentration is (1.228) which is greater than the previous study of Nadeem et al., (2013) who reported (0.0281) as coefficient of ownership concentration. This result is consistent with Amir Shehzad et al (2011) who reviewed the data of 200 listed firm in Pakistan and analyse the relationship ownership concentration and firm performance. The study found no significant relationship between ownership concentration and firm performance. This result is consistent with several prior studies (see for example, Demsetz and Lehn; 1985; Vefeas and Theodorou, 1998; Mangena and Chamisa; 2008 El Mehdi, 2007; Mangena and Chamisa, 2008). These studies document that ownership concentration have no influence on firm performance.

Firm size

The coefficient on firm size is insignificant for MB Ratio which indicates that firm performance is not affected by size as the sample firms have not effective control and monitoring mechanism due to large volume which may impact insignificantly on their performance. The magnitude of the coefficient on firm size is (0.120) which is less than the previous study of Aymen Ammari et al., (2014) who reported (7.032) as coefficient of firm size. Therefore, based on this result regarding firm size, hypothesis H10D is rejected. This result is consistent with prior study of (Tuan Nguyen et al, 2014) who reports insignificant association between firm size and corporate performance. Moreover, the static and dynamic fixed effect model shows a negative and significant relationship between firm size and MB Ratio.

Firm Age

The coefficient on firm age is insignificant for MB Ratio which indicates that firm's age does not necessarily to have any impact on firm performance. The magnitude of The coefficient on firm age is (0.0100) which is less than the previous study of Tuan Nguyen et al., (2014) who reported (0.208) as coefficient of firm age. Therefore, based on this result regarding firm age, hypothesis H11D is rejected. This result is also rejecting the theoretical hypothesis that older firms operating in industries from many years and they have well established system and procedures. Second, this result is also incongruent with concept that firm with less age are generally low credit worth and risk of instability.

Leverage

The coefficient on leverage is insignificant with MB Ratio which indicate that firm performance is not affected by leverage. This result is consistent with study results of (Tuan Nguyen et al., 2014) who documents that leverage is insignificant with firm performance. The reason may the firm major operational cost is finance by equity. The magnitude of The coefficient on leverage is (-0.0768) which is less than the previous study of Gibson et., al (2013) who reported (0.003) as coefficient of leverage. Therefore, based on this result regarding firm leverage, hypothesis H12D is accepted.

Dividend to total Assets

The coefficient on dividend to total assets is insignificant for MB Ratio which indicates that dividend to total assets do not necessarily to have any impact on firm performance. The dynamic GMM estimator show that The coefficient on dividend to total assets is (0.584) which is greater than the coefficient size in case of Static fixed effects model. This result is rejecting the theoretical hypothesis that payment of dividend is considered by market as better utilisation of cash flow and resulted in positive impact on firm performance.

Sale to Assets

The coefficient on sale to assets is insignificant for MB ratio which indicates that sale to assets do not necessarily to have any impact on firm performance. The dynamic GMM estimator show that The coefficient on sale to assets is (-1.324) which is less than the coefficient size in case of Static fixed effects model. This leads to the hypothesis that firms have not optimal use of their resources which affect their efficiency and resulted in insignificant impact on overall firm performance.

Sale Growth

The coefficient on sale growth is insignificant for MB Ratio which indicates that firms with high sale growth do not necessarily to have any impact on firm performance. The dynamic GMM estimator show that The coefficient on sale growth is (0.232) which is greater than the coefficient size in case of Static fixed effects model. The results of static and dynamic fixed effects also show insignificant association between sale growth and firm performance.

Cash flow to total assets

The coefficient on cash flow to total assets is insignificant for MB Ratio which indicates that sale to assets do not necessarily to have any impact on firm performance. The dynamic GMM estimator show that The coefficient on cash flow to total assets is (0.475) which is greater than the coefficient size in case of Static fixed effects model. The potential investors consider the cash flow to total assets ratio to estimate the tendency of firms earning. The results of static fixed effects also show insignificant association.

7.12 Summary of results (Local firms' sample)

This chapter discusses the findings about the impact of corporate governance on firm performance by ROA and MB ratio for the local firms' sample of study. This study finds an issue of endogeneity and heteroscedasticity in data which leads to the application of system GMM. Therefore, system GMM is the main estimation technique of this study which results compare with static and dynamic fixed effects to analyse that how dynamic endogeneity influence the corporate governance and firm performance relationship. Interestingly, both System GMM estimators such as GMMa and GMMb have traced the existence of dynamic endogeneity across sample firms.

Moreover, the empirical results of static fixed effects in table 7.8 indicate few variables which have significant association with firm performance but when unobserved heterogeneity, simultaneity, dynamic endogeneity and autocorrelation has control through system GMM estimation, the coefficient sign of such variables flip from significant to insignificant association. For example, leverage, sale to assets and cash flow to total assets shows a significant association for ROA but when endogeneity is fixed by system GMM, their coefficient sign flip from significant to insignificant. Similarly, the results of static fixed effects in table 7.10 indicate that The coefficient on audit committee size and firm size significant for MB ratio but their coefficient sign flip from significant to insignificant when system GMM

fixed dynamic endogeneity, unobserved heterogeneity, simultaneity. Therefore, earlier studies which have ignored the dynamic endogeneity, may be biased.

Therefore, it has concluded that corporate governance does matter in Pakistan and do influence on firm performance of local firms. There are four corporate governance variables such as board size, director ownership, associated ownership and ownership appear to have a statistically significant effect on firm performance (ROA and MB ratio) for local firms' sample. These finding are consistent with the arguments of previous studies such as (Schultz et al., 2010; Pham et al., 2011; Wintokit al., 2012) which document that association between corporate governance and firm performance should be examine in dynamic framework. However, the findings of this study are not completely in agreement with the arguments of these studies as they document that corporate governance mechanisms do not matter after controlling the potential source of dynamic endogeneity.

On the contrary, the findings of this study document that corporate governance does matter and has significant impact on firm performance after controlling of dynamic endogeneity, un-observed heterogeneity, simultaneity and autocorrelation. The finding of this study consistent with a few latest studies (see for example, Nirosha Hewa, 2012; Gibson et al, 2013 Abdullah Mohammed, 2014; Tuan Nguyen et al., 2014; Zaimah Abdullah, 2015). These studies results reveal a significant association between corporate governance variables and firm financial performance even after controlling of dynamic endogeneity, unobserved heterogeneity, simultaneity and auto-correlation. These finding also support the arguments of Yabei and Izumida (2008) who has argued that corporate governance plays a vital role in disciplining management and determining firm performance. These results support the arguments that firms should be encouraged to perform better corporate governance practices.

Chapter 8

Results and discussion (MNC Firms)

8.1 Introduction

This chapter aims to presents the empirical results analysis of the data about the relationship between corporate governance and firm performance of MNC, s firms. This chapter is organised as follows. Section 8.2 present the descriptive statistic of the sample data. Section 8.3 present the pair-wise correlation of variables. This is followed by financial performance analysis and discussion (section 8.3). Thereafter, section 8.4 is about the data specification test. Finally, section 8.5 conclude the summary of the chapter.

8.2 Descriptive statistics (MNC Firms)

Table 8.2 provides a summary of descriptive statistics of dependent, independent and control variables uses in this study. The table presents the number of observation, mean, median, standard deviation, minimum and maximum value of each variable. There are two categories of independent variables which are board structure and ownership structure. The sample consist of 63 non-financial MNC firms of Pakistan.

The average mean of ROA is 0.3400 whereas, maximum value is 0.986, median is 0.29 and minimum is 0.02. The positive value of mean is greater than full sample and local firms sample which indicates that most MNC firms are more financially stable as compared to local firms of Pakistan. Though the mean average is small, but this positive value depicts that the sample firms have created shareholders value. This positive mean value also evidence of an effective utilisation of firm assets to generate an operating surplus.

The mean of MB Ratio of MNC firms is 5.4372 which is greater than local firms' mean of 1.8799 which depicts that on average MNC firms have created value for the shareholders. The maximum MB Ratio is 18.96, median is 4.01 and minimum value is 0.63.

The minimum numbers of board size are 5, median is 8 and maximum is 15. The mean of board size is 8 which is greater than average mean of local firms. In Pakistan, majority of firms prefer 7 members in board of directors. This board size is like US average board size, as the study results of Switzer and Tang, (2008) document that in US, the range of board size is from 4 to 15 and average board consist of 7 to 8 members.

The minimum number of female members in board is 0, median is 1 and maximum is 4. The mean of female members is 0.9087 % which is significantly low as compared to European average female board members which is 10% (Boards in Turbulent times, corporate governance report, 2009). The females in Pakistan are less tempted to serve as a board member especially after marriage due to domestic responsibilities and cultural environment in Pakistan. In general, the females in Pakistan not prefer to continue their jobs after marriage because of strong family system.

The minimum number of non-executive directors in board is 0, median is 0.25 and maximum is 0.57%. The mean of non-executive directors is 0.2316 % which indicates a very small contribution of non-executive directors in board of directors. The minimum number of board meeting per year is 2, median is 4 and maximum is 9. The mean of frequency of board meeting is 4.5731 which almost like local firms 'sample which indicate that, Pakistani firms have awareness that frequency of board meeting helps to improve the overall performance of the firm through effective communication and monitoring. The minimum size of audit committee is 0, median is 3 and maximum is 8 which is greater than local firms' sample. The mean of audit committee is 3.1335 which indicates that MNC firms have awareness that the existence of audit committee increases internal monitoring, decrease internal fraud and improve corporate governance compliances.

The minimum value of director's ownership is 0, median is .05 and maximum is 0.95. The mean of director's ownership is 0.1753. This situation also supports the argument that presence of director's ownership has positive influence on firm performance as it helps to align the interest of managers and shareholders. This may be due the fact that when the managerial ownership increases the managers become the directors and shareholders of the firm. Therefore, better firm performance is expected as the manger and shareholders' interests become more align. The minimum value of institutional ownership is 0, maximum is 0.98 and median is 0.159. The mean of institutional ownership is 0.3098. The maximum value indicates that there is existence institutional ownership in MNC firms of Pakistan.

The minimum value of associated ownership is 0.002, median is 0.663 and maximum is 0.9883. The mean of associated ownership is 0.6138. These are the group of companies which acquire the shares of other firms which make the firm's board more diversified. Moreover, these group of companies have capacity to acquired economies of large scale which turn positive impact on firm performance. The minimum value of ownership concentration is 0, median is 0.789

and maximum value is 0.9669. The mean of ownership concentration is 0.6982. The minimum of firm size is 14.17, median is and maximum is 24.44. The mean of firm size is 19.85. This indicates that MNC firms are relatively bigger in size as compared to local firms.

The minimum age of the firm is 17, median is 24 and maximum is 35. The mean of firm age is 24.26. This indicates that selected sample consist of both new and old age firms. The minimum value of leverage is 0, median is 0.101 and maximum is .0948. The mean of leverage is 0.1435 which indicates that firms in selected sample are highly leveraged. The minimum value of dividend to total asset is 0, median is 0.011 and maximum is 5.1641. The mean of dividend to total asset is 0.2114 which indicates that MNC firms are paying more dividend as compared to local firms.

The minimum value of sale to assets is -.0015, median is 0.2 and maximum is 3.4753. The mean of sale to total asset is 0.2871. This indicates the MNC firm's efficiency of generating sale for each value of asset is vary among sample firms. The minimum value of sale growth is -6.806, median is 0.132 and maximum is 1. The mean of sale growth is 0.1371. The minimum value of cash flow to total asset is -3.055, median is 0.122 and maximum is 3.9614. The mean of cash flow to total asset is 04835. This indicates efficiency MNC firms in collecting cash from sales and debtors which is seems reasonable in this sample.

8.3 Correlation Matrix

The results of correlation matrix present in table 8.3 which indicates that explanatory variables are both positively and negatively correlated with dependent variables such as ROA and MB Ratio. Second, most of the cross correlation of explanatory variables are small, thus at first stage it does not show any problem of multicollinearity among the explanatory variables. For example, the highest correlation is between associated ownership and ownership concentration which is 0.44. The second highest correlation is between director's ownership and associated ownership which is 0.33. The other high correlations are between associated ownership and cashflow to total assets (0.338), NED and board size (0.28), firm size and institutional ownership (0.26), firm size and ownership concentration (0.25), cash flow to MB ratio (0.23), ownership concentration and board size (0.21) etc. None of the independent variables are above 0.44 which indicate that the likelihood of multicollinearity in OLS regression is low. This study also run a formal test of multicollinearity such as VIF (Verification inflation factor test) to validate the estimation results.

Table 8.3 Correlation Matrix

	ROA	MB Ratio	BSize	Female	NED	B Meet	AcomSize
ROA	1						
MB Ratio	0.2973	1					
Board Size	0.1061	0.1423	1				
Female	0.0206	0.0532	0.0303	1			
NED	0.0517	0.0246	0.2833	-0.0124	1		
Board Meet	0.0453	0.0633	0.0095	0.0534	-0.0419	1	
Acom Size	0.0218	0.0655	0.1528	-0.1633	-0.0047	0.0183	1
Dir Own	0.0041	-0.0737	-0.2106	-0.0027	0.1339	0.0511	0.0648
Institut Own	-0.0444	0.0573	-0.0377	0.0504	-0.1703	0.04	0.0135
Asso own	0.0042	0.171	0.173	-0.0437	-0.1396	0.0822	0.0481
Own Con	-0.1015	0.0816	0.2173	-0.0298	0.0345	0.0285	0.1616
Firm Size	0.0015	0.0728	0.2291	-0.046	-0.0804	0.0263	0.188
Firm Age	-0.0031	0.1403	0.1486	0.0813	-0.1409	0.03	0.0519
Leverage	-0.0442	-0.1826	0.1351	-0.0346	0.0864	0.0173	0.0216
Divid to TA	0.0668	0.2411	0.1097	-0.0805	0.05	-0.0555	0.1852
SaletoAsset	0.0464	0.0509	0.1131	0.0075	-0.0175	0.0808	0.0785
Sale Growth	0.0999	0.0766	-0.0276	0.0259	-0.0753	0.0641	0.0016
CF to TA	-0.0026	0.1462	-0.0571	-0.0417	-0.0122	-0.0145	0.0242
	DirOwn	**Insti Own**	**Asso own**	**OwnCon**	**FSize**	**FAge**	**Leverage**
Dir Own	1						
Institut Own	0.0495	1					
Asso own	-0.3360	0.0242	1				
Own Con	0.0094	0.0615	0.4469	1			
Firm Size	-0.1262	0.2625	0.1191	0.2522	1		
Firm Age	0.0386	-0.2108	0.0102	0.121	0.0979	1	
Leverage	-0.0505	0.0613	0.0647	0.0647	0.1818	-0.0131	1
Divid to TA	-0.0300	0.1531	0.1531	0.0788	0.0376	0.0852	-0.0735
SaletoAsset	-0.0138	0.1586	-0.0959	-0.0911	-0.0108	-0.0226	-0.0204
Sale Growth	-0.0538	0.0105	0.0132	-0.0076	-0.0438	0.0037	0.0148
CF to TA	0.0478	-0.0526	-0.0038	0.0351	0.0183	0.0011	-0.0567
	Divi toTA	**SaletoAsset**	**SaleGrow**	**CFtoTA**			
Divid to TA	1						
SaletoAsset	-0.0401	1					
Sale Growth	0.0376	-0.0259	1				
CF to TA	0.0137	-0.0096	0.0097	1			

8.4 Panel data diagnostic tests

According to Carl Friedrich and Andrey, A linear regression about which the errors expectation is zero and uncorrelated with equal variance is consider as the (BLUE) best linear unbiased estimator of the coefficient. This study run a few diagnostic tests to investigate whether the underlying statistical assumptions have violated which validate the status of BLUE. These diagnostic tests have discussed in chapter 5, section 5.10. Therefore, this section examines the VIF (Verification inflation factor) test, heteroscedasticity, autocorrelation and Hausman test. These test results are recommending whether the underlying assumptions of OLS (ordinary least square regression) have followed or violated. The results of these tests help to determine the best fit model for this study. Therefore, first diagnostic test of this study is VIF test which examine the issue of multicollinear.

8.4.1 Test of Endogeneity

Endogeneity is a term used to explain the existence of endogenous explanatory variable in multiple regression model which is correlated with the error term, due to measurement error, omitted variable or simultaneity. A detailed discussion about endogeneity has explained in chapter 5, section 5.11. Most of the previous studies of corporate governance have ignored the effects of endogeneity. Generally, the effects of endogeneity are that the regression model makes The coefficient on explanatory variable unreliable and biased. The ordinary least square (OLS) and fixed effect estimation can have only be obtained efficient results when the independent variables are exogenous. Therefore, it is important to test endogeneity for efficient, reliable and unbiased estimation of the model. (Wooldridge, 2003)

This study conducts a Durbin–Wu–Hausman (DWH) test to check whether endogeneity has existed in corporate governance and firm performance relationship. The DWH test examines the endogenous association between corporate governance variables and proxies of financial performance (ROA, MB Ratio). The result of DWH test shows that null hypothesis (Ho: regressors are exogeneous), cannot accepted as [Chi-sq (8) =2 3.57; p=0.001]. Table 8.4.3 present the results of DWH test which indicate that variables (denoted by*) have significant endogeneity problems. The existence of endogeneity makes the estimation results biased which lead to application of dynamic GMM estimation.

Table 8.4.1 The DWH test for endogeneity of regressors (MNC Firms Sample)

Ho: Regressors are exogeneous

Variables	**ROA**	**MB Ratio**
Board size	6.23***	7.11***
Female	1.95*	1.15
NED	3.65**	4.12**
Board Meeting	2.41*	3.21**
Audit committee size	5.12***	3.41**
Director Ownership	2.55	3.05**
Institutional Ownership	3.11	0.21
Associated Ownership	0.56	0.32
Ownership Concentration	0.453	0.332

8.5 GMM modelling tests

In order to test the validity, adequacy and appropriateness of the given model and estimation method, it is important that instruments use in model are valid and exogenous as group. Therefore, Arellano-Bond, first order auto-correlation AR (1), second order autocorrelation AR (2) and Hansen test of over-identifying restrictions examine the validity and strength of instrument. The key exogeneity assumption of this study is that the firm historical performance and characteristics are exogenous in relation to current shocks or innovation in performance. (Wintoki, 2012)

8.6 How many lags of performance are required for dynamic completeness?

The main concern is to make sure that enough lags have included to control the dynamic aspects of empirical relationship. If the enough numbers of lags have taken, then historical value of firm performance beyond those lags is considered valid instrument, provided it is exogenous to current performance shocks.

