

**IMPACT OF CHARACTERISTICS OF BOARD ON EARNINGS  
MANAGEMENT OF THE FIRMS : EVIDENCE FROM PAKISTAN  
STOCK EXCHANGE**

**By**

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A research thesis submitted to the Department of Management and Social  
Sciences,  
Capital University of Science and Technology, Islamabad  
In partial fulfillment of the requirements for the degree of

**MASTER OF SCIENCES IN FINANCE**



**DEPARTMENT OF MANAGEMENT AND SOCIAL SCIENCES  
CAPITAL UNIVERSITY OF SCIENCE AND TECHNOLOGY,  
ISLAMABAD**

**January 2017**

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**Impact of Characteristics of Board on Earnings Management of the Firms  
: Evidence from Pakistan Stock Exchange**

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## **Dedication**

I dedicate this thesis to my teachers and family, who have been supporting me throughout the session towards completion of my coursework followed by final research thesis, pertaining to my MS (Finance) from Capital University of Science and Technology (CUST).

## **Acknowledgement**

All praise to Allah, the most merciful, kind and beneficent, and the source of all knowledge, wisdom within and beyond the comprehension. All respect and possible tributes go to last Prophet Muhammad (PBUH), who is forever guidance and knowledge for all of us.

I would like to express the deepest appreciation and thanks to my respected supervisor Mr. Muhammad Bilal Saeed for his patience, motivation and continuous support in completion of my MS thesis.

I am indebted to all my teachers who have been helping, guiding and supporting me throughout my session towards completion of coursework followed by final research thesis, pertaining to my MS (Finance) from Capital University of Science and Technology (CUST).

I am thankful to my family and colleagues (bosses) for their continuous encouragement, despite of family commitments and professional engagements. Nonetheless, I can never reciprocate the love and prayers of my parents, enabling me to achieve this milestone in my life (Shukar Alhamdulillah).

**(Raheel Sajjad)**

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**List of Abbreviations:**

BI	Board Independence
BS	Board Size
BoD	Board of Directors
CEO	Chief Executive Officer
CEOD	CEO Duality
CCG	Code of Corporate Governance
CG	Corporate Governance
DA	Discretionary Accruals
EAD	Economic Affairs Division
GAAP	Generally Accepted Accounting Principals
GD	Gender Diversity
IFC	International Finance Corporation
INSTO	Institutional Ownership
OECD	Organization of Economic Cooperation and Development
PICG	Pakistan Institute of Corporate Governance
SBP	State Bank of Pakistan
SECP	Security and Exchange Commission of Pakistan
WB	World Bank

## Abstract

*Board of directors play a significant role in regulating earnings management practices that arise as a result of agency issue between managers and shareholders. The purpose of this research thesis is to examine the impact of key characteristics of board on earnings management of the firms listed on Pakistan Stock Exchange, over the period 2008 to 2014. For the study, a sample of 100 companies has been selected (excluding the financial sector companies, to avoid distortion in results due to different financial fundamentals). Modified Cross Sectional Jones Model (1995) has been employed for calculating discretionary accruals as proxy for earnings management. Moreover, key board characteristics examined in the study include board independence, board size, CEO duality, gender diversity and institutional ownership, while using firm size, leverage and profitability as control variables. The results depicted significant negative impact of board independence on earnings management, whereas CEO Duality and institutional ownership had a significant positive impact on earnings management. However, no significant impact of board size and gender diversity has been observed on earnings management.*

**Keywords:** Board characteristics (BoD), earnings management (EM), discretionary accruals (DA).

# **CHAPTER 1**

## **INTRODUCTION**

### **1.1: BACKGROUND OF STUDY**

#### **1.1.1: Corporate Governance (CG)**

According to Gill (2008), corporate governance has identified the rules and principals of business decision making that relate to the internal processes and mechanisms of firms. CG is a collection of norms and laws that serve to outline the relationships between boards of directors (BoD), managers and shareholders, in order to resolve agency issues. However, subsequent to the scandal of Enron, scope of CG has gone beyond the traditional focal point to cover reporting, corporate ethics, accountability, disclosure and role of BoD. Business entities have vowed their commitment to fair and honest CG principles to a large extent of business dealings and operations. Nonetheless, business entities are looking forward to pledge investors and regulators about effective transparency and accountability.