Table 8.6 present results regarding lags of performance via estimation of static OLS model. This study estimates a regression of current performance on first lag of past performance along with the controlling of other firm-specific characteristics to see whether first lag is sufficient to ensure dynamic completeness. The results show that the first lag of ROA of MB Ratio is statistically significant.

Table 8.6

Lags on Firm Performance (MNC Firms Sample)

Dependent Variable	ROA	MB Ratio
Performance (t-1)	0.141**	0.960***
	(0.0671)	(0.0187)
BoardSize	-0.00476	-0.000966
	(0.0209)	(0.0706)
Female	-0.0565**	-0.0666
	(0.0267)	(0.0905)
NED	-0.0287	0.0459
	(0.179)	(0.608)
BoardMeet	0.0340**	0.0623
	(0.0166)	(0.0566)
Acomsize	0.00464	0.0175
	(0.0117)	(0.0394)
DirOwn	0.0493	0.293
	(0.0785)	(0.290)
InstiOwn	0.0131	0.0848
	(0.0623)	(0.215)
Associated Own	0.0356	0.235
	(0.0912)	(0.324)
OwnCon	-0.216*	-0.507
	(0.110)	(0.368)
Firmsize	0.0189	-0.0570
	(0.0150)	(0.0506)
FirmAge	-0.0000896	0.0167
	(0.00492)	(0.0176)
Leverage	0.00259	0.449
	(0.133)	(0.457)
DividendtoTA	0.0239	0.00450
	(0.0238)	(0.0811)
SaletoAssest	-0.0294	-0.0311
	(0.0609)	(0.206)
SaleGrowth	0.0185	-0.285
	(0.0515)	(0.174)
CFtoTA	-0.0548***	-0.0474
	(0.0178)	(0.0600)
R-sq	0.217	0.961

This table present the results from the OLS estimation of equation 1. All explanatory variable except firm age and year dummies are endogenous variables. Year and industry dummies are included in all regression. All t-statistics are based on robust, firm-clustered standard errors. The P-values are reported in parentheses, whereas, ***; **; * represent significance at the 1%, 5%, and 10% level, respectively.

8.7 Test of Strict exogeneity

This study conducts a test of strict exogeneity of explanatory and control variables as suggested by Wooldridge (2002) and Wintoki et al. (2012). This test investigates the possibility whether current level of corporate governance has impact on future values of corporate governance by estimating the following fixed effect model.

$$FP_{i,t} = \alpha + \beta_1 CG_{i,t} + \beta_X Controls_{i,t} + \Omega_1 CG_{i,t+1} + \Omega_X Controls_{i,t+1} + \mu_i + \varepsilon_{it} \quad \ldots\ldots\ldots\ldots (12)$$

This study develops the null hypothesis of strict exogeneity ($\Omega = 0$) which means that current value of the corporate performance is not associate with future value of corporate governance and control variables.

Table 8.7 present the results of equation 9 with various corporate governance variables and control variables using ROA and MB Ratio as measure of firm performance. The future values of financial variables are present in columns (2) and (4). The results indicate that future values of corporate governance variables are not significantly associate with firm performance.

In each column of Table 8.7 the coefficient estimates for the future values of explanatory variables are significantly different from zero. This insignificant association shows that characterises of explanatory variables cannot be consider as strictly exogenous and do not respond to ROA and MB Ratio. Therefore, future values of governance variables might not vary in response to current performance indicators which may allow current governance variable to be considered as predetermined, as opposed to endogenous. (Roodman, 2009; Kryzanowski and Mohebshahedin, 2016; Saeed et al, 2016). In conclusion, the results indicate that corporate governance variable and control variables are not strictly exogenous.

Table 8.7
Test of strict exogeneity

Dependent Variable	ROA	ROA	MB Ratio	MB Ratio
	1	2	3	4
Board Size(t)	-0.0182	-0.0584	3.76	0.628
	(0.185)	(0.207)	(7.84)	(4.169)
Female(t)	-0.0808**	-0.0525	-0.86	-0.353
	(0.0352)	(0.0465)	(1.494)	(0.936)
NED(t)	0.0168	0.0346	155	1.957
	(0.0238)	(0.0226)	(0.122)	(1.254)
Board Meet(t)	0.0168	0.00954	-1.936*	0.233
	(0.0238)	(0.0277)	(1.01)	(0.558)
Acom size(t)	0.0346	0.0275	0.486	0.293
	(0.0226)	(0.0267)	(0.959)	(0.5370)
Director Own(t)	-0.934	-7.441	-63.03	-57.37
	(2.644)	(4.728)	(112.1)	(0.9522)
Institution Own(t)	-1.089**	-0.933	16.66	16.04
	(0.505)	(0.959)	(0.2143)	(19.32)
Ownership Con(t)	0.0829	0.202	-9.201	-16.91
	(0.774)	(1.039)	(0.3284)	(20.91)
Associated Own(t)	-19.41	-15.18	24.1	-89.17
	(13.23)	(16.29)	(561)	(328)
Firm Size(t)	-0.0294	-0.0641	4.065**	-0.758
	(0.0416)	(0.0696)	(1.762)	(1.402)
Firm Age(t)	0.0193	0.83	3.371	2.112
	(0.13)	(3.819)	(5.519)	(2.835)
Leverage(t)	-0.234	-0.379	-0.2659***	-6.782
	(0.214)	(0.303)	(9.069)	(6.103)
Dividend to TA(t)	-0.0112	-0.0509	-8.125***	0.639
	(0.0397)	(0.0519)	(1.682)	(1.046)
Sale to Assets(t)	0.0327	0.0697	9.101**	0.461
	(0.0985)	(0.125)	(4.176)	(2.513)
Sale Growth(t)	0.320***	0.376***	8.660**	5.082***
	(0.0798)	(0.0934)	(3.383)	(1.881)
CF to TA(t)	0.0703***	-0.0679**	0.284	0.243
	(0.026)	(0.031)	(1.102)	(0.623)
Board Size (t+1)	…	4.141	…	0.977
	…	(6.087)	…	(1.126)
Female (t+1)	…	-0.0158	…	-1.212
	…	(0.05020)	…	(1.01)
NED (t+1)	…	1.57	…	0.75
	…	(15.54)	…	(1.88)
Board Meet (t+1)	…	-0.0251	…	-0.0887
	…	(0.0296)	…	(0.596)
Acomsize (t+1)	…	0.00527	…	-0.728
	…	(0.0314)	…	(0.632)
Dir Own (t+1)	…	5.371	…	0.2746
	…	(4.588)	…	(9238)
Institution Own (t+1)	…	-0.371	…	5.947
	…	(0.964)	…	(0.1942)
Own Con (t+1)	…	0.0161	…	13.87
	…	(1.067)	…	(0.2149)
Associated Own (t+1)	…	-0.301	…	-258.1
	…	(0.212)	…	(0.4286)
Firm Size (t+1)	…	0.0748	…	0.0192
	…	(0.0589)	…	(1.185)
Firm Age (t+1)	…	-0.0163	…	3.063
	…	(0.139)	…	(2.803)
Leverage (t+1)	…	-0.0279	…	-0.10.91*
	…	(0.278)	…	(5.588)
Divi to TA (t+1)	…	-0.0249	…	-0.573
	…	(0.0455)	…	(0.917)
Sale to Assets(t+1)	…	0.0315	…	0.296
	…	(0.11)	…	(2.221)
Sale Growth (t+1)	…	0.00905	…	-0.837
	…	(0.0985)	…	(1.982)
CF to TA (t+1)	…	-0.021	…	-0.363
	…	(0.0306)	…	(0.616)

$FP_{i,t} = \alpha + \beta_1 CG_{i,t} + \beta_X Controls_{i,t} + \Omega_1 CG_{i,t+1} + \Omega_X Controls_{i,t+1} + \mu_i + \varepsilon_{it}$ …….(12) This table present the results indicate whether board structure adjust to past performance based on equation 7. The results of firm performance (ROA) is present in column 1 and 2 and MB ratio in column 3 and 4 respectively. Year and industry dummies are included in all regressions. All t-statistics are based on robust, firm-clustered standard errors. The P-values are reported in parentheses, whereas, ***; **; * represent significance at the 1%, 5%, and 10% level, respectively.

8.8 Empirical analysis

Next to previous discussion about dynamic endogeneity, this section examines the results about the relationship between corporate governance and firm performance. This section further compares the estimations results of static model (Fixed effects) and dynamic model (GMM) and evaluate the impacts of dynamic association between corporate governance and firm performance.

8.9 Empirical results based on ROA (MNC Firms)

Table 8.9 present the results which indicate the association between corporate governance and firm financial performance (ROA) for MNC firms' sample of the study. The results present as per the definitions report by system GMM estimator which indicates that dynamic endogeneity is a significant concern of the model. The results indicate that p-value of AR (2) is enough high (0.811) therefore, null hypothesis regarding instrument validity cannot be reject. Similarly, the p-value of Hansen test is also high (059) thus, the null hypothesis that instruments as a group are exogenous cannot be rejected.

Board size

Table 8.9 shows that board size is negatively associate with ROA at 1% significance level which indicates that larger board size negatively impacts on firm performance due to lack of communication. The magnitude of The coefficient on board size is (-0.5225) which is greater than the previous study of Gibson et., al (2013). This result support the arguments of agency theory which predicts a negative association between board size and firm performance (Jensen, 1993) and incongruent with resource dependence theory which suggests a positive association between board size and firm performance. (Dalton et al., 1999)

The larger board size has less chances to coordinate effectively between shareholders and board member. The larger board decreases firm value because when board size increases then the problems like difficulty in coordination and communication arises. Therefore, based on this result regarding board size, hypothesis H1E is rejected. This result is consistent with prior studies (see for example, Yermack, 1996; Mak and Kusnadi, 2005. Haniffa and Hudaib, 2006; Mashayekhi and Bazaz, 2008; Guest, 2009; Florackis et al, 2009; Waleed. M, 2014).

Female board members

The coefficient on presence of females is insignificant for ROA which indicates that woman presumably not be making any significant contributions to corporate board decisions making. The results of dynamic GMM estimator show that The coefficient on presence of females is (0.425) which is greater than the coefficient size in case of static fixed effects model. The females in Pakistan are less tempted to serve as a board member especially after marriage due to domestic responsibilities and cultural environment in Pakistan. In general, the females in Pakistan not prefer to continue their jobs after marriage because of strong family system. This result is incongruent with agency theory which stat that boards with greater diversity are more independent (Jensen and Meckling, 1976). Therefore, based on this result regarding presence of non-executive directors, hypothesis H2E is accepted. This result is consistent with prior studies of Zahra and Stanton (1988) and Rose (2007). Moreover, the results of static and dynamic fixed effects also show a significant and negative association between female board members and firm performance.

Non-executive directors

The presence of non-executive directors is positively associate with ROA at 1% significance level which indicates that presence of non-executive directors increases the value of the firm and perform better than those having less percentage of NEDs. The magnitude of The coefficient on non-executive directors is (1.549) which is greater than the previous study of Aymen Ammari et al., (2014) who reported (-0.089) as coefficient of ownership.

This result support agency theory which suggests that higher proportion of non-executive directors are leading to greater monitoring by the board (Fama and Jensen, 1983). The non-executive directors are vital element of board as they monitor firm activities and play an important role in overall firms' development in more effective way. They act as a referee especially in a situation, when there is conflict between managers and shareholders. Therefore, based on this result regarding presence of non-executive directors, hypothesis H3E is accepted. This result is consistent with prier studies (see for example, Mashayekhi and Bazaz, 2008; Gupta and Fields, 2009; Jackling and Johl, 2009).

Frequency of board meeting

The frequency of board meeting is positively associate with ROA at 5% significance level which indicates that frequency of board meeting helps to improve the overall performance of the firm through continuous monitoring.

The results of dynamic GMM estimator show that The coefficient on frequency of board meeting is (0.240) which is greater than the coefficient size in case of static fixed effects model. Therefore, based on this result regarding frequency of board meeting, hypothesis H4E is accepted. This result is consistent with previous studies (see for example, Carcello et al. 2002; Karamanou and Vafeas, 2005; Mangena and Tauringana, 2006; Collins Ntim et al., 2009).

Audit Committee size

The coefficient on audit committee is positive and statistically significant at 10% level for ROA which indicates that existence of audit committee increases internal monitoring, decrease internal fraud and improve corporate governance compliances. The results of dynamic GMM estimator show that The coefficient on audit committee is (0.356) which is greater than the coefficient size in case of static fixed effects model. The static fixed effects result shows a positive and statistically significant association at 10% level for audit committee. Therefore, based on this result regarding size of audit committee, hypothesis H5E is accepted. This result is consistent with several prior studies (see for example, Spira and Bender, 2004; Petra, 2007; Khaled Abdelkader, 2014; Waleed. M, 2014).

Directors' ownership

The coefficient on director's ownership is negative and statistically significant at 10% level for ROA which indicates that presence of director's ownership has negative influence on firm performance. The results of dynamic GMM estimator show that The coefficient on director ownership is (-0.2156) which is less than the coefficient size in case of static fixed effects model. This negative association supports the argument that due to high volume of shareholding, directors may acquire more voting power to protect themselves against any disciplinary action by the other members of the board. This situation encourages managers to adopt opportunistic behaviour which affects negatively on firm financial performance. Therefore, based on this result regarding director's ownership, hypothesis H6E is rejected. This result is consistent with several prior studies such as (Ho, Williams et al., 2003; Reddy et al., 2008; Mangena and Chamisa, 2008; Collins Ntim et al., 2009; Nadeem sheikh et al. 2013).

Institutional ownership

The coefficient on institutional ownership is negative and statistically significant at 5% level for ROA which indicates that firm performance is negatively affected by institutional ownership. The results of dynamic GMM estimator show that The coefficient on institutional

ownership is (-0.2342) which is greater than the coefficient size in case of static fixed effects model. Therefore, based on this result regarding institutional ownership, hypothesis H7E is rejected. This result is consistent with the study of Xu, X. Wang, Y. (1999) who have investigated the chines listed firms and find a negative relationship between firms' profitability and institutional ownership. The static and dynamic fixed effects models also show a negative association for institutional ownership.

Associated ownership

The coefficient on associated ownership is insignificant for ROA which indicates that firm performance is not affected by associated ownership. The results of dynamic GMM estimator show that The coefficient on associated ownership is (0.3422) which is greater than the coefficient size in case of static fixed effects model. Therefore, based on this result regarding associated ownership, hypothesis H8E is rejected. This result is incongruent with the theoretical hypothesis that group of companies have capacity to acquired economies of large scale which turn positive impact on firm performance. The results of fixed effects also show insignificant association between associated ownership and firm performance.

Ownership concentration

The coefficient on ownership concentration is insignificant for ROA which indicates that firm performance is not affected by ownership concentration. The results of dynamic GMM estimator show that The coefficient on ownership concentration is (0.6745) which is greater than the coefficient size in case of static fixed effects model. This result is incongruent with agency theory which predicts that ownership concentration is one of the important mechanisms for monitoring managerial behaviour that helps to mitigate agency problems. The reason may be that the countries where regulations and legal protection is weak, ownership concentration considered one of major agency problem which is not favourable for minority shareholders. Therefore, based on this result regarding ownership concentration, hypothesis H9E is rejected. The results of static and dynamic fixed effects also show insignificant association with ownership concentration. This result is consistent with several prior studies (see for example, Demsetz and Lehn; 1985; Vefeas and Theodorou, 1998; El Mehdi, 2007; Mangena and Chamisa, 2008; Amir Shehzad et al., 2011) who document the same results.

Firm size

The coefficient on firm size is positive and statistically significant at 1% level for ROA which indicates that larger firms are more diversified, more financially stable and have positive impact on firm performance. The magnitude of The coefficient on firm size is (0.732) which is similar to previous study of Aymen Ammari et al., (2014) who also reported (7.032) as coefficient of firm size. Therefore, based on this result regarding firm size, hypothesis H10E is accepted. Moreover, larger firms have capacity to acquired economies of large scale which turns positive impact on firm performance. This result is consistent with several prior studies (see for example, Collins Ntim et al., 2009; Krishna Reddy, 2010; Weir and Laing, 2000; Bozec, 2005; Nadeem sheikh et al., 2013).

Firm age

The coefficient on firm age is insignificant for ROA which indicates that firm's age does not necessarily to have any impact on firm performance. The magnitude of The coefficient on firm age is (0.532) which is greater than the previous study of who reported (-0.115) as coefficient of firm age. Therefore, based on this result regarding firm age, hypothesis H11E is rejected. This result has rejected the theoretical hypothesis that older firms operating in industries from many years and they have well established system and procedures. Second, this result is also incongruent with concept that firm with less age are generally low credit worth and risk of instability.

Leverage

The coefficient on firm leverage is negative and statistically significant at 5% level for ROA which indicates that large amount of debt decreases firm performance. The results of dynamic GMM estimator show that The coefficient on leverage is (-0.1253) which is less than the coefficient size in case of static fixed effects model. The possible reason is that the amount of debt increases due to high cost of operation which is resulted in high rate of interest payment (Dechow et al., 1996). Moreover, the high amount of debts may limit the firm capacity to generate new credit which is resulting in losing potential investment opportunities. Therefore, based on this result regarding firm leverage, hypothesis H12E is accepted. This result is consistent with several prior studies (see for example, Dechow et al., 1996; Collins Ntim et al., 2009: Qaiser.R, 2011, Nadeem sheikh et al., 2013; Zyad M. S, 2014).

Dividend to total assets

The coefficient on dividend to total assets is insignificant for ROA which indicates that dividend to total assets do not necessarily to have any impact on firm performance. The results of dynamic GMM estimator show that The coefficient on dividend to total assets is (0.215) which is greater than the coefficient size in case of static fixed effects model. This result is rejecting the theoretical hypothesis that payment of dividend is considered by market as better utilisation of cash flow and resulted in positive impact on firm performance. The results of static fixed effects also show insignificant association.

Sale to assets

The coefficient on sale to assets is insignificant for ROA which indicates that sale to assets do not necessarily to have any impact on firm performance. The results of dynamic GMM estimator show that The coefficient on sale to assets is (0.3277) which is greater than the coefficient size in case of static fixed effects model. This leads to the hypothesis that firms are unable to optimal use of their resources which can help to improve firm efficiency and resulted in positive impact on firm performance. The results of static fixed effects also show insignificant association.

Sale growth

The coefficient on sale growth is positive and statistically significant at 1% level for ROA which indicates that on average firms with high amount of sales are more likely to have a positive impact on firm performance. The results of dynamic GMM estimator show that The coefficient on sale growth is (0.811) which is greater than the coefficient size in case of static fixed effects model. This may be due to the reason that firms with high growth of sale have sufficient funds to run the operation efficiently. The results of static fixed effects also show a significant and positive association between sale growth and firm performance. This result is consistent with prior studies results (see for example, Klapper and Love, 2004; Shabbir and Padget, 2005; Collins Ntim et al., 2009).

Cash flow to total assets

The coefficient on cash flow to total assets is negative and statistically significant at 5% level for ROA which indicates that firm is unable to efficiently collect cash from sales and debtors which is resulted in negative impact on firm performance. The results of dynamic GMM estimator show that The coefficient on cash flow to total assets is (-0.112) which is less than

the coefficient size in case of static fixed effects model. The results of static fixed effects also show significant and negative association.

8.10 Empirical results based on MB Ratio (MNC Firms)

Table 8.10 present the results which indicate the association between corporate governance and firm performance (MB Ratio) for MNC firms sample of the study. The results present as per the definitions report by system GMM estimator which indicates that dynamic endogeneity is a significant concern of the model. The results indicate that p-value of AR (2) is enough high (0.365) therefore, null hypothesis regarding instrument validity cannot be rejected. Similarly, the p-value of Hansen test is also high (1) thus, the null hypothesis that instruments as a group are exogenous cannot be rejected.

Board size

Table 8.10 shows that The coefficient on board size is insignificant with MB Ratio which indicate that firm performance is not affected by the size of board. The magnitude of The coefficient on board size is (-3.334) which is greater than the previous study of Aymen Ammari et al., (2014) who reported (-4.351) as coefficient of board size. This result is consistent with prior studies of (Hermalin and Weisbach, 1991; Ho and Williams, 2003; Mohd Ghazali, 2010; Zyad M. S, 2014). Similarly, Amir Shehzad, el al (2011) reviewed the data of 200 listed firm in Pakistan and found no significant relation between board size and firm performance.

Female board members

The coefficient on presence of females is insignificant for MB Ratio which indicates that woman presumably not be making any significant contributions to corporate board decisions making. The results of dynamic GMM estimator show that The coefficient on sale to assets is (0.0935) which is less than the coefficient size in case of static fixed effects model.

The females in Pakistan are less tempted to serve as a board member especially after marriage due to domestic responsibilities and cultural environment in Pakistan. In general, the females in Pakistan not prefer to continue their jobs after marriage because of strong family system. Therefore, based on this result regarding female board members' hypothesis H2F is accepted. This result is consistent with prior studies of Zahra and Stanton (1988) and Rose (2007) who have found insignificant relation between presence of female and firm performance. The results

of static fixed effects also show a positive and significant association with female board members.

Presence non-executive directors

The coefficient on presence of non-executive directors is positively associated with MB Ratio at 10% significance level which indicate that presence of non-executive directors increases the value of the firm and perform better than those having less percentage of NEDs. The results of dynamic GMM estimator show that The coefficient on presence of non-executive directors is (0.3108) which is greater than the coefficient size in case of static fixed effects model. This result is consistent with prier studies for example, (Pass, 2004; Mallin, 2004; Cheng and Firth, 2005; Mashayekhi and Bazaz, 2008; Jackling Gupta and Fields, 2009; Jackling and Johl, 2009) as these studies results document that presence of non-executive directors has positive impact on firm performance. The non-executive directors are vital element of board as they monitor and support firm activities and play an important role in overall firm development and leadership of the firm in more effective way.

In response of above results, the previous studies document that the non-executive directors act as a referee especially in a situation, when there is conflict between managers and shareholders. Non-executive directors monitor the activities of higher management and make accountable for their activities and strategic decision making. They also become a hurdle while CEO try to use his power for his private interest as well. Moreover, the investor feels more confidence if firm acquire the services of more numbers of non-executive directors as its associate with effective monitoring of managerial behaviour (Cheng and Firth, 2005; Pass, 2004; Gupta and Fields, 2009).

Frequency of board meeting

The coefficient on frequency of board meeting is insignificant for MB Ratio which indicates that frequent board meetings is not necessarily beneficial. Moreover, large numbers of meeting can be resulted in high cost of management in the form of managerial time, travel cost, director meeting fees and refreshment expenses. The results of dynamic GMM estimator show that The coefficient on presence of frequency of board meeting is (0.431) which is greater than the coefficient size in case of static fixed effects model.

This result is consistent with previous studies of El Mehdi (2007) and Collins Ntim et al., (2009) who document an insignificant relation between frequency of board meeting and firm performance. Therefore, based on this result regarding frequency of board meeting, hypothesis H4F is rejected.

Audit Committee size

The coefficient on audit committee is insignificant with MB Ratio which indicate that firm performance is not affected by audit committee. The results of dynamic GMM estimator show that The coefficient on audit committee is (-0.155) which is less than the coefficient size in case of static fixed effects model. This result is consistent with Beasley (1996) and Baxter (2006) who document that there is no association between audit committee and firm performance. Keong et al (2002) study revealed that audit, remuneration and nomination committees have no worth and seems like a window dressing unless they independent and have full access to monitor firm's activities.

The results of static and dynamic fixed effects model show a significant and negative association between audit committee size and MB Ratio. This coefficient sign flips (from positive and insignificant) after controlling unobserved heterogeneity, simultaneity, dynamic endogeneity, and autocorrelation through GMM estimation.

Director's ownership

The coefficient on director's ownership is insignificant and negative for MB Ratio which indicates that director's ownership is not necessarily beneficial and has no impact on firm performance. The results of dynamic GMM estimator show that The coefficient on director ownership is (-6.437) which is less than the coefficient size in case of static fixed effects model.

Therefore, based on this result regarding director's ownership, hypothesis H6F is rejected. This may be due to the reason that when the managerial ownership increase, the managers become the directors and shareholders of the firm. This situation is not positively influence on firm performance as agency theory argues that the manger and shareholders' interests are not align. This result is consistent with Florackis et al. (2009) who examines the UK listed firms for the period of (2000-2004) and finds insignificant relationship between director's ownership and firm performance.

Institutional ownership

The coefficient on institutional ownership is insignificant for MB Ratio which indicates that firm performance is not affected by institutional ownership. The results of dynamic GMM estimator show that The coefficient on institutional ownership is (12.76) which is greater than the coefficient size in case of static fixed effects model. Therefore, based on this result regarding institutional ownership hypothesis H7F is rejected. Interestingly, the static fixed effects model also shows an insignificant association between institutional ownership and MB ratio.

Associated Ownership

The coefficient on associated ownership is insignificant for MB Ratio which indicates that firm performance is not affected by associated ownership. The results of dynamic GMM estimator show that The coefficient on associated ownership is (-3.633) which is less than the coefficient size in case of static fixed effects model. Therefore, based on this result regarding associated ownership, hypothesis H8F is rejected. This result is incongruent with the theoretical hypothesis that group of companies have capacity to acquired economies of large scale which turn positive impact on firm performance.

Ownership concentration

The coefficient on ownership concentration is insignificant and negative for MB Ratio which indicates that firm performance is not affected by ownership concentration. The results of dynamic GMM estimator show that The coefficient on ownership concentration is (16.58) which is greater than the coefficient size in case of static fixed effects model. This result is incongruent with agency theory which predicts that ownership concentration is one of the important mechanisms for monitoring managerial behaviour which helps to mitigate agency problems. Therefore, based on this result regarding associated ownership, hypothesis H9F is rejected. The reason may be that the countries where regulations and legal protection is weak, ownership concentration considered one of major agency problem which is not favourable for minority shareholders. This result is consistent with several prior studies (see for example, Demsetz and Lehn; 1985; Vefeas and Theodorou, 1998; El Mehdi, 2007; Mangena and Chamisa, 2008; Amir Shehzad et al, 2011).

Firm Size

The coefficient on firm size is insignificant with MB Ratio which indicate that firm performance is not affected by firm size. The results of dynamic GMM estimator show that The coefficient on firm size is (0.445) which is greater than the coefficient size in case of static fixed effects model. This result is consistent with prior study of (Tuan Nguyen et al, 2014) who reported insignificant association between firm size and corporate performance.

Firm Age

The coefficient on firm age is positive and statistically significant at 5% level for MB Ratio which indicates that on average, older firms have positive impact on firm performance. The results of dynamic GMM estimator show that The coefficient on firm age is (0.837) which is greater than the coefficient size in case of static fixed effects model. Therefore, based on this result regarding firm age, hypothesis H11F is accepted. The positive association between age and firm performance is due to the reason that older firms operating in industries from many years and they have well established system and. The firm with larger age expected to be more mature and their managers have good external links which is resulted in association with high firm performance. This result is consistent with Krishna Reddy (2010) who documents a positive association between firm age and corporate performance.

Leverage

The coefficient on leverage is insignificant with MB Ratio which indicate that firm performance is not affected by leverage. The results of dynamic GMM estimator show that The coefficient on leverage is (0.999) which is greater than the coefficient size in case of static fixed effects model. This result is consistent with study results of Tuan Nguyen et al., (2014) who documents that leverage is insignificant with firm performance. The reason may the firm major operational cost is finance by equity.

Dividend to total assets

The coefficient on dividend to total assets is insignificant for MB Ratio which indicates that dividend to total assets do not necessarily to have any impact on firm performance. The results of dynamic GMM estimator show that The coefficient on dividend to total assets is (0.798) which is greater than the coefficient size in case of static fixed effects model. This result is rejecting the theoretical hypothesis that payment of dividend is considered by market as better utilisation of cash flow and resulted in positive impact on firm performance. The static fixed

effects model shows a statically significant and negative association at 10% and 1% level of significance. The coefficient sign flips (from negative to positive and from significant to insignificant) for dividend to MB Ratio due to controlling of dynamic effects with GMM estimation.

Sale to assets

The coefficient on sale to assets is insignificant for MB Ratio which indicates that sale to assets do not necessarily to have any impact on firm performance. The results of dynamic GMM estimator show that The coefficient on sale to assets is (2.961) which is greater than the coefficient size in case of static fixed effects model. This leads to the hypothesis that firms are unable to optimal use of their resources which can help to improve firm efficiency and have resulted in positive impact on firm performance.

Sale growth

The coefficient on sale growth is positive and statistically significant at 5% level for MB Ratio which indicates that firms with high sale growth do not necessarily be have better corporate governance performance. The results of dynamic GMM estimator show that The coefficient on sale growth is (2.384) which is less than the coefficient size in case of static fixed effects model.

Cash flow to total assets

The coefficient on cash flow to total assets is insignificant with MB Ratio which indicate that cash flow to total assets do not necessarily be have any impact on firm performance. The results of dynamic GMM estimator show that The coefficient on cash flow to total assets is (-0.499) which is less than the coefficient size in case of static fixed effects model.

8.12 Summary of Results (MNC Firms)

This chapter discusses the findings regarding the impact of corporate governance on firm performance by ROA and MB ratio for MNC firms 'sample. This study finds an issue of endogeneity and heteroscedasticity in data which leads to the application of system GMM. Therefore, system GMM is the main estimation technique of this study which results have compared with static fixed effects model to analyse that how dynamic endogeneity influence the corporate governance and firm performance relationship. Interestingly, both GMM estimators such as GMMa and GMMb have traced the existence of dynamic endogeneity across sample firms.

This study finds that corporate governance structure does matter in MNC firms of Pakistan. There are eleven corporate governance variables such as board size, NED, audit committee size, frequency of board meeting, director's ownership, institutional ownership, firm size, firm age, leverage, sale growth and cash flow to total assets appear to have a statistically significant effect on firm performance for ROA and MB ratio.

Chapter 9

Comparative analysis of Local and MNC firms

The aim of this chapter is to ascertain whether and how corporate governance practices differ across multinational and local listed firms in developing economy like Pakistan. More specifically this section compares the results of Local and MNC firms to provide better understanding of similarities and difference of multinational and local firms of Pakistan. The listed MNC firms in Pakistan are bound to compliance with Pakistan corporate governance code 2012. Moreover, the head offices of these MNC firms are in developed countries which have their own corporate governance standards. It is general perception that corporate culture of MNC in Pakistan is influenced by their country of origin. In addition, this section examines whether the impact of corporate governance on firm performance of MNC in Pakistan is better than local firms.

9.1 Comparative analysis of Local and MNC Firms-Impact of corporate governance on firm performance (ROA)

Table 9.1 presents comparative analysis of Local and MNC firms regarding impact of corporate governance on firm performance (ROA). The results present as per the definitions report by system GMM estimator which indicates that dynamic endogeneity is a significant concern of the model. The results indicate that p-value of AR (2) for both local and MNC are enough high which are (0.743) and (0.811) respectively therefore, null hypothesis regarding instrument validity cannot be rejected. Similarly, the p-value of Hansen test for Local and MNC firms are also high which is (0.865) and (0.591) respectively thus, the null hypothesis that instruments as a group are exogenous cannot be rejected.

Table 9.1 shows that board size is negatively associate with ROA at 1% significance level for MNC firms which indicates that larger board size negatively impacts on firm performance due to lack of communication. This result support the arguments of agency theory which predicts a negative association between board size and firm performance (Jensen, 1993). This result is consistent with prior studies (see for example, Yermack, 1996; Mak and Kusnadi, 2005. Haniffa and Hudaib, 2006; Mashayekhi and Bazaz, 2008; Guest, 2009; Florackis et al, 2009; Waleed. M, 2014). The result of fixed effects model shows an insignificant relationship between board size and firm performance. Notably, when dynamic endogeneity is fixed by

GMM estimator for MNC firms, the coefficient sign of board size flip from insignificant to significant. On the other hand, The coefficient on board size is insignificant with ROA in case of Fixed effects and GMM for local firms of Pakistan which is consistent with prior studies such as, (Mohd Ghazali, 2010; Amir Shehzad, el al., 2011; Zyad M. S, 2014). The fixed effects model of MNC and local firms also showed insignificant association between board size and firm performance.

The presence of non-executive directors is positively associate with ROA at 1% significance level in case of MNC firms which indicates that presence of non-executive directors increases the value of the firm and perform better than those having less percentage of NEDs. This result support agency theory which suggests that higher proportion of non-executive directors are leading to greater monitoring by the board (Fama and Jensen, 1983). This result is consistent with prier studies (see for example, Mashayekhi and Bazaz, 2008; Gupta and Fields, 2009; Jackling and Johl, 2009). The result of fixed effects model shows an insignificant relationship between NED and firm performance. On the other hand, in case of local firms The coefficient on presence of non-executive directors is insignificant for ROA which indicates that firm performance is not influence by presence of non-executive directors which is consistent with several prior studies such as, (Hermalin and Weisbach, 1991; Laing and Weir, 1999; Reddy et al. 2010).

The coefficient on frequency of board meeting is positively associated with ROA at 5% significance level for MNC firms which indicate that frequency of board meeting help to improve the overall performance of the firm through continuous monitoring and resolve corporate issue more quickly. This result is consistent with previous studies like, (Carcello et al. 2002; Karamanou and Vafeas, 2005; Mangena and Tauringana, 2006; Collins Ntim et al., 2009). The result of fixed effects model shows an insignificant relationship between board meeting and firm performance. On the other hand, The coefficient on frequency of board meeting is insignificant with ROA for local firms which indicate that frequent board meetings are not necessarily beneficial. Second, more numbers of meeting can result in high cost of management in the form of managerial time, travel cost, director meeting fees and refreshment expenses. This result is consistent with previous studies such as, (El Mehdi, 2007; Collins Ntim et al., 2009). The result of fixed effects model for local firms also shows an insignificant relationship between board meeting and firm performance.

The coefficient on audit committee is positive and statistically significant at 10% level with ROA in case of MNC firms which indicate that that existence of audit committee increases internal monitoring, decrease internal fraud and improve corporate governance compliances. The result of fixed effects model also shows positive relationship between audit committee and firm performance at 5% level of significance. This result is consistent with several prior studies (see for example, Spira and Bender, 2004; Petra, 2007; Khaled Abdelkader, 2014; Waleed. M, 2014). On the other hand, The coefficient on audit committee is insignificant for ROA in case of local firms which indicates that firm performance is not affected by audit committee. This result is consistent with Beasley (1996) and Baxter (2006) who document that there is no association between audit committee and firm performance.

The coefficient on director's ownership is negative and statistically significant at 10% level with ROA for both MNC and local firms which indicates that presence of director's ownership has negative influence on firm performance. This negative association supports the argument that due to high volume of shareholding, directors may acquire more voting power to protect themselves against any disciplinary action by the other members of the board. This result is consistent with several prior studies such as (Ho, Williams et al., 2003; Reddy et al., 2008; Mangena and Chamisa, 2008; Collins Ntim et al., 2009; Nadeem sheikh et al. 2013). Moreover, the result of fixed effects model for MNC and local firms show an insignificant relationship between director ownership and firm performance.