According to Javaid and Iqbal (2010), CG system defines who owns the company and formulates regulations / guidelines for distribution of profits / returns and economic benefits between shareholders, managers, employees and other stakeholders. Corporate governance system comprises of an extensive range of institutions and practices, from laws relating to financial disclosure and accounting standards, to compensation of executives, composition of BoD and board size. Therefore, a country's CG system has strong implications for organizations, their trading / business relationships, employment systems, business practices and capital markets.

CG is the system of rules, practices and processes by which a company is directed and controlled. Corporate governance essentially involves balancing the interests of a company's many stakeholders, such as shareholders, management, customers, suppliers, financiers, government and the community (Investopedia, 2017).

### ***Corporate Governance: From Agency to Accountability***

The basic conflict between interests of corporate managers and shareholders was initially highlighted by (Berlet and Means, 1932) and (Jensen and Meckling, 1976) in terms of agency issues that appeared when business entities had separated the ownership from management, leading to expectation from the managers to work in the interests of shareholders for maximizing shareholder-value. The managers' direct access to inside information and control over management gives them upper hand over other stakeholders. Although, the objective of a company's shareholders is profit on the respective investment, however managers may pursue other goals like prestige of managing a big corporate organization, power, entertainment etc. Therefore, business entities / corporations rely on CG mechanisms for resolving agency issue, enabling the shareholders / owners to trust on managers running the organization using their capital / investment. Afterwards, for many years, CG had been primarily linked with the shareholder primacy case, being completely concerned with functioning and structure of the BoD and its relationships with other corporate organs, while maximizing profits / wealth.

Researchers have presented various resolutions to address agency issue between managers and shareholders, including but not limited to monitoring, incentive alignment and discipline. For instance, Fama and Jensen (1983) recommended that managers' behavior in the interest of shareholders can be aligned by presence of an independent and deeply involved BoD. Moreover, competitive market based compensation plans and stock options could also be used for aligning the incentives of managers and shareholders. According to Jensen and Ruback (1983), a company that overlooks shareholder wealth is regimented by industry / market in the shape of hostile takeover. Similarly the CEO, ignoring maximization of shareholder interests is terminated by the BoD.

There are two most common approaches to CG for protecting investors' rights. One approach is concentrated ownership (i.e. shareholding by large investors) and other approach is use of legal protection for giving power to investors (e.g. legal prohibitions and rights protection against management's pursuit of self-interests) (Shliefer and Vishny, 1997).

Moving forward, big corporate scandals of the early 2000s warranted increased attention on CG as public policy topic. Furthermore, after the wave of high profile corporate corruptions scandals of Xerox, WorldCom, Enron, Tyco, Aldelphia, One-Tel, Parmalatand HIH etc (most of which were traced to earnings management), corporate governance aimed at corporate morals and ethical behaviors in accountability mechanisms, transparency, and disclosure. As a result, agency focus defined in old school CG evolved into a "new discipline" focused on ethics and accountability. Moving forward, corporate governance refers to the processes, rules, or laws under which a company is directed. These are intended to ensure fairness, transparency, and accountability in its relationship with all stakeholders. (Standard and Poor's, 2003).

### ***Corporate Governance (CG) in South Asia***

Process of enriching the finest practices of CG is a continuous phenomenon. To promote CG practices, the Organization for Economic Cooperation and Development (OECD) and the World Bank (WB) have also joined hands. Taking lessons from the 1997 Asian financial crisis, OECD is playing a vital role to assess progress on CG, formulating policy objectives and useful reforms for improving CG in Asia.

OECD has also developed a set of CG principles / rules in 1999 that later became the basic / primary template for evaluating CG arrangements in a country. Pakistan, India and Sri Lanka have already recognized the significance of CG. Issuance of codes of corporate governance and relevant regulations has lead to increase in transparency in the Asian countries.