The coefficient on institutional ownership is negative and statistically significant at 5% level for ROA which indicates that firm performance is negatively affected by institutional ownership for MNC firms. This result is consistent with the study of Xu, X. Wang, Y. (1999) who have investigated the chines listed firms and find a negative relationship between firms' profitability and institutional ownership. The result of fixed effects model shows an insignificant relationship between institutional ownership and firm performance. On the other hand, The coefficient on institutional ownership is insignificant for ROA in case of local firms for both fixed effects and GMM estimator which indicates that firm performance is not affected by institutional ownership.

The coefficient on associated ownership is positive and statistically significant at 5% level for ROA in case of MNC firms which indicate that associated ownership has positive influence on firm performance. The group of companies are more diversified, more financially stable and have positive impact on firm performance. Moreover, the result of fixed effects model shows

an insignificant relationship between associated ownership and firm performance. On the other hand, in case of local firm the fixed effects and GMM results show an insignificant relationship between associated ownership and firm performance.

The coefficient on ownership concentration is positive and statistically significant at 5% level for ROA in case of local firms which indicates that presence of ownership concentration has positive influence on firm performance as skilled block holders help to improve local firm performance. This result support the arguments of Agency theory which predicts that ownership concentration is one of the important mechanisms for monitoring managerial behaviour which helps to mitigate agency problems. This result is consistent with several previous studies (see for example, Wiwattanakantang, 2001; Gedajlovic, Shaprio, 2002; Denis and McConnell, 2003; Fernandez, Gomez-Anson, 2006; Ehikioya, 2009; Becker et al., 2011; Tuan Nguyen et al., 2014; Zyad M. S 2014). Moreover, the result of fixed effects model shows an insignificant relationship between ownership concentration and firm performance. On the other hand, in case of MNC firms The coefficient on ownership concentration is insignificant for ROA which indicates that firm performance is not affected by ownership concentration. This result is consistent with several prior studies (see for example, Demsetz and Lehn; 1985; Vefeas and Theodorou, 1998; El Mehdi, 2007; Mangena and Chamisa, 2008; Amir Shehzad et al., 2011) who document the same results.

The coefficient on firm size is positive and statistically significant at 1% level for ROA in case of MNC firms which indicates that larger firms are more diversified, more financially stable and have positive impact on performance. This result is consistent with several prior studies (see for example, Weir and Laing, 2000; Bozec, 2005; Collins Ntim et al., 2009; Krishna Reddy, 2010; Nadeem sheikh et al., 2013). Moreover, the result of fixed effects model shows an insignificant relationship between firm size and firm performance. On the other hand, in case of local firms The coefficient on firm size is insignificant for ROA in both model e.g. fixed effects and GMM which indicates that firm performance is not affected by size as the sample firms have not effective control and monitoring mechanism due to large volume which may impact insignificantly on their performance. This result is consistent with prior study of (Tuan Nguyen et al, 2014) who reports insignificant association between firm size and corporate performance.

The coefficient on firm leverage is negative and statistically significant at 5% level for ROA in case of MNC firms which indicates that large amount of debt decreases performance. The

possible reason is that the amount of debt increases due to high cost of operation which is resulted in high rate of interest payment (Dechowetal, 1996). This result is consistent with several prior studies (see for example, Collins Ntim et al., 2009: Qaiser.R, 2011, Nadeem sheikh et al., 2013; Zyad M. S, 2014). Moreover, the result of fixed effects model shows an insignificant relationship between leverage and firm performance. Whereas, in case of local firms The coefficient on leverage is insignificant for ROA which indicates that firm performance is not affected by leverage. The possible reason may be that the major operational cost of the firm is finance by equity. This result is consistent with study results of (Tuan Nguyen et al., 2014) who documents that leverage is insignificant with firm performance. Moreover, the result of fixed effects model of local firms shows an insignificant relationship between leverage and firm performance.

The coefficient on sale growth is positive and statistically significant at 1% level for ROA in case of MNC firms which indicates that on average firms with high amount of sales are more likely to have a positive impact on firm performance. This may be due to the reason that firms with high growth of sale have sufficient funds to run the operation efficiently. This result is consistent with prior studies results (see for example, Klapper and Love, 2004; Shabbir and Padget, 2005; Collins Ntim et al., 2009). Moreover, the result of fixed effects model also shows a positive and significant relationship between sale growth and firm performance. On the other hand, The coefficient on sale growth is insignificant for ROA in case of local firms which indicates that firms with high sale growth do not necessarily to have any impact on firm performance.

The coefficient on cash flow to total assets is negative and statistically significant at 5% level for ROA which indicates that firm is unable to efficiently collect cash from sales and debtors which is resulted in negative impact on performance of MNC firms. Moreover, the result of fixed effects model shows an insignificant relationship between cash flow to total assets and firm performance. On the other hand, in case of local firms The coefficient on cash flow to total assets is insignificant for ROA which indicates that cash flow to total asset do not necessarily to have any impact on performance of local firms.

The results showed that in case of local firms the variables such as, board size, female, NED, board meeting, audit committee size, institutional ownership, firm size, firm age, leverage, dividend to total assets, sale to assets, sale growth and cashflow to total assets are insignificant with firm performance (ROA). On the other hand, in case of MNC firms the variable such as,

female, associated ownership, ownership concentration, firm age, dividend to total assets and sale to assets are insignificant with firm performance (ROA).

9.2 Comparative analysis of Local and MNC Firms-Impact of corporate governance on firm performance (MB Ratio)

Table 9.2 presents comparative analysis of Local and MNC firms regarding impact of corporate governance on firm performance (MB Ratio). The results present as per the definitions report by system GMM estimator which indicates that dynamic endogeneity is a significant concern of the model. The results indicate that p-value of AR (2) for both local and MNC are enough high which are (0.820) and (0.365) respectively therefore, null hypothesis regarding instrument validity cannot be rejected. Similarly, the p-value of Hansen test for Local and MNC firms are also high which is (0.976) and (1) respectively thus, the null hypothesis that instruments as a group are exogenous cannot be rejected.

Table 9.2 shows that board size is positively associate with MB Ratio at 1% significance level for Local firms which indicates large board size is positively impact firm financial performance and shareholders' value generation. These phenomena can be better defined by resource dependence theory which suggests that the large board size with high level of links to external environment enhances the firm access to more resources which impact positively on firm performance. This result is consistent with study results of Nadeem A sheikh et al. (2013) who study the data of 154 Pakistani firm for the period of 2004-2008 and found a positive association between board size and firm performance measure by ROA and MB ratio.

On the other hand, in case of MNC firms The coefficient on board size is insignificant for MB Ratio which indicates that firm performance is not affected by the size of board. This result is not consistent with agency and resource dependence theory as agency theory predicts a negative association between board size and firm performance and resource dependence theory suggests a positive association (see for example, Jensen, 1993 and Dalton et al., 1999). This result is consistent with prior studies such as (Hermalin and Weisbach, 1991; Ho and Williams, 2003; Mohd Ghazali, 2010; Amir Shehzad, el al., 2011; Zyad M. S, 2014).

The coefficient on frequency of non-executive director is positively associated with MB Ratio at 10% significance level for MNC firms which indicate that presence of non-executive directors increases the value of the firm and perform better than those having less percentage of NEDs. This result is consistent with prier studies for example, (Pass, 2004; Mallin, 2004; Cheng and Firth, 2005; Mashayekhi and Bazaz, 2008; Jackling and Johl, 2009; Gupta and Fields, 2009) whose study results document that presence of non-executive directors has positive impact on firm performance. The non-executive directors are vital element of board as they monitor and support firm activities and play an important role in overall firm development and leadership of the firm in more effective way. In case of local firms there is insignificant relationship between non-executive director and MB Ratio.

The associated ownership is positive and statistically significant at 5% level for MB Ratio in case of local firms which indicate that associated ownership has positive influence on firm performance. On the other hand, in case of MNC firms the results show an insignificant relationship between associated ownership and firm performance.

The coefficient on firm age is positive and statistically significant at 10% level for MB Ratio in case of MNC firms which indicates that on average, older firms have positive impact on firm performance. This result is consistent with Krishna Reddy (2010) who documents a positive association between firm age and corporate performance. Moreover, the result of fixed effects model shows insignificant relationship between firm age and firm performance (MB Ratio). On the other hand, in case of local firms The coefficient on firm age is insignificant for MB Ratio which indicates that the firm's age does not necessarily to have any impact on firm performance.

The coefficient on sale growth is positive and statistically significant at 5% level for MB Ratio in case of MNC firms which indicates that firms with high sale growth have better corporate governance performance. On the other hand, in case of local firm, The coefficient on sale growth is insignificant for MB Ratio which indicates that firms with high sale growth do not necessarily to have any impact on firm performance. The results show that in case of local firms all variables except board size are insignificant with firm performance (MB Ratio). On the other hand, in case of MNC firms the variable such as NED, firm age and sale growth are insignificant with firm performance (MB Ratio).

9.3 Summary of Results

This study concludes that impact of corporate governance on firm performance is differs across local and MNC firms of Pakistan. The results of comparative analysis of local and MNC firms indicate that the relationship between corporate governance and firm performance of MNC firms are more significant as compared to local firms. More specifically Impact of corporate governance of MNC firms is more effective as compared to local firms in Pakistan. This study finds that MNC firms in Pakistan have high standards of governance as they are financially sound and belong to developed countries which impact positively on their performance. Moreover, most of MNC are part of top 100 index firms of Pakistan stock exchange which is an ample evidence of their financial worth. This study results further conclude that high financial worth, strong corporate culture and country of origin do impact on performance of MNC firms in Pakistan.

Therefore, MNC firms in Pakistan have better corporate governance practice as compared to local Pakistani firms. Thus, this study suggests that financial worth, well established internal corporate culture and country of origin are the determinants of better corporate governance. This is a unique contribution to existing literature because as per researcher best knowledge, there is no previous study which has conducted a comparative analysis of MNC firms with local firms.

Chapter 10

Impact of corporate governance on firm performance during different economic periods

10.1 Introduction

The global financial crisis emerged in 2008 because of US subprime mortgage crisis and considered to be the worst since great depression of 1930. The global financial crisis have a severe effect on growth and development of both developed and developing countries after the failure of Lehman Brothers, Bears Stearns etc. The global financial crisis impacts the undeveloped countries mainly through the trade, investment, remittance and foreign aid. The impact of crisis varied across countries depending upon the level of their integration with world market.

Pakistan also suffered due to macro-economic imbalances resulted from global financial crisis of 2008. As per state Bank of Pakistan the GDP growth rate declined from 4.99% in 2008 to 0.36 % in 2009 and last up to 3.68% till 2013 (Trading economics USA). The government fiscal and current account balance goes down to its lowest level 7.4 % and 8.4% respectively. The foreign direct investment reached to the $3720 million in 2009 as compared to $5410 million in 2008. During the period of 2009 to 2013 the problems of energy shortages also negatively impact the rate of investment, growth and GDP of Pakistan. (State bank of Pakistan report, 2013)

Musleh-ud-Din et al. (2009) has investigated the impact of global crisis on Pakistan and reports that Pakistan lost 3 million jobs in different sectors of the economy during financial crisis of 2009. Usman (2010) validate the results of earlier studies and reveal that global crisis accompanied high commodity prices and unemployment in Pakistan.

This study investigates the impact of corporate governance on firm performance during different economic periods. The main aim is to determine whether and how corporate governance impact differently in different economic period? This is unique contribution to existing literature as there is no previous study which determine the impact of corporate governance in different economic period. In order to achieve research objectives, this study divided the sample in to two periods such as, pre-crisis period (2003-2008) and during crisis

period (2009-2013). This study evaluates that how corporate governance impact in different economic periods.

10.2 Impact of corporate governance on firm performance (ROA) in different economic periods (Full sample)

Table 10.2 presents the impact of corporate governance on firm performance (ROA) in different economic period such as pre-financial crisis and during financial crisis period for the full sample of the study. The results present as per the definitions report by system GMM estimator which indicates that dynamic endogeneity is a significant concern of the model. Interestingly, GMM estimators in both economic periods have traced the existence of dynamic endogeneity across sample firms and deem to be more appropriate model which validate the value of J-statistics (health of instrument) and fix the problem of autocorrelation, simultaneity and over-identification restrictions.

Table 10.2 indicates that during pre-crisis the p-value of AR (2) is enough high (0.525) therefore, null hypothesis regarding instrument validity cannot be rejected. Similarly, the p-value of Hansen test is also high (0.457) thus, the null hypothesis that instruments as a group are exogenous cannot be rejected. Whereas, during financial crisis period the p-value of AR (2) is enough high (0.539) therefore, null hypothesis regarding instruments validity cannot be rejected as they are not correlated to the error term. Similarly, the p-value of Hansen test is also high (0.929) thus, the null hypothesis that instruments as a group are exogenous cannot be rejected. The column 4 of table 10.2 shows that the presence of non-executive directors is positively associates with ROA at 5% significance level in pre-financial crisis period. This positive association indicates that presence of non-executive directors increases the value of the firm and perform better than those having less percentage of NEDs. The non-executive directors are vital element of board as they monitor firm activities and play an important role in overall firms' development in more effective way. This result is consistent with prier studies (see for example, Mallin, 2004; Cheng and Firth, 2005; Mashayekhi and Bazaz, 2008; Jackling and Johl, 2009; Gupta and Fields, 2009). Whereas, during financial crisis period there is insignificant association between non-executive directors and firm performance. Therefore, during financial crisis, the impact of corporate governance on firm performance is not significant in case of full sample of this study.

The coefficient on frequency of board meeting is insignificant for ROA in both periods such as pre-crisis period and during crisis period which indicates that frequent board meetings is not necessarily beneficial. Second, more numbers of meeting can be resulted in high cost of management in the form of managerial time, travel cost, director meeting fees and refreshment expenses. This result is consistent with previous studies of El Mehdi (2007) and Collins Ntim et al., (2009).

The coefficient on director's ownership is negative and statistically significant at 1% level for ROA in pre-crisis period which indicates that presence of director's ownership has negative influence on firm performance. This negative association supports the argument that due to high volume of shareholding, directors may acquire more voting power to protect themselves against any disciplinary action by the other members of the board. This situation encourages managers to adopt opportunistic behaviour which effects negatively on firm financial performance. This result is consistent with several prior studies (see for example, Ho, Williams et al., 2003; Reddy et al., 2008; Mangena and Chamisa, 2008; Collins Ntim et al., 2009).

During crisis period, The coefficient on director's ownership is insignificant for ROA which indicates that director's ownership is not necessarily beneficial and has no impact on firm performance. This may be due to the reason that when the managerial ownership increase, the managers become the directors and shareholders of the firm. This situation is not positively influence on firm performance as agency theory argues that the manger and shareholders' interests are not align. This result is consistent with Florackis et al. (2009) who examines the UK listed firms for the period of 2000-2004 and find insignificant relationship between director's ownership and firm performance.

The coefficient on institutional ownership is positive and statistically significant at 1% level for ROA during pre-crisis period which indicates that firm performance is higher when institutional owners have higher percentage of shareholding. Generally institutional shareholder has great capacity and incentive to monitor managerial operation which impact positively on firm financial performance. This result is consistent with several prior studies who report a positive association between institutional ownership (see for example, Huskisson, 1990; Stewart, 1993; Schwalbach, 1997; Baysinger, Gomez-Mejia, 1998; Millar, J. A., 1998). During financial crisis period, The coefficient on institutional ownership is insignificant for ROA which indicates that firm performance is not affected by institutional ownership.

The coefficient on associated ownership is insignificant for ROA during pre-crisis period which indicates that firm performance is not affected by associated ownership. This result is incongruent with the theoretical hypothesis that group of companies have capacity to acquired economies of large scale which turn positive impact on firm performance. Whereas, during crisis period The coefficient on associated ownership is positive and statistically significant at 5% level for ROA which indicates that associated ownership has positive influence on firm performance as the group of companies are more diversified, more financially stable and have positive impact on firm performance. This is unique variable which has introduced by this study as a part of corporate governance mechanism to determine its impact on firm performance.

The results of dynamic fixed effect model show that coefficient of associated ownership for ROA is negative and significant in case of both period such as pre-crisis period and during crisis period whereas in case of GMM estimator its shows insignificant impact on firm performance. The coefficient on firm size is insignificant for ROA, in both period which indicates that firm performance is not affected by size as the sample firms have not effective control and monitoring mechanism due to large volume which may impact insignificantly on their performance. This result is consistent with prior study of (Tuan Nguyen et al, 2014) who reports insignificant association between firm size and corporate performance.

The coefficient on firm leverage is negative and statistically significant at 5% level for ROA in case of pre-crisis period which indicates that large amount of debt decreases firm performance. The possible reason is that the amount of debt increases due to high cost of operation which is resulted in high rate of interest payment (Dechow et al., 1996). Moreover, the high amount of debts may limit the firm capacity to generate new credit which is resulting in losing potential investment opportunities. This result is consistent with several prior (see for example, Dechow et al., 1996; Collins Ntim et al., 2009: Qaiser.R, 2011, Zyad M. S, 2014). During crisis period, The coefficient on firm leverage is positive and statistically significant at 10% level for ROA which indicates that large amount of debt increases firm performance. The reason may be due to low rate of interest, the optimal cost of operation and the amount of debt decrease which is resulted in low rate of interest payment.

Moreover, the variables such as board size, female, size of audit committee, ownership concentration, firm age, dividend to total assets, sale to assets, sale growth and cash flow to total assets are insignificant in both economic periods for the full sample of study.

10.3 Impact of corporate governance on firm performance (MB Ratio) in different economic periods (Full sample)

Table 10.3 presents the impact of corporate governance on firm performance (MB ratio) in different economic period such as pre-financial crisis and during financial crisis period for the full sample of the study. Columns 2-3 presents fixed effects and GMM results for pre-crisis period whereas, columns 4-5 present the results of fixed effects and GMM during crisis period. Table 10.3 indicates that during pre-crisis the p-value of AR (2) is enough high (0.533) therefore, null hypothesis regarding instruments validity cannot be rejected such as they are not correlated to the error term. Similarly, the p-value of Hansen test is also high (0.998) thus, the null hypothesis that instruments as a group are exogenous cannot be rejected. Whereas, during financial crisis period the p-value of AR (2) is enough high (0.955) therefore, null hypothesis regarding instrument validity cannot be rejected. Similarly, the p-value of Hansen test is also high (0.902) thus, the null hypothesis that instruments as a group are exogenous cannot be rejected.

Table 10.3 shows that The coefficient on audit committee is insignificant for MB ratio during in both periods which indicates that firm performance is not affected by audit committee. This result is consistent with Beasley (1996) and Baxter (2006) who document that there is no association between audit committee and firm performance. Keong et al (2002) study reveals that audit, remuneration and nomination committees have no worth and deem like a window dressing unless they independent and have full access to monitor firm's activities.

The coefficient on director's ownership is positive and statistically significant at 10% level for MB ratio during pre-crisis period which indicates that presence of director's ownership has positive influence on firm performance as it helps to align the interest of managers and shareholders. This may be due the fact that when the managerial ownership increase, the managers become the directors and shareholders of the firm, then better firm performance is expected as the manger and shareholders' interests become more align. This result is consistent with several prior studies such as, (Mangena and Tauringana, 2008; Krishna Reddy, 2010; Park and Jang, 2010; Zyad M. S, 2014; Waleed. M, 2014).

During financial crisis period, The coefficient on director's ownership is insignificant for MB ratio which indicates that director's ownership is not necessarily beneficial and has no impact on firm performance. This may be due to the reason that when the managerial ownership increase, the managers become the directors and shareholders of the firm. This situation is not positively influence on firm performance as agency theory argues that the manger and shareholders' interests are not align. This result is consistent with previous study of Florackis et al. (2009). The coefficient on associated ownership is positive and statistically significant at 10% level for MB ratio during pre-crisis period. This indicates that associated ownership has positive influence on firm performance as the group of companies are more diversified, more financially stable and have positive impact on firm performance. Moreover, group of companies have capacity to acquired economies of large scale which turn positive impact on firm performance. Whereas, during crisis period The coefficient on associated ownership is insignificant for MB ratio which indicates that firms' performance has not affected by associated ownership.

The coefficient on firm size is negative and statistically significant at 10% level for MB ratio during pre-crisis period which indicates that large firm size is not an effective control and monitoring mechanism due to large volume which may impact negatively on firm performance. Moreover, investors perceive small firms as better performer than large firms (Haniffa and Hudaib, 2006).

On the other hand, during financial crisis period The coefficient on firm size is insignificant for MB ratio which indicates that firm performance is not affected by size as the sample firms have not effective control and monitoring mechanism due to large volume which may impact insignificantly on their performance. This result is consistent with prior study of (Tuan Nguyen et al, 2014) who reports insignificant association between firm size and corporate performance. The coefficient on leverage is insignificant for MB ratio which indicates that firm performance is not affected by leverage in pre-crisis and during pre-crisis period. The reason may be that the firm major operational cost is finance by equity. This result is consistent with study of (Tuan Nguyen et al., 2014) who documents that leverage is insignificant with firm performance.

On the other hand, The coefficient on leverage is positive and statistically significant at 1% level for MB ratio during crisis period in case of dynamic fixed effects estimator which indicates that large amount of debt increases firm performance. The reason may be due to low

rate of interest, the optimal cost of operation and the amount of debt decrease which is resulted in low rate of interest payment.

Moreover, the variables such as board size, female, NED, board meeting, institution ownership, ownership concentration, firm age, sale to assets, dividend to total assets, sale to assets, sale growth and cash flow to total assets are insignificant in both economic periods for the full sample of study.

10.5 Summary of results

Table 10.2 shows that coefficient of various explanatory variables such as NED's, director ownership, institutional ownership and leverage are significant for ROA during pre-crisis period (stable economic conditions) but these variables are insignificant during crisis period. Whereas during crisis the impact of corporate governance behave differently for example, frequency of board meeting, associated ownership, firm size and leverage have positive and significant impact on firm performance (ROA). Interestingly, these variables are not significant during pre-crisis period which reveal that corporate governance impact is different during crisis period. The positive and significant coefficient of board meeting indicates that during crisis period, the directors have more frequent meetings to address the challenge of crisis period. The positive coefficient of associated ownership indicates that during crisis period group of companies have tendency to acquired economies of large scale which resulted in positive impact on firm performance to overcome the problems arises during crisis period. Similarly, the positive coefficient of firm size indicates that large firms are more diversified, more financially stable and can survive during financial crisis and have positive impact on firm performance. The coefficient on leverage is positive which possible reason is that due to low rate of interest, the optimal cost of operation and the amount of debt decrease which is resulted in low rate of interest payment.

Table 10.3 shows that coefficient of various explanatory variables such as director ownership, associated ownership and firm size are significant for MB Ratio in pre-crisis period. These variables are not significant during crisis period which indicates that corporate governance impact differently in crisis period. On the other hand, during crisis period audit committee size and leverage show a significant and positive association with MB Ratio.

Overall, the results show that impact of corporate governance on firm performance in pre-crisis period (2003-2008) is more significant as compared to crisis periods (2009-2013). Therefore,

the relationship between corporate governance and firm performance is more effective during stable economic conditions (2003-2008) and less effective during financial crisis period (2009-2013). Thus, this study suggests that stable economic conditions are one of the determinants of better corporate governance.

10.6 Impact of corporate governance on firm performance (ROA) in different economic periods (Local firms' sample)

Table 10.6 presents the impact of corporate governance on firm performance (ROA) in different economic period such as pre-financial crisis and during financial crisis period for the local firms' sample of the study.

The results indicate that during pre-crisis the p-value of AR (2) is enough high (0.949) therefore, null hypothesis regarding instrument validity cannot be rejected. Similarly, the p-value of Hansen test is also high (0.985) thus, the null hypothesis that instruments as a group are exogenous cannot be rejected. Whereas, during financial crisis period the p-value of AR (2) is enough high (0.336) therefore, null hypothesis regarding instrument validity cannot be rejected. Similarly, the p-value of Hansen test is also high (0.979) thus, the null hypothesis that instruments as a group are exogenous cannot be rejected. Table 10.6 shows that The coefficient on board size is insignificant for ROA during pre-crisis which indicates that firm performance is not affected by the size of board. This result is consistent with prior studies of (Hermalin and Weisbach, 1991; Ho and Williams, 2003; Mohd Ghazali, 2010; Zyad M. S, 2014).

In contrast, the board size is negatively associated with ROA at 10% significance level during crisis period. This indicates that larger board size negatively impacts on firm performance due to lack of communication. Moreover, the larger board size has less chances to coordinate effectively between shareholders and board member. This result is consistent with prior studies (see for example, Yermack, 1996; Mak and Kusnadi, 2005; Haniffa and Hudaib, 2006; Mashayekhi and Bazaz, 2008; Guest, 2009; Florackis et al, 2009; Waleed. M, 2014). The presence of non-executive directors is positively associate with ROA during pre-crisis period at 10% significance level which indicates that the non-executive directors are vital element of board as they monitor firm activities and play a key role in overall firms' development in more effective way. In contrast, the presence of non-executive directors is positively associate with ROA at 10% significance level during crisis period. This indicates that presence of non-executive directors increases the value of the firm and perform better than those having less percentage of NEDs.

This result is consistent with prier studies such as, (Mallin, 2004; Cheng and Firth, 2005; Mashayekhi and Bazaz, 2008; Jackling and Johl, 2009; Gupta and Fields, 2009). These studies result document that presence of non-executive directors have positive impact on firm performance. The coefficient on audit committee is insignificant for ROA in pre-crisis period which indicates that firm performance is not affected by audit committee size. This result is consistent with Beasley (1996) and Baxter (2006) who document that there is no association between audit committee and firm performance. In contrast, during crisis period The coefficient on audit committee size is positive and statistically significant at 10% level for ROA which indicates that existence of audit committee increases internal monitoring, decrease internal fraud and improve corporate governance compliances. This result is consistent with several prior studies (see for example, Spira and Bender, 2004; Petra, 2007; Khaled Abdelkader, 2014; Waleed. M, 2014).

The coefficient on director's ownership is positive and statistically significant at 10% level for ROA during pre-crisis period which indicates that presence of director's ownership has positive influence on firm performance as it helps to align the interest of managers and shareholders. This may be due the fact that when the managerial ownership increase, the managers become the directors and shareholders of the firm, then better firm performance is expected as the manger and shareholders' interests become more align. This result is consistent with several prior studies such as (Mangena and Tauringana, 2008; Krishna Reddy, 2010; Park and Jang, 2010; Zyad M. S, 2014; Waleed. M, 2014). In contrast, The coefficient on director's ownership is insignificant for ROA during crisis period which indicates that director ownership is not necessarily beneficial and has no impact on firm performance. This result is consistent with previous study of Florackis et al., (2009) who examines the UK listed firms for the period of (2000-2004) and find insignificant relationship between director's ownership and firm performance.

The coefficient on associated ownership is positive and statistically significant at 10% level for ROA during pre-crisis period. This indicates that associated ownership has positive influence on firm performance as the group of companies are more diversified, more financially stable and have positive impact on firm performance. During crisis period, The coefficient on associated ownership is insignificant for ROA which indicates that firm performance is not affected by associated ownership.

The coefficient on ownership concentration is negative and statistically significant at 10% level for ROA, during pre-crisis period which indicates that presence of ownership concentration has negative influence on firm performance. Whereas, The coefficient on ownership concentration is positive and statistically significant at 10% level for ROA during crisis period. This indicates that presence of ownership concentration has positive influence on firm performance as skilled block holders help to improve firm performance. This result is consistent with several previous studies such as (Fernandez, Gomez-Anson, 2006; Ehikioya, 2009; Becker et al., 2011; Tuan Nguyen et al., 2014; Zyad M. S 2014).

The coefficient on firm size is insignificant for ROA during pre-crisis period which indicates that firm performance is not affected by size as the sample firms have not effective control and monitoring mechanism. This because of large volume which may impact insignificantly on their performance. This result is consistent with prior study of (Tuan Nguyen et al, 2014) who reports insignificant association between firm size and corporate performance.

In contrast, The coefficient on firm size is positive and statistically significant at 10% level for ROA which indicates that larger firms are more diversified, more financially stable and have positive impact on firm performance. This result is consistent with several prior studies (see for example, Bozec, 2005; Collins Ntim et al., 2009; Krishna Reddy, 2010; Weir and Laing, 2000). Moreover, the variables such as female, board meeting, institution ownership, firm age, leverage, dividend to total assets, sale to assets, sale growth and cash flow to total assets are insignificant in both economic periods for the local firm's sample of study.

10.7 Impact of corporate governance on firm performance (MB Ratio) in different economic periods (Local firms' sample)

Table 10.7 presents the impact of corporate governance on firm performance (MB Ratio) in different economic period such as pre-financial crisis and during financial crisis period for the local firms' sample of the study

Table 9.7 indicates that during pre-crisis the p-value of AR (2) is enough high (0.676) therefore, null hypothesis regarding instrument validity cannot be rejected. Similarly, the p-value of Hansen test is also high (0.965) thus, the null hypothesis that instruments as a group are exogenous cannot be rejected. Whereas, during financial crisis period the p-value of AR (2) is enough high (0.751) therefore, null hypothesis regarding instrument validity cannot be rejected. Similarly, the p-value of Hansen test is also high (0.739) thus, the null hypothesis that instruments as a group are exogenous cannot be rejected.

Table 9.7 shows that The coefficient on frequency of board meeting is positively associate with MB ratio at 5% significance level during pre-crisis period. This indicate that frequency of board meeting helps to improve the overall performance of the firm through effective communication and continuous monitoring. This result is consistent with previous studies (see for example, Carcello et al. 2002; Karamanou and Vafeas, 2005; Mangena and Tauringana, 2006; Collins Ntim et al., 2009).

During crisis period, The coefficient on frequency of board meeting is insignificant for MB ratio which indicates that frequent board meetings is not necessarily beneficial. Second, more numbers of meeting can be resulted in high cost of management in the form of managerial time, travel cost, director meeting fees and refreshment expenses. This result is consistent with previous studies of El Mehdi (2007) and Collins Ntim et al., (2009) who document the insignificant relation between frequency of board meeting and firm performance.

The coefficient on ownership concentration is insignificant for MB ratio during pre-crisis period which indicates that firm performance is not affected by ownership concentration. This result is consistent with several prior studies (see for example, Demsetz and Lehn; 1985; Vefeas and Theodorou, 1998; 2008 El Mehdi, 2007; Mangena and Chamisa, 2008).

During crisis period, The coefficient on ownership concentration is negative and statistically significant at 1% level for MB ratio which indicates that presence of ownership concentration has negative influenced on firm performance. This result is consistent with previous studies such as (Stulz, 1988; McConnell and Servaes, 1999; Morck et al., 2001; Lehmann and Weigand, 2000; Haniffa and Hudaib, 2006; Bjuggren, et al, 2007).

The coefficient on firm leverage is negative and statistically significant at 10% level for MB ratio during pre-crisis which indicates that large amount of debt decreases firm performance. The possible reason is that the amount of debt increases due to high cost of operation which is resulted in high rate of interest payment. Second, the high amount of debts may limit the firm capacity to generate new credit which is resulting in losing potential investment opportunities. This result is consistent with several prior studies (see for example, Dechow et al., 1996; Collins Ntim et al., 2009: Qaiser.R, 2011, Zyad M. S, 2014). The negative association between leverage and performance indicates that high profitable firm tend to use less debt than equity as the equity give more financial flexibility to managers. (Shabbir and Padget, 2005).

During crisis period, The coefficient on leverage is insignificant for MB ratio which indicates that firm performance is not affected by leverage. The reason may be that the firm major operational cost is finance by equity. Therefore, based on this result regarding leverage, hypothesis H10 is rejected. This result is consistent with study results of (Tuan Nguyen et al., 2014) who documents that leverage is insignificant with firm performance.

10.9 Summary of results

Table 10.6 shows that The coefficient on various explanatory variables such as director ownership, associated ownership and ownership concentration are significant for ROA in pre-crisis period. Whereas, these variables have insignificant relationship during crisis period except ownership concentration which coefficient sign flips from negative to positive. In contrast, during crisis period the results are different as compared to pre-crisis period. For example, variables like board size, NED audit committee size, associated ownership, ownership concentration and firm size have significant impact on firm performance (ROA). Interestingly, these variables are not significant during pre-crisis period except associated ownership which reveal that corporate governance impact is different in crisis periods.

The negative and significant coefficient of board size for ROA in table 9.6 indicates that during crisis period mostly firms prefer small board size due to certain disadvantages. These disadvantages are ability to control management, lack of effective communication and delays in decision making. The presence of non-executive directors is positively associate with ROA during crisis period at 10% significance level which indicates the non-executive directors perform a vital role by monitoring and support firm activities to overcome the impact of financial crisis. Similarly, during crisis period The coefficient on audit committee size is positive and statistically significant at 10% level for ROA which indicates that firms tend to prefer a bigger size of audit committee for better internal monitoring and decrease to the internal fraud. Whereas, The coefficient on ownership concentration is positive and statistically significant for ROA during crisis period which indicates that presence of ownership concentration has positive influence on firm performance as skilled block holders help to improve firm performance. The coefficient on firm size is positive and statistically significant for ROA which indicates that larger firms are more diversified, more financially stable and have capacity to survive during financial crisis period.

Table 10.7 shows that The coefficient on board meeting and leverage are significant for MB Ratio in pre-crisis period. These variables are no more remain significant during crisis period

which indicates that corporate governance impact differently in crisis period. On the other hand, during crisis period The coefficient on ownership concentrations is negative and significant which indicates that due to weak regulations and legal protection, ownership concentration considered one of major agency problem which is not favourable for minority shareholders.

Overall, these results show that corporate governance of local firms' sample impact differently in different economic periods; pre-crisis period (2003-2008), during crisis period (2009-2013). The results show that impact of corporate governance on firm performance in pre-crisis period (2003-2008) is more significant as compared to crisis periods (2009-2013). Therefore, corporate governance mechanism impact more effectively on firm performance during stable economic conditions and less effective during financial crisis period. Thus, this study suggest that stable economic conditions are one of the determinants of better corporate governance. In conclusion, the impact of corporate governance in different economic periods are not similar.

10.10 Impact of corporate governance on firm performance (ROA) in different economic periods (MNC firms' sample)

Table 10.10 presents the impact of corporate governance on firm performance (ROA) in different economic period for MNC firms' sample. Columns 2-3 presents fixed effects and GMM results for pre-crisis period whereas, columns 4-5 present the results of dynamic fixed effects and GMM during crisis period.

Table 10.10 indicates that during pre-crisis period the p-value of AR (2) is enough high (0.498) therefore, null hypothesis regarding instrument validity cannot be rejected. Similarly, the p-value of Hansen test is also high (1) thus, the null hypothesis that instruments as a group are exogenous cannot be rejected. Whereas, during financial crisis period the p-value of AR (2) is enough high (0.43) therefore, null hypothesis regarding instrument validity cannot be rejected. Similarly, the p-value of Hansen test is also high (0.659) thus, the null hypothesis that instruments as a group are exogenous cannot be rejected.

Table 10.10 shows that The coefficient on presence of females is insignificant for ROA during pre-crisis period which indicates that woman presumably not be making any significant contributions to corporate board decisions making. This result is consistent with prior studies of Zahra and Stanton (1988) and Rose (2007) who find insignificant relation between presence of female and firm performance. On the other hand, The coefficient on presence of females is negative and significant for ROA during crisis period which indicates that presence of female

has negative impact on firm performance. This result is consistent with prier studies (see for example, Burke, 1994; Shrader et al. 1997; Kang et al, 2007).