1. India has issued Code of CG in year 1998
2. Pakistan issued Code of CG in year 2002
3. Sri Lanka issued Code of CG in year 2008

OECD and WB have also organized regional CG conferences and evaluation of CG in cooperation with regulators, sovereign policy makers and other market stakeholders.



## ***Corporate Governance, Institutional Framework and Legislation in Pakistan***

The Asian financial crisis and big corporate failures (e.g Enron) warranted the need to have effective institutional framework in order to strengthen CG, which can play a key role in developing a country financially. The strong institutional structure supports effective business management and development of capital markets with vide CG practices to enhance value for shareholders.

In Pakistan, biggest landmark towards improvement of regulatory framework for capital markets is the incorporation of SECP (Security & Exchange Commission of Pakistan). SECP dominated CLA (Corporate Law Authority, a Government department associated with Ministry of Finance) in Pakistan. SECP (The Commission) has been established pursuant to the SECP Act 1997, which became operational in January 1999. In compliance with approved law / regulations, SECP has following Divisions:

1. Company law division.
2. Specialized companies division
3. Securities market division
4. Human resource and training division
5. Finance and admin division
6. Insurance division.

Moreover, SECP is also administering many laws, including but not limited to:

1. Company ordinance 1984 (amended and implemented in 2002)
2. SECP Act 1997
3. Modaraba companies & Modaraba (Floatation & Control) Ordinance 1980
4. Securities and Exchange Ordinance 1969
5. Insurance Ordinance 2000 (previously Insurance Act 1938)

SECP promotes the principles of CG in the business sector and safeguards investors by taking necessary measures in connection to policy and enforcement, while playing the role of an effective and dynamic regulatory body. The functions of SECP also include development of an efficient and modern corporate sector and capital market, relying on international standards of regulatory and legal principles.

SECP issued Code of CG in March 2002 for strengthening of regulatory framework and enforcement of best CG practices in Pakistan. The code included commendations according to widely used international practices. The Code of CG has also emphasized BoD reforms in order to ensure accountability towards all shareholders, transparency, accountability and improved disclosure through stringent audits (internal and external). The said code of CG is a key milestone towards CG reforms in Pakistan.

Moreover, the following publications and initiatives of SECP have strengthened CG and promoted it as an area of research with significant importance for the corporate sector:

For publicly listed companies

1. Code of corporate governance 2012
2. Implementation schedule of code of CG 2012
3. CG Code 2002
4. Code of CG 2002 provisions omitted for being part of the legal framework
5. Director training programs

Public Sector Companies

1. Public sector companies (appointment of chief executive) guidelines 2015
2. Circular 12 of 2014 regarding corporate governance of public sector companies
3. Public sector companies corporate governance rules 2013
4. Amendment in the public sector companies corporate governance rules July 2013
5. Corporate governance compliance guidelines 2013

Moreover, the CG aspect of commercial banks also gained deep importance in emerging economies. In 2006, Pakistan Institute of Corporate Governance (PICG) arranged a conference, in coordination with State Bank of Pakistan (SBP) and International Finance Corporation (IFC), on banking sector reforms. The said conference emphasized the need for best CG practices in banking industry of Pakistan. Furthermore, SBP has also devised the regulatory structure for banking sector and also issued guidelines for promoting CG in Pakistan.

ICGOP (Institute of corporate governance of Pakistan) has also been established as a non-profit organization as per Section 42 of the company ordinance 1984, for promoting CG in Pakistan. Founding members of ICGOP include SECP, SBP, Pakistan Stock Exchange and banks & insurance companies.

Nonetheless, regulatory bodies / stakeholders are continuously reviewing corporate laws for necessary amendments / enrichments in existing laws to stay at par with international best practices of CG.

### ***Code of the Corporate Governance (CCG) and Assessment of Corporate Governance (CG) in Pakistan***

As mentioned above, the CCG was released in March 2002 by SECP for promoting governance, transparency and protecting the investors' interests. ICMAP and Stock Exchanges have also played a key role in development of Code of Corporate Governance by SECP, which includes guidelines from best practices of CG accepted and followed worldwide.