The presence of non-executive directors is positively associate with ROA during pre-crisis period at 10% significance level which indicates the non-executive directors are vital element of board as they monitor firm activities and play an important role in firms' development in more effective way. During crisis period, The coefficient on presence of non-executive directors is insignificant for ROA which indicates that firm performance is not influence by presence of non-executive directors. The non-executive directors are partly engaged with the firm activities, so they have little time to collect first-hand information about the firms' day to day management. This result is consistent with several prior studies such as (Hermalin and Weisbach, 1991; Laing and Weir, 1999; Reddy et al. 2010).

The coefficient on frequency of board meeting is insignificant for ROA during pre-crisis which indicates that frequent board meetings is not necessarily beneficial. Second, more numbers of meeting can be resulted in high cost of management in the form of managerial time, travel cost, director meeting fees and refreshment expenses. Whereas, during financial crisis period the frequency of board meeting is positively associates with ROA at 5% significance level which indicates that frequency of board meeting helps to improve the overall performance of the firm through effective communication and continuous monitoring.

The coefficient on director's ownership is positive and statistically significant at 10% level for ROA during pre-crisis period which indicates that presence of director's ownership has positive influence on firm performance as it helps to align the interest of managers and shareholders. This may be due the fact that when the managerial ownership increase, the managers become the directors and shareholders of the firm, then better firm performance is expected as the manger and shareholders' interests become more align.

During financial pre-crisis, The coefficient on director's ownership is insignificant for ROA which indicates that director ownership is not necessarily be beneficial and has no impact on firm performance. The coefficient on institutional ownership is positive and statistically significant at 10% level for ROA which indicates that firm performance is higher when institutional owners have higher percentage of shareholding. During financial crisis period, The coefficient on institutional ownership is insignificant for ROA which indicates that firm performance is not affected by institutional ownership.

The coefficient on firm size is negative and statistically significant at 10% level for ROA which indicates that large firm size is not an effective control and monitoring mechanism due to large volume which may impact negatively on firm performance. Moreover, investors perceive small firms as better performer than large firms (Haniffa and Hudaib, 2006).

During crisis period, The coefficient on firm size is insignificant for ROA which indicates that firm performance is not affected by firm size. This result is consistent with prior study of (Tuan Nguyen et al, 2014) who reports insignificant association between firm size and corporate performance. The coefficient on firm age is positive and statistically significant at 10% level for ROA during pre-crisis period which indicates that on average, older firms have positive impact on firm performance. The positive association between age and firm performance is due to the reason that older firms operating in industries from many years and they have well established system and procedures.

During crisis period, The coefficient on firm age is insignificant for ROA which indicates that firm's age does not necessarily to have any impact on firm performance. The coefficient on leverage is insignificant for ROA during pre-crisis period which indicates that firm performance is not affected by leverage. The reason may be that the firm major operational cost is finance by equity. This result is consistent with study results of (Tuan Nguyen et al., 2014) who documents that leverage is insignificant with firm performance. During crisis period, The coefficient on firm leverage is negative and statistically significant at 5% level for ROA which indicates that large amount of debt decreases firm performance. The possible reason is that the amount of debt increases due to high cost of operation which is resulted in high rate of interest payment. This result is consistent with several prior studies (see for example, Collins Ntim et al., 2009: Qaiser.R, 2011, Zyad M. S, 2014).

The coefficient on cash flow to total assets is insignificant for ROA during pre-crisis period which indicates that cash flow to total assets do not necessarily to have any impact on firm performance. During crisis period, The coefficient on cash flow to total assets is negative and statistically significant at 10% level for ROA which indicates that firm is unable to efficiently collect cash from sales and debtors which is resulted in negative impact on firm performance.

10.11 Impact of corporate governance on firm performance (MB Ratio) in different economic periods (MNC firms' sample)

Table 10.11 presents the impact of corporate governance on firm performance (MB Ratio) in different economic period such as pre-financial crisis and during financial crisis period for the MNC firms' sample of the study. Table 10.11 indicates that during pre-crisis the p-value of AR (2) is enough high (0.215) therefore, null hypothesis regarding instrument validity cannot be rejected. Similarly, the p-value of Hansen test is also high (1) thus, the null hypothesis that instruments as a group are exogenous cannot be rejected. Whereas, during financial crisis period the p-value of AR (2) is enough high (0.602) therefore, null hypothesis regarding instrument validity cannot be rejected. Similarly, the p-value of Hansen test is also high (0.546) thus, the null hypothesis that instruments as a group are exogenous cannot be rejected.

Table 10.11 shows that The coefficient on board size is positively associate with MB ratio at 1% significance level during pre-crisis period which indicates that large board size is positively impact on firm financial performance and shareholders' value generation. These phenomena can be better defined by resource dependence theory which suggests that the large board size with high level of links to external environment enhances the firm access to more resources which impact positively on firm performance. This result is consistent with various prior studies such as, (Kiel and Nicholson, 2003; Jackling and Johl, 2009; Abor and Biekpe, 2007; Collins Ntim et al., 2009) who have reported a positive association between board size and firm performance. During crisis period, The coefficient on board size is insignificant for MB ratio which indicates that firm performance is not affected by the size of board. This result is consistent with prior studies such as, (Hermalin and Weisbach, 1991; Ho and Williams, 2003; Mohd Ghazali, 2010; Zyad M. S, 2014).

The coefficient on presence female of board member is positively associate with MB ratio at 1% significance level during pre-crisis period which indicates that woman in board is consider as competitive advantage of the firm. This result is consistent with prier studies such as, (Burke, 2000; Carter et al., 2003; Swartz and Firer, 2005; Smith et al. 2006; Reddy et al., 2008; Liu, Yu et al. 2014).

During crisis period, The coefficient on presence of females in board is insignificant for MB ratio which indicates that woman presumably not be making any significant contributions to corporate board decisions making. This result is consistent with prior studies of Zahra and Stanton (1988) and Rose (2007) who find no significant relation between presence of female

and firm performance. The coefficient on presence of non-executive directors is positively associate with MB ratio at 5% significance level during pre-crisis period which indicates that presence of non-executive directors increases the value of the firm and perform better than those having less percentage of NEDs.

During financial crisis period, The coefficient on presence of non-executive directors is positively associate with MB ratio at 10% significance level during pre-crisis period. This result is consistent with prier studies (see for example, Mallin, 2004; Cheng and Firth, 2005; Mashayekhi and Bazaz, 2008; Jackling and Johl, 2009; Gupta and Fields, 2009). These study results document that presence of non-executive directors has positive impact on firm performance.

The frequency of board meeting is positively associate with MB ratio at 10% significance level during pre-crisis period which indicates that frequency of board meeting helps to improve the overall performance of the firm through effective communication and continuous monitoring.

This result is consistent with previous studies such as, (Carcello et al. 2002; Karamanou and Vafeas, 2005; Mangena and Tauringana, 2006; Collins Ntim et al., 2009). During crisis period, The coefficient on frequency of board meeting is insignificant for MB ratio which indicates that frequent board meetings are not necessarily beneficial. Second, more numbers of meeting can be resulted in high cost of management in the form of managerial time, travel cost, director meeting fees and refreshment expenses. The coefficient on director's ownership is negative and statistically significant at 5% level for MB ratio during pre-crisis period which indicates that presence of director's ownership has negative influence on firm performance. This negative association support the argument that due to high volume of shareholding, directors may acquire more voting power to protect themselves against any disciplinary action by the other members of the board. This situation encourages managers to adopt opportunistic behaviour which effects negatively on firm financial performance. This result is consistent with several prior studies such as, (Ho, Williams et al., 2003; Reddy et al., 2008; Mangena and Chamisa, 2008 Collins Ntim et al., 2009). During financial crisis period, The coefficient on director's ownership is insignificant for MB ratio which indicates that director ownership is not necessarily beneficial and has no impact on firm performance. This result is consistent with previous study of Florackis et al. (2009).

The coefficient on institutional ownership is negative and statistically significant at 5% level for MB ratio which indicates that firm performance is negatively affected by institutional ownership. This result is consistent with the study of Xu, X. Wang, Y. (1999) who has examined the chines listed firms and find a negative relationship between firms' profitability and institutional ownership. During crisis period, The coefficient on institutional ownership is insignificant for MB ratio which indicates that firm performance is not affected by institutional ownership.

The coefficient on associated ownership is positive and statistically significant at 5% level for MB ratio during pre-crisis which indicates that associated ownership has positive influence on firm performance as the group of companies are more diversified, more financially stable and have positive impact on firm performance. During crisis period, The coefficient on associated ownership is insignificant for MB ratio which indicates that firm performance is not affected by associated ownership. The coefficient on ownership concentration is negative and statistically significant at 5% level for MB ratio during pre-crisis period which indicates that presence of ownership concentration has negative influence on firm performance. This result is consistent with previous studies such as, (Morck et al., 2001; Lehmann and Weigand, 2000; Haniffa and Hudaib, 2006; Bjuggren, et al, 2007). These studies have reported a negative association between ownership concentration and firm performance.

During crisis period, The coefficient on ownership concentration is insignificant for MB ratio which indicates that firm performance is not affected by ownership concentration. This result is consistent with several prior studies (see for example, El Mehdi, 2007; Mangena and Chamisa, 2008). The coefficient on firm age is negative and statistically significant at 1% level for MB ratio during pre-crisis period which indicates that older firms do not necessary to have a better firm performance. The possible reason of negative association between firm age and corporate performance is that the firms with less age are generally low credit worth and risk of instability. During crisis period, The coefficient on firm age is positive and statistically significant at 5% level for MB ratio which indicates that on average, older firms have positive impact on firm performance. The positive association between age and firm performance is due to the reason that older firms operating in industries from many years and they have well established system and procedures. The firm with larger age expected to be more mature and their managers have good external links which is resulted in association with high firm performance. This result is consistent with Krishna Reddy (2010) who documents a positive association between firm age and corporate performance.

The coefficient on firm leverage is negative and statistically significant at 1% level for MB ratio during pre-crisis period which indicates that large amount of debt decreases firm performance. The possible reason is that the amount of debt increases due to high cost of operation which is resulted in high rate of interest payment (Dechow et al., 1996). This result is consistent with several prior studies (see for example, Collins Ntim et al., 2009: Qaiser.R, 2011, Zyad M. S, 2014). During crisis period, The coefficient on leverage is insignificant for MB ratio which indicates that firm performance is not affected by leverage. The reason may be that the firm major operational cost is finance by equity. This result is consistent with study results of (Tuan Nguyen et al., 2014) who documents that leverage is insignificant with firm performance.

The coefficient on dividend to total assets is positive and statistically significant at 1% level for MB ratio during pre-crisis period which indicates that payment of dividend is considered by market as better utilisation of cash flow and resulted in positive impact on firm performance. `This result is consistent with Krishna Reddy (2010) who reports a positive association between dividend to total asset and firm performance.

During crisis period, The coefficient on dividend to total assets is insignificant MB ratio which indicates that dividend to total assets do not necessarily to have any impact on firm performance. This result is rejecting the theoretical hypothesis that payment of dividend is considered by market as better utilisation of cash flow and resulted in positive impact on firm performance. The coefficient on sale to assets is negative and statistically significant at 1% level for MB ratio during pre-crisis period which indicates that firm is unable to optimal use of its resources which affect efficiency and resulted in negative impact on firm performance. During crisis period, The coefficient on sale to assets is insignificant for MB ratio which indicates that sale to assets do not necessarily to have any impact on firm performance. This leads to the hypothesis that firms are unable to optimal use of their resources which can help to improve firm efficiency and have resulted in positive impact on firm performance. The coefficient on sale growth is negative and statistically significant at 5% level for MB ratio which indicates that firms with high sale growth do not necessarily to have better corporate governance performance. On the hand during crisis period The coefficient on sale growth is insignificant for MB ratio which indicates that firms with high sale growth do not necessarily to have any impact on firm performance. The size of audit committee, firm size and cash flow to total assets have no association with firm performance.

10.13 Summary of results

Table 10.10 shows that The coefficient on various explanatory variables such as NED's, director ownership, institutional ownership, firm size and firm age are significant for ROA in pre-crisis period, but these variables are insignificant during crisis period. Whereas during crisis period the impact of corporate governance behave differently for example, variables like frequency of board meeting and leverage have significant impact on firm performance (ROA). The positive and significant coefficient of board meeting indicates that during crisis period, the directors have more frequent meeting in order to address the challenges of crisis period. The coefficient on leverage is negative and significant for ROA which indicates that large amount of debt decreases firm performance. The possible reason is that the amount of debt increases due to high cost of operation which is resulted in high rate of interest payment (Dechow et al., 1996). The coefficient on cash flow to total assets is negative and significant for ROA which indicates that firm is unable to efficiently collect cash from sales and debtors during financial period which is resulted in negative impact on firm performance.

Table 10.11 shows that coefficient of various explanatory variables such as board size, female, NED, board meeting, directors' ownership, institutional ownership, associated ownership, ownership concentration, firm age, leverage, dividend to total assets, sale to assets, sale growth is statically significant for MB Ratio in pre-crisis period. These variables are not significant except NED and firm age during crisis period which indicates that corporate governance impact differently in crisis period.

Overall, these results show that corporate governance of MNC firm sample impact differently in different economic periods such as pre-crisis period (2003-2008) and during crisis period (2009-2013). The results show that impact of corporate governance on firm performance in pre-crisis period (2003-2008) is more significant as compared to crisis periods (2009-2013). Therefore, corporate governance mechanism impact more effectively on firm performance during stable economic conditions and less effective during financial crisis period. Thus, this study suggests that stable economic conditions are one of the determinants of better corporate governance. In conclusion, the impact of corporate governance in different economic periods are not similar.

Chapter 11

Impact of corporate governance on Firm performance- A comparative analysis of High Growth Firms (HGFs) and Low Growth Firms (LGFs)

11.1 Introduction

High growth firms (HGFs) make significant contribution to economic growth and development of emerging and developed economies and recently they have received increasingly interest of researchers. There is no set rule for defining growth, but generally firm growth means the capability to increase annual revenue at a comparatively higher rate as compared to its competitors within economy. When a firm is growing at high pace as compared to its peers or to the broad economy then it's deemed to be high growth firm and similarly with relatively low growth are consider as low growth firms. High growth firms are considered the one of the key factors of modern economies of the world. (Henrekson and Johansson, 2010).

The high growth firms have the capacity to rise their business more rapidly as compare to low growth firms therefore, their balance sheet may come under significant pressure as capital demands increase with business growth. The high growth firms may or may not be highly profitable as, investors are generally take long run review with the expectation that high growth will link up with increasing profit and cash flow of the firm in future. Moreover, Delmar and Davidsson (1998) have suggested four issues need to consider while measuring firm growth such as, (i) the growth indicator (ii) the studied period (iii) growth measurement based on relative or absolute (iv) the growth process.

The empirical literature documents a few ways to measure firm growth such as total sales, employment and total assets but the most commonly, total sales have used as measure of firm growth in empirical analysis (Delmar, 1997). The assets growth can be used as growth indicator, but it may be problematic where intangible assets are important part of economic growth process and sample firms have very different capital intensities. The number of employees (employment) may be weak measure for firm growth especially in studies related to corporate governance and firm performance relationship as it not reflects the financial growth of the firm. The sales growth may depict the short term and long-term changes in the firm and deemed to be most common indicator to measure firms' growth by the managers and investors. Thus, based on previous literature this study measures the firms' growth by taking a propionate increase in average annual sales of sample firms. This study divides the data into

two sub sample e.g. High growth firms (HGFs) and Low growth firms (LGFs) and investigate whether impact of corporate governance on firm performance differs across High and low growth firms.

11.2 Impact of corporate governance on firm performance (ROA) - A comparative analysis of High Growth Firms (HGFs) and Low Growth Firms (LGFs)

Table 11.2 present the results regarding comparative analysis of High growth and Low growth firms regarding impact of corporate governance on firm performance (ROA). Columns 2-3 of table 11.2 present Fixed effects and GMM results of high growth firms whereas, columns 4-5 present fixed effects and GMM results of low growth firms. The results present as per the definitions report by system GMM estimator which indicates that dynamic endogeneity is a significant concern of the model. The results indicate that p-value of AR (2) for both high growth and low growth firms are enough high which are (0.617) and (0.199) respectively therefore, null hypothesis regarding instrument validity cannot be rejected. Similarly, the p-value of Hansen test for high and low growth firms are also high which is (1) and (0.999) respectively thus, the null hypothesis that instruments as a group are exogenous cannot be rejected.

Table 11.2 shows that The coefficient on board size is positively associated with ROA at 5% significance level for high growth firms which indicate that large board size is positively impact firm financial performance and shareholders' value generation. On the other hand, in case of low growth firms the relationship between board size and firm performance is insignificant which indicate that board size has no impact on firm performance. The static fixed effect model of low growth firms in column 3 shows a negative relationship at 10 % level of significance between board size and firm performance. This coefficient sign of board size flip from significant to insignificant when unobserved heterogeneity, simultaneity and dynamic endogeneity is fixed by GMM.

The coefficient on director ownership is positive and statistically significant at 10% level with ROA for high growth firms which indicate that presence of director ownership has positive influence on firm performance as it helps to align the interest of managers and shareholders. On the other hand, in case of low growth firms the relationship between director ownership and firm performance is insignificant. Notably, fixed effects model shows a positive relationship with director ownership contrary to its GMM results which showed insignificant association with director ownership.

The coefficient on institutional ownership is negative and statistically significant for both high growth and low growth firms at 5% and 10% level respectively which indicate that firm performance (ROA) is negatively affected by institutional ownership. The possible reason of negative effect is that the higher degree of institutional ownership has no social pressure on board members to work for the common interest of firm.

The relationship between associated ownership is insignificant in case of high growth firms but it is positive and significant at 10% level for low growth firms. This positive association indicate that group of companies are more diversified, more financially stable and have positive impact on firm performance. Moreover, group of companies have capacity to acquire economies of large scale which turn positive impact on firm performance.

The fixed effect model of both High growth and Low growth model shows that The coefficient on ownership concentration is negative and statistically significant at 10% level for ROA which indicate that presence of ownership concentration has negative influence on firm performance. The possible reason of this negative association is that the controlling shareholders influence the way to company run and obtain private benefits at expense of minority shareholders interest. When GMM estimation fixed dynamic endogeneity the coefficient sign of ownership concentration flip from significant to insignificant in case both model e.g. High growth and Low growth.

The coefficient on firm size is insignificant with ROA for both High and low growth firms which indicate that firm performance is not affected by firm size. On the other hand, the static fixed effect estimation of both e.g. High growth and Low growth firms shows a significant negative relationship at 5% level of significance. The possible reason of this negative effect is that large size has not effective control and monitoring mechanism due to large volume which may impact negatively on firm performance.

The coefficient on firm age is negative and statistically significant at 1% level for ROA in case of high growth firms which indicate that older firms do not necessary to be have a better firm performance. On the other hand, there is no relationship between age and firm performance in case of low growth firm. Moreover, static model of low growth firms in column 5 shows a positive association between age and firm performance at 5% level.

The coefficient on leverage is insignificant with ROA in case of high growth firms which indicate that firm performance is not affected by leverage. The possible reason is that the firm major operational cost is finance by equity. On the other hand, both the static and dynamic

model of low growth model show a negative relationship between leverage and firm performance at %5 level of significance. The reason may be due to high cost of operation the amount of debt increases which resulted in high rate of interest payment.

The relationship between sale growth and firm performance is negative at 1% level of significance in case of low growth firms which indicate that firms with high sale growth do not necessarily be have better corporate governance performance. On the other hand, the relationship between sale growth and firm performance is insignificant in case of high growth firms. The coefficient on cash flow to total assets is negative and statistically significant at 5% level for ROA in case of high growth firms which indicate that firm is unable efficiently collect cash from sales and debtors which has resulted in negative impact on firm performance. On the other hand, the static model of low growth firms indicates a negative association between cash flow to total assets and firm performance whereas, the GMM estimator showed in significant relationship.

In summary, for high growth firms he variables like female, NED, board meeting, audit committee, associated ownership, ownership concentration, firm size, leverage, dividend to total assets, sale to assets and sale growth have insignificant association with firm performance (ROA). On the other hand, in case of low growth firms board size, female, NED, board meeting, audit committee, director ownership, ownership concentration, firm size, firm age, dividend to total assets, sale to assets and cash flow to total assets have insignificant association with firm performance (ROA).

11.3 Impact of corporate governance on firm performance (MB Ratio) - A comparative analysis of High Growth Firms (HGFs) and Low Growth Firms (LGFs)

Table 11.3 present the results regarding comparative analysis of High growth and Low growth firms regarding impact of corporate governance on firm performance (MB Ratio). Columns 2-3 of table 11.3 present Fixed effects and GMM results of high growth firms whereas, columns 4-5 present fixed effects and GMM results of low growth firms. The results indicate that p-value of AR (2) for both high growth and low growth firms are enough high which are (0.19) and (0.418) respectively therefore, null hypothesis regarding instrument validity cannot be rejected. Similarly, the p-value of Hansen test for high growth and low growth firms are also high which is (1) and (0.999) respectively thus, the null hypothesis that instruments as a group are exogenous cannot be rejected.

The relationship between presence of females and firm performance is insignificant with MB ratio which indicate that firm performance is not affected by presence of female for both high growth and low growth firms. On the other hand, the static model of low growth firm shows a positive and significant relationship between female and firm performance. After controlling dynamic endogeneity by GMM estimator, the coefficient sign is flip to insignificant.

The coefficient on frequency of board meeting is positively associated with MB Ratio at 10% level of significance for high growth firms which indicate that frequency of board meeting help to improve the overall performance of the firm through continuous monitoring. On the other hand, the relationship between frequency of board meeting and firm performance is insignificant in case of low growth firms.

The relationship between audit committee and firm performance is negative and statistically significant at 10% level for MB Ratio which indicate that existence of audit committee negatively influences the firm performance. On the other hand, The coefficient on audit committee is positive and significant at 1% level of significance for fixed effects model but remain insignificant when GMM estimator is applied in case of low growth firms.

The association between director ownership and firm performance is positive and statistically significant at 5 % level for MB Ratio. The possible reason of this positive relationship is that the presence of director ownership helps to align the interest of managers and shareholders. On the other hand, there is no relationship between director ownership and firm performance in case of low growth firms.

The coefficient on associated ownership is positive at 10% level of significance for low growth firms which indicate that group of companies have capacity to acquire economies of large scale which turn positive impact on firm performance. On the other hand, the relationship between associated ownership and firm performance is insignificant in case of high growth firms.

The coefficient on firm size is negative and statistically significant at 10% level for low growth firms. This indicate that large size has not effective control and monitoring mechanism due to large volume which may impact negatively on firm performance. On the other hand, size and firm performance relationship is insignificant in case of high growth firms.

The coefficient on sale to assets is negative and statistically significant at 5% level of significance for low growth firms which indicate low growth firms are unable to optimally use their resource which effect efficiency and have resulted in negative impact on firm performance. On the other hand, the relationship between sale to assets and firm performance is insignificant in case of high growth firms.

11.4 Summary of results

The results show that impact of corporate governance on firm performance differs across high growth firms and low growth firms. It is concluded that results of high growth firms are more significant as compared to low growth firms regarding corporate governance and firm performance relationship. Thus, corporate governance mechanism is more effective in high growth firms and less effective in low growth firms. The study conclude that overall better corporate governance is positively associated with high growth firms in Pakistan.

The ownership structure is the key driving force which determine the direction of corporate governance mechanism with in the firm. This study finds a significant difference in ownership structure of both the models e.g. high growth firms and low growth firms. For example, high growth firms are dominating by director ownership whereas, low growth firms are dominating by associated ownership in Pakistan. More specifically, director ownership is positively associated with both measure of performance (ROA and MB Ratio) in high growth firms and insignificant with low growth firms. On the other hand, associated ownership is positively associated with both measure of performance (ROA and MB Ratio) in low growth firms and insignificant in high growth firms. In addition, the institutional ownership is negatively associated with high growth firms and positively associated with low growth firms.

Moreover, the results reveal that large board size is more appropriate for better corporate governance practice in Pakistan as the board size is positively associate with high growth firm performance (ROA) and insignificant for low growth firms. Similarly, board meeting is positively associated with HGFs but insignificant in case of LGFs. The small size of audit committee also one of the credentials of HGFs growth firms as the results show a negative association between audit committee size and high growth firm performance. The young age firms in Pakistan are more innovative as compared to old firms because the results indicate that firm age is negatively associate with high growth firm and insignificant with low growth firms. Thus, old age firms do not have any relationship with firm performance. In addition, leverage is negatively associate with low growth firm and insignificant in case of high growth firms

which indicate that low growth firms tend to use less debt than equity because the equity give more financial flexibility to managers.

Chapter 12

Summary and conclusion

The aim of this chapter is to presents the summary of empirical findings regarding corporate governance and firm performance relationship. This chapter is organised as follows. Section 12.1 present the Summary and conclusion of results. This is followed by research contribution (section 11.2). Finally, section 11.3 presents limitation of the study and section. The individual summary of each sample is as follows:

- 12.1.A Summary and conclusion of results (Full sample)
- 12.1.B Summary and conclusion of results (Local firms sample)
- 12.1.C Summary and conclusion of results (MNC firms sample)

12.1.A Summary and conclusion of results (Full sample)

This study finds an issue of endogeneity and heteroscedasticity in data which leads to the application of system GMM. Therefore, system GMM is the main estimation technique of this study which results compare with static and dynamic fixed effects to analyse that how dynamic endogeneity influence the corporate governance and firm performance relationship. Interestingly, both System GMM estimators such as GMMa and GMMb have traced the existence of dynamic endogeneity across sample firms.

Overall, this study finds that corporate governance structure does matter in Pakistan. In case of full sample there are three corporate governance variables such as, board meeting, associated ownership and leverage statistically significant effect on firm performance for ROA and MB ratio as per the results of system GMM estimator. Moreover, the results of dynamic fixed effects models show seven variable which have significant impact on firm performance such as board size, female board members, audit committee size, associated ownership, firm size, leverage and cash flow to total assets.

In addition, the results of static fixed effects indicate four variables such as female board members, audit committee, firm size and leverage have significant association with ROA and MB Ratio but when endogeneity is fixed by system GMM, their coefficient sign flip from significant to insignificant. Therefore, earlier studies which have ignored the dynamic endogeneity, may be biased.

These finding are consistent with the arguments of previous studies such as (Schultz et al., 2010; Pham et al., 2011; Wintokit al., 2012) who document that association between corporate governance and firm performance should be examine in dynamic framework. However, the findings of this study are not completely in agreement with the arguments of these studies as they document that corporate governance mechanisms do not matter after controlling the potential source of dynamic endogeneity.

On the contrary, the findings of this study document that corporate governance does matter and have significant impact on firm performance after controlling of dynamic endogeneity, un observed heterogeneity, simultaneity and autocorrelation. The finding of this study consistent with a few previous studies (see for example, Nirosha Hewa, 2012; Gibson et al, 2013 Abdullah Mohammed, 2014; Tuan Nguyen et al., 2014; Zaimah Abdullah, 2015). These studies results reveal a significant association between corporate governance variables and firm financial performance even after controlling of dynamic endogeneity auto-correlation and simultaneity. These finding also support the arguments of Yabei and Izumida (2008) who has argued that corporate governance plays a vital role in disciplining management and determining firm performance. These results support the arguments that firms should be encouraged to perform better corporate governance practices.

12.1. B Summary and conclusion (Local Firms Sample)

In case of Local firms sample the results of system GMM estimator show that there are four corporate governance variables such as, board size, director ownership and associated ownership which have significant effect on firm performance for ROA and MB ratio. Moreover, the results of dynamic fixed effects models show four variables which have significant impact on firm performance such as firm size, ownership concentration, leverage and sale to assets.

In addition, the results of static fixed effects indicate five variables such as Audit committee, ownership concentration, firm size, leverage and sale to assets have significant association with ROA and MB Ratio but when endogeneity is fixed by system GMM, their coefficient sign flip from significant to insignificant. Therefore, earlier studies which have ignored the dynamic endogeneity, may be biased.

12.1. C Summary and conclusion (MNC Firms sample)

In case of MNC firms sample the results of system GMM estimator show that there are nine corporate governance variables such as, board size, NED, audit committee, director ownership, institutional ownership, firm size, firm age, leverage, and sale growth which have significant effect on firm performance for ROA and MB ratio. Moreover, the results of dynamic fixed effects models show four variables which have significant impact on firm performance such as, female board members, audit committee size institutional ownership and cashflow to total assets.

In addition, the results of static fixed effects indicate five variables which have significant association with firm performance but when unobserved heterogeneity, simultaneity, dynamic endogeneity and autocorrelation has control through system GMM estimation, the coefficient sign of such variables flip from significant to insignificant association. For example, female board members, audit committee size, institutional ownership and cashflow to total assets show a significant association for ROA and MB Ratio but when endogeneity is fixed by system GMM, their coefficient sign flip from significant to insignificant.

In addition, the results of static fixed effects indicate five variables such as, female board members, audit committee size, institutional ownership and cashflow to total assets have significant association with ROA and MB Ratio but when endogeneity is fixed by system GMM, their coefficient sign flip from significant to insignificant. Therefore, earlier studies which have ignored the dynamic endogeneity, may be biased.

12.2 Summary and conclusion of comparative analysis of Local and MNC firms

This study concludes that impact of corporate governance on firm performance differs across local and MNC firms of Pakistan. The results of comparative analysis of local and MNC firms indicate that the relationship between corporate governance and firm performance of MNC firms are more significant as compared to local firms. More specifically corporate governance of MNC firms is more effective as compared to local firms in Pakistan. This study finds that MNC firms in Pakistan have high standards of governance as they are financially sound and belong to developed countries which impact positively on their performance. Moreover, most of MNC are part of top 100 index firms of Pakistan stock exchange which is an ample evidence of their financial worth. This

study results further conclude that difference in financial worth, internal corporate culture and country of origin do impact on performance of MNC firms in Pakistan.

Therefore, MNC firms in Pakistan have better corporate governance practice as compared to local Pakistani firms. Thus, this study suggests that financial worth, well established internal corporate culture and country of origin are the determinants of better corporate governance. This is a unique contribution to existing literature because as per researcher best knowledge, there is no previous study which has conducted a comparative analysis of MNC firms with local firms.

12.3 Summary and conclusion of Impact of corporate governance in different economic periods (Full sample)

The results of (full sample) show that The coefficient on various explanatory variables such as NED's, director ownership, institutional ownership and leverage are significant for ROA during pre-crisis period (stable economic conditions) but these variables are insignificant during crisis period. Whereas during crisis the impact of corporate governance behave differently for example, frequency of board meeting, associated ownership, firm size and leverage have positive and significant impact on firm performance (ROA). Interestingly, these variables are not significant during pre-crisis period which reveal that corporate governance impact is different during crisis period. The positive and significant coefficient of board meeting indicates that during crisis period, the directors have more frequent meetings to address the challenge of crisis period. The positive coefficient of associated ownership indicates that during crisis period group of companies have tendency to acquired economies of large scale which resulted in positive impact on firm performance to overcome the problems arises during crisis period. Similarly, the positive coefficient of firm size indicates that large firms are more diversified, more financially stable and can survive during financial crisis and have positive impact on firm performance. The coefficient on leverage is positive which possible reason is that due to low rate of interest, the optimal cost of operation and the amount of debt decrease which is resulted in low rate of interest payment.

The study results show that coefficient of various explanatory variables such as director ownership, associated ownership and firm size are significant for MB Ratio in pre-crisis period. These variables are not significant during crisis period which indicates that corporate

governance impact differently in crisis period. On the other hand, during crisis period audit committee size and leverage show a significant and positive association with MB Ratio.

12.4 Summary and conclusion of Impact of corporate governance in different economic periods (Local firms' sample)

The results of local firms' sample document that The coefficient on various explanatory variables such as director ownership, associated ownership and ownership concentration are significant for ROA in pre-crisis period. Whereas, these variables have insignificant relationship during crisis period except ownership concentration which coefficient sign flips from negative to positive. In contrast, during crisis period the results are different as compared to pre-crisis period. For example, variables like board size, NED audit committee size, associated ownership, ownership concentration and firm size have significant impact on firm performance (ROA). Interestingly, these variables are not significant during pre-crisis period except associated ownership which reveal that corporate governance impact is different in crisis periods.

The negative and significant coefficient of board size for ROA indicates that during crisis period mostly firms prefer small board size due to certain disadvantages. These disadvantages are ability to control management, lack of effective communication and delays in decision making. The presence of non-executive directors is positively associate with ROA during crisis period which indicates the non-executive directors perform a vital role by monitoring and support firm activities in order to overcome the impact of financial crisis. Similarly, during crisis period The coefficient on audit committee size is positive and statistically significant for ROA which indicates that firms tend to prefer a bigger size of audit committee for better internal monitoring and decrease to the internal fraud. Whereas, The coefficient on ownership concentration is positive and statistically significant for ROA during crisis period which indicates that presence of ownership concentration has positive influence on firm performance as skilled block holders help to improve firm performance. The coefficient on firm size is positive and statistically significant for ROA which indicates that larger firms are more diversified, more financially stable and have capacity to survive during financial crisis period.

The coefficient on board meeting and leverage are significant for MB Ratio in pre-crisis period. These variables are no more remain significant during crisis period which indicates that corporate governance impact differently in crisis period. On the other hand, during crisis period The coefficient on ownership concentrations is negative and significant which indicates that

due to weak regulations and legal protection, ownership concentration considered one of major agency problem which is not favourable for minority shareholders.

12.5 Summary and conclusion of Impact of corporate governance in different economic periods (MNC firms' sample)

The results of MNC firms sample show that The coefficient on various explanatory variables such as NED's, director ownership, institutional ownership, firm size and firm age are significant for ROA in pre-crisis period, but these variables are insignificant during crisis period. Whereas during crisis period the impact of corporate governance behave differently for example, variables like frequency of board meeting and leverage have significant impact on firm performance (ROA). The positive and significant coefficient of board meeting indicates that during crisis period, the directors have more frequent meeting in order to address the challenges of crisis period. The coefficient on leverage is negative and significant for ROA which indicates that large amount of debt decreases firm performance. The possible reason is that the amount of debt increases due to high cost of operation which is resulted in high rate of interest payment (Dechow et al., 1996). The coefficient on cash flow to total assets is negative and significant for ROA which indicates that firm is unable to efficiently collect cash from sales and debtors during financial period which is resulted in negative impact on firm performance.

The results show that coefficient of various explanatory variables such as board size, female, NED, board meeting, directors' ownership, institutional ownership, associated ownership, ownership concentration, firm age, leverage, dividend to total assets, sale to assets, sale growth is statically significant for MB Ratio in pre-crisis period. These variables are not significant except NED and firm age during crisis period which indicates that corporate governance impact differently in crisis period.

Overall, the results show that impact of corporate governance on firm performance in pre-crisis period (2003-2008) is more significant as compared to crisis periods (2009-2013). Therefore, the relationship between corporate governance and firm performance is more effective during stable economic conditions (2003-2008) and less effective during financial crisis period (2009-2013). Thus, this study suggests that stable economic conditions are one of the determinants of better corporate governance.

12.6 Summary of results of comparative analysis of Low growth firms and High growth firms

The results show that impact of corporate governance on firm performance differs across high growth firms and low growth firms. It is concluded that results of high growth firms are more significant as compared to low growth firms regarding corporate governance and firm performance relationship. Thus, corporate governance mechanism is more effective in high growth firms and less effective in low growth firms. The study conclude that overall better corporate governance is positively associated with high growth firms in Pakistan.

The ownership structure is the key driving force which determine the direction of corporate governance mechanism with in the firm. This study finds a significant difference in ownership structure of both the models e.g. high growth firms and low growth firms. For example, high growth firms are dominating by director ownership whereas, low growth firms are dominating by associated ownership in Pakistan. More specifically, director ownership is positively associated with both measure of performance (ROA and MB Ratio) in high growth firms and insignificant with low growth firms. On the other hand, associated ownership is positively associated with both measure of performance (ROA and MB Ratio) in low growth firms and insignificant in high growth firms. In addition, the institutional ownership is negatively associated with high growth firms and positively associated with low growth firms.

Moreover, the results reveal that large board size is more appropriate for better corporate governance practice in Pakistan as the board size is positively associate with high growth firm performance (ROA) and insignificant for low growth firms. Similarly, board meeting is positively associated with HGFs but insignificant in case of LGFs. The small size of audit committee also one of the credentials of HGFs growth firms as the results show a negative association between audit committee size and high growth firm performance. The young age firms in Pakistan are more innovative as compared to old firms because the results indicate that firm age is negatively associate with high growth firm and insignificant with low growth firms. Thus, old age firms do not have any relationship with firm performance. In addition, leverage is negatively associate with low growth firm and insignificant in case of high growth firms which indicate that low growth firms tend to use less debt than equity because the equity give more financial flexibility to managers.

12.7 Research Contribution

This section discusses the contributions of this study to existing literature in terms of its theoretical and methodological implications which is helpful for regulators and policymakers. The implication of this study also supports the researchers and scholars who are interested to work in the field of corporate governance. Overall, this study contributes to existing body of knowledge in twelve notable ways.

First, the empirical literature of corporate governance has discussed four main types of ownership structure such as, director ownership, institutional ownership, pyramid ownership and family ownership. There is another type of ownership that exists only in Pakistan corporate sector which is associated ownership. The information of this unique variable is available in annual reports of listed firms of Pakistan. Interestingly, this study has found a positive and significant relationship between associated ownership and firm financial performance for both measures of performance (ROA, MB Ratio) in various models of this study. As per researcher best knowledge this variable has not discussed in previous studies of corporate governance. Therefore, this study has expanded the existing literature of corporate governance by introducing associated ownership as a unique explanatory variable of corporate governance mechanism.

Second, this study has examined the impact of female board members on firm performance by considering the unique social and cultural environment of Pakistan. The study results show that there is insignificant association between females' board members and firm performance for full sample and MNC sample whereas, Local firms' sample results show a positive association between female board members and MB Ratio. In contrast, the results of sector wise analysis show that the presence of female board members has significant positive impact on firm performance in almost all sectors of Pakistan.

Third, this study concludes that the relationship between corporate governance and firm performance of MNC firms are more significant as compared to local firms. The MNC firms in Pakistan have high standards of governance as they are financially sound and belong to developed countries which impact positively on their performance. Moreover, most of MNC are part of top 100 index firms of Pakistan stock exchange which is an ample evidence of their financial worth. The results further conclude that difference in financial worth, well established internal corporate culture and country of origin do impact on performance of MNC firms in Pakistan. Therefore, MNC firms in Pakistan have better corporate governance practice as compared to

local Pakistani firms. Thus, this study suggests that financial worth, well established internal corporate culture and country of origin are the determinants of better corporate governance. This is a unique contribution to existing literature because as per researcher best knowledge, there is no previous study which has conducted a comparative analysis of MNC firms with local firms.

Fourth, the global financial crisis emerged in 2008 because of US subprime mortgage crisis and considered to be the worst since great depression of 1930. Pakistan has also suffered due to macro-economic imbalances resulted from global financial crisis of 2008. In order to achieve research objectives, this study has divided the sample into two economic periods such as, pre-crisis period (2003-2008) and during crisis period (2009-2013). The results indicate that impact of corporate governance on firm performance in pre-crisis period (2003-2008) is more significant as compared to crisis periods (2009-2013). Therefore, the relationship between corporate governance and firm performance is more effective during stable economic conditions (2003-2008) and less effective during financial crisis period (2009-2013). Thus, this study suggests that stable economic conditions are one of the determinants of better corporate governance.

Fifth, this study has examined whether impact of corporate governance on firm performance differs across high growth firms and low growth firms. The results show that impact of corporate governance on firm performance differs across high growth firms and low growth firms. It is concluded that results of high growth firms are more significant as compared to low growth firms regarding corporate governance and firm performance relationship. Thus, corporate governance mechanism is more effective in high growth firms and less effective in low growth firms. In addition, this study finds a significant difference in ownership structure of both the models e.g. high growth firms and low growth firms. For example, high growth firms are dominating by director ownership whereas, low growth firms are dominating by associated ownership in Pakistan. As per researcher best knowledge there is no previous study which has examined the impact of corporate governance on firm performance across High and low growth firms thus, consider a unique contribution.

Sixth, there are a very few studies in Pakistan which have examined the impact of corporate governance on firm performance and these studies have not provided detailed understanding of corporate governance practice in Pakistan. Most of these studies have used a very small sample size such as 100 index firms of Pakistan stock exchange and for the maximum period

of five years or less and have ignored a large sample of remaining data related to Pakistani firms. The sample of this study consist of 259 non-financial listed firms of Pakistan for the period of twelve years (2003-2014). As per researcher best knowledge this sample size is larger than any previous study in Pakistan and therefore, has considered most representative sample of Pakistan corporate sector.

Seventh, this is the first study in Pakistani context which has used extensive attributes of corporate governance by covering sixteen variables of corporate governance as explanatory and control variables. After having relevant variables of corporate governance this study covers major aspects of corporate governance to examine its impact on firm performance in Pakistan.

Eighth, most of the previous studies related to corporate governance have used static models such as, (OLS, Fixed effects, 2SLS) and determined the results without considering the impact of dynamic endogeneity. A very few studies have used the GMM estimator to investigate the relationship between corporate governance and firm performance, but such studies have not included all relevant variable of corporate governance in estimation model. The findings of this study support the argument of previous studies that the association between corporate governance structures and firm performance is dynamic in nature (see for example, Hermalin and Weisbach, 1998; Raheja, 2005; Harris and Raviv, 2008). This approach suggests for controlling the potential sources of endogeneity which are inherent in the governance-performance relationship.

This study examines the sample data in multidimensional ways to investigate the impact of corporate governance on firm performance by addressing relevant econometrics issues from all possible aspects. Therefore, two main methodological tests such as, static and dynamic model with three different estimation approaches (see for example, fixed effect, System GMMa and System GMMb) have used to examine the impact of corporate governance on firm performance. The system GMM is the main estimation technique of this study which produces efficient and consistent estimations after controlling the effects of unobserved heterogeneity, simultaneity, dynamic endogeneity and autocorrelation. Finally, the results of system GMM have compared with static fixed effects to analyse that how dynamic endogeneity influences the relationship between corporate governance and firm performance. Therefore, this study concludes that the results from prior studies showing an insignificant impact of corporate governance on firms' performance may be biased as they fail to control potential endogeneity, unobserved heterogeneity and simultaneity.

Ninth, this study has used nine diagnostic tests to investigate that underlying statistical assumptions have not been violated as it validates the status of BLUE. Therefore, this study has used five diagnostic tests for Panel data such as, VIF, heteroscedasticity, autocorrelation, DWH test of endogeneity and test of strict exogeneity. This study has used four tests for the validity of system GMM such as AR (1), AR (2) test of autocorrelation and Hansen test of over-identification and difference in Hansen test which examines the health and validity of instruments. As per researcher best knowledge a very few studies have used all these tests for empirical analysis.

Tenth, generally the studies related to underdeveloped countries cannot be generalized to developed countries due to difference in corporate structure. This study has included MNC firms of Pakistan and examines the impact of corporate governance on firm performance separately from local firms of Pakistan. As the MNC firms belong to developed countries and follow corporate standards of developed countries therefore, this study can be generalized to cross countries due to inclusion of MNC firms in sample.

Eleventh, this study has presented the results as per the definition report by system GMM estimator which indicates that dynamic endogeneity is a significant concern of the model. Interestingly, GMM estimator has traced the existence of dynamic endogeneity across sample firms in all three samples and deem to be more appropriate model which validate the value of J-statistics (health of instrument) and fix the problem of endogeneity, autocorrelation, simultaneity and over-identification restrictions.

Finally, this study is beneficial for key stakeholders such as directors, managers, investors, regulators and policy makers in number of ways. This study has used four accounting ratios as control variables and developed their relationship with corporate governance which may help investors in better decision making about prospective investment. This study is useful for directors and manager for better understanding that how to increase the effectiveness of corporate governance practices at firm level. The findings of this study may helpful for policy makers and regulatory bodies in Pakistan such as Security exchange commission of Pakistan (SECP) and Institute of corporate governance of Pakistan (PICG). As this study, has included the sample of Multinational firms of Pakistan which belong to developed countries therefore, the finding of this study can be generalise to other developed and developing countries and may help in setting up new regulations, revision of policies and strengthening the existent regulations in terms of corporate governance.

12.8 Limitation of the study

There are few limitations of this study which are as follows.

This study has excluded family ownership as explanatory variable to avoid the problem of multicollinearity and reverse causality. This study has used the directors' ownership and associated ownership as explanatory variables which are part of family ownership as most of family owned firms have both types of ownership such as, directors and associated ownership at the same time. Therefore, if the family ownership is taken as explanatory variable then it's not appropriate to take directors' ownership and associated ownership at the same time otherwise estimation of model may be biased due to the problem of multicollinearity and reverse causality. The family ownership can be taken as explanatory variable with the combination of non- family ownership and may examine that how family and non-family ownership may impact differently on firm performance.

There are various firms' which governance data is not available for consecutive twelve years (2003-2014). Therefore, the firms with missing data in twelve years are excluded from sample and finally 259 non-financial listed firms selected for data analysis. Despite this, the sample size of this study is 259 firms' non-financial firms which is larger than any previous study of Pakistan.

There are few variables related to corporate governance mechanism such as Research and Development (R&D), Nomination committee and Remuneration committee which are not part of this study due to the non-availability of data.

Chapter 13 Appendix

Table: 13.1
Summary of Hypothesis (Full sample)

No	Content	Results
H1A	*The board size is positive and significantly associate with firms' performance (ROA).*	*Accepted*
H1B	*The board size is positive and significantly associate with firms' performance (MB Ratio).*	*Rejected*
H2A	*There is no significant association between presence of female board and firm performance (ROA).*	*Accepted*
H2B	*There is no significant association between presence of female board and firm performance (MB Ratio).*	*Rejected*
H3A	*Presence of non-executive director has significant and positive impact on firm performance. (ROA)*	*Rejected*
H3B	*Presence of non-executive director has significant and positive impact on firm performance. (MB Ratio)*	*Rejected*
H4A	*Frequency of Board meeting has positive and significant impact on firm performance. (ROA).*	*Rejected*
H4B	*Frequency of Board meeting has positive and significant impact on firm performance. (MB Ratio).*	*Rejected*
H5A	*Audit committee size is positive and significantly associated with firms' performance (ROA).*	*Rejected*
H5B	*Audit committee size is positive and significantly associated with firms' performance (MB Ratio).*	*Accepted*
H6A	*Director's ownership has positive and significant impact on firm performance (ROA).*	*Rejected*
H6B	*Director's ownership has positive and significant impact on firm performance (MB Ratio).*	*Rejected*
H7A	*Institutional ownership has positive and significant impact on firm performance (ROA).*	*Rejected*
H7B	*Institutional ownership has positive and significant impact on firm performance (MB Ratio).*	*Rejected*
H8A	*Associated ownership has positive and significant impact on firm performance (ROA).*	*Accepted*
H8B	*Associated ownership has positive and significant impact on firm performance (MB Ratio).*	*Rejected*
H9A	*Ownership concentration has negative and significant impact on firm performance(ROA)*	*Rejected*
H9B	*Ownership concentration has negative and significant impact on firm performance (MB Ratio)*	*Rejected*
H10A	*Firm size has positive and significant impact on firm performance (ROA).*	*Rejected*
H10B	*Firm size has positive and significant impact on firm performance (MB Ratio).*	*Rejected*
H11A	*Firm age has positive and significant impact on firm performance (ROA).*	*Rejected*
H11B	*Firm age has positive and significant impact on firm performance (MB Ratio).*	*Rejected*
H12A	*Leverage has negative and significant impact on firm performance (MB Ratio).*	*Accepted*
H12B	*Leverage has negative and significant impact on firm performance (MB Ratio).*	*Rejected*
H13A	*Impact of corporate governance is not similar in different economic period (All Firms).*	*Accepted*
H14A	*Sample Firms has better corporate governance practice in pre-crisis period. (All Firms)*	*Accepted*
H14B	*Sample Firms has not a better corporate governance practice during crisis period. (All Firms)*	*Accepted*

Table: 13.2
Summary of Hypothesis (Local Firms sample)

No	Content	Results
H1C	*The board size is positive and significantly associate with firms' performance (ROA).*	*Rejected*
H1D	*The board size is positive and significantly associate with firms' performance (MB Ratio).*	*Rejected*
H2C	*There is no significant association between presence of female board and firm performance (ROA)*	*Accepted*
H2D	*There is no significant association between presence of female board and firm performance (MB Ratio).*	*Rejected*
H3C	*Presence of non-executive director has significant and positive impact on firm performance. (ROA)*	*Rejected*
H3D	*Presence of non-executive director has significant and positive impact on firm performance. (MB Ratio)*	*Rejected*
H4C	*Frequency of Board meeting has positive and significant impact on firm performance. (ROA).*	*Rejected*
H4D	*Frequency of Board meeting has positive and significant impact on firm performance. (MB Ratio).*	*Accepted*
H5C	*Audit committee size is positive and significantly associated with firms' performance (ROA).*	*Rejected*
H5D	*Audit committee size is positive and significantly associated with firms' performance (MB Ratio).*	*Rejected*
H6C	*Director's ownership has positive and significant impact on firm performance (ROA).*	*Rejected*
H6D	*Director's ownership has positive and significant impact on firm performance (MB Ratio).*	*Rejected*
H7C	*Institutional ownership has positive and significant impact on firm performance (ROA).*	*Rejected*
H7D	*Institutional ownership has positive and significant impact on firm performance (MB Ratio).*	*Rejected*
H8C	*Associated ownership has positive and significant impact on firm performance (ROA).*	*Accepted*
H8D	*Associated ownership has positive and significant impact on firm performance (MB Ratio).*	*Rejected*
H9C	*Ownership concentration has negative and significant impact on firm performance(ROA)*	*Accepted*
H9D	*Ownership concentration has negative and significant impact on firm performance (MB Ratio)*	*Rejected*
H10C	*Firm size has positive and significant impact on firm performance (ROA).*	*Rejected*
H10D	*Firm size has positive and significant impact on firm performance (MB Ratio).*	*Rejected*
H11C	*Firm age has positive and significant impact on firm performance (ROA).*	*Rejected*
H11D	*Firm age has positive and significant impact on firm performance (MB Ratio).*	*Rejected*

H12C	*Leverage has negative and significant impact on firm performance (MB Ratio).*	*Rejected*
H12D	*Leverage has negative and significant impact on firm performance (MB Ratio).*	*Accepted*
H13C	*Impact of corporate governance is not similar in different economic period (Local Firms).*	*Accepted*
H13D	*Sample Firms has better corporate governance practice in pre-crisis period. (Local Firms).*	*Accepted*
H14C	*Sample Firms has not a better corporate governance practice during crisis period. (Local Firms).*	*Accepted*

Table: 13.3
Summary of Hypotheses (MNC Firms sample)

No	Content	Results
H1E	*The board size is positive and significantly associate with firms' performance (ROA).*	*Rejected*
H1F	*The board size is positive and significantly associate with firms' performance (MB Ratio).*	*Rejected*
H2E	*There is no significant association between presence of female board and firm performance (ROA).*	*Accepted*
H2F	*There is no significant association between presence of female board and firm performance (MB Ratio).*	*Accepted*
H3E	*Presence of non-executive director has significant and positive impact on firm performance. (ROA)*	*Accepted*
H3F	*Presence of non-executive director has significant and positive impact on firm performance. (MB Ratio)*	*Rejected*
H4E	*Frequency of Board meeting has positive and significant impact on firm performance. (ROA).*	*Accepted*
H4F	*Frequency of Board meeting has positive and significant impact on firm performance. (MB Ratio).*	*Rejected*
H5E	*Audit committee size is positive and significantly associated with firms' performance (ROA).*	*Accepted*
H5F	*Audit committee size is positive and significantly associated with firms' performance (MB Ratio).*	*Accepted*
H6E	*Director's ownership has positive and significant impact on firm performance (ROA).*	*Rejected*
H6F	*Director's ownership has positive and significant impact on firm performance (MB Ratio).*	*Rejected*
H7E	*Institutional ownership has positive and significant impact on firm performance (ROA).*	*Rejected*
H7F	*Institutional ownership has positive and significant impact on firm performance (MB Ratio).*	*Rejected*
H8E	*Associated ownership has positive and significant impact on firm performance (ROA).*	*Rejected*
H8F	*Associated ownership has positive and significant impact on firm performance (MB Ratio).*	*Rejected*

H9E	*Ownership concentration has negative and significant impact on firm performance(ROA)*	*Rejected*
H9F	*Ownership concentration has negative and significant impact on firm performance (MB Ratio)*	*Rejected*
H10E	*Firm size has positive and significant impact on firm performance (ROA).*	*Accepted*
H10F	*Firm size has positive and significant impact on firm performance (MB Ratio).*	*Accepted*
H11E	*Firm age has positive and significant impact on firm performance (ROA).*	*Rejected*
H11F	*Firm age has positive and significant impact on firm performance (MB Ratio).*	*Accepted*
H12E	*Leverage has negative and significant impact on firm performance (MB Ratio).*	*Accepted*
H12F	*Leverage has negative and significant impact on firm performance (MB Ratio).*	*Accepted*
H13E	*Impact of corporate governance is not similar in different economic period (MNC Firms).*	*Accepted*
H14E	*MNC, s Firms has better corporate governance practice in pre-crisis period.*	*Accepted*
H14F	*MNC, s Firms has not better corporate governance practice during crisis period.*	*Accepted*
H16E	*Overall, MNC, s Firms has better corporate governance practice than Local firms.*	*Accepted*
H16F	*Impact of corporate governance on firm performance is different in across sectors.*	*Accepted*

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