Code of Corporate Governance (2002) is aimed at establishment of a system, directing and controlling a company by its BoD in compliance with the best / widely accepted practices of CG for safeguarding the interests / stakes of a diversified group of stakeholders. The code has emphasized transparency and openness in all business affairs / decision making process, demanding board of directors to fulfill their responsibilities / obligations transparently, diligently and in a timely manner, in the best interest of all stakeholders. The code has also proposed to structure the BoD composition by introducing broad representation of minority shareholders and a mix of executive & non-executive directors. According to code, all companies listed on stock exchange have to circulate a review report of their compliance on CG practices, along with their annual reports. The prominent clauses of Code also include the requirement for listed companies to establish audit committees and internal audit functions.

Corporate governance regulations had been enforced through following:

1. For the implementation of CCG and development of strong regulatory mechanism for CG in Pakistan, a project was also launched by SECP in association with UNDP and Economic Affairs Division (EAD) of GoP in August 2002.
2. Later in year 2007, SECP, IFC and ICPG conducted a Survey on CG in Pakistan, targeting the local listed companies, large non-listed companies and financial institutions. The survey report identified a need for developing awareness among BoD of companies about the usefulness of Code of Corporate Governance, for effective implementation of Code in letter and spirit. Subsequently, SECP devised a development program in coordination with IFC and conducted a series of workshops in alliance with PICG, for promoting understanding of CG and responsibilities of boards of directors.
3. Asian Development Bank (to improve corporate governance enforcement programs) and World Bank (to build awareness and training) are also providing technical support to SECP
4. Institute of Chartered Accountants of Pakistan (ICAP) is also performing some self regulatory functions towards monitoring and implementation Code of CG.
5. Pakistan Stock Exchange has also established a unit in the Company Affairs Department Board and a Board Committee also, for monitoring the compliance of code of CG.
6. Shareholders can demand information directly from the company and enjoy the privilege of participation in Annual General Meetings (AGM) of the company.
7. Shareholders' approval is mandatory for increasing authorized capital, making any amendment in company articles or sale of major assets.
8. BoD are elected through a voting mechanism and can be removed / terminated through a resolution by shareholders.
9. Companies are required to report the pattern for major shareholdings in annual report. Moreover, details of shareholders owning 10% or above voting capital are also required to be disclosed in annual reports.
10. Duties of BoD have been clearly defined in the code, along with the requirement of working with independent judgment and inline with the company's best interest.
11. The code has also strengthened the role of non-executive directors by limiting the %age of executive director to 75% in non-financial firms and suggesting institutional ownership / representation.

The development and implementation of code of CG has promoted accountability, responsibility and transparency in financial sector and corporate sector reporting, thus improving the business environment and corporate structure. Furthermore, quality of disclosures has also improved over the past few years based on enhanced monitoring role played by SECP and emphasized by relevant laws and regulations. Nevertheless, looking at the challenges of CG in Pakistan, it is pertinent to highlight the following:

1. Directors' responsibility towards other shareholders becomes more critical, in companies where families dominate shareholding / board.
2. In case of business groups / pyramid structures and cross holdings it becomes difficult for outside stakeholders to recognize ownership structures of corporations.
3. In case of big business groups, BoD are dominated by non-executive and executive individuals of controlling families and proxy directors acting on behalf of such business groups.
4. Various important business decisions are not made by board in the annual general meetings, in case of foreign and state owned companies where there is frequent relation between management and owners.

### **1.1.2: Earnings Management**

According to Hepworth (1953), earnings smoothing is about harmonizing the trend of periodic income variations. Davidson et al (1987) explained earnings management as a procedure of taking measures to derive a certain required level of earnings, within constraints of GAAPs.

Schipper (1989) explained earnings management as a form of disclosure management with the purpose of intervention in the external financial reporting, aimed at obtaining private gains. Earnings management can be of following types:

1. Income smoothing
2. Aggressive income smoothing
3. Misrepresentation aimed at fraudulent financial reporting

In connection to the above, it is pertinent to mention that income smoothing is done without deviation from GAAP, whereas financial misrepresentation denotes fraud and violation of GAAP.

Studies have explained a number of reasons for earnings management, which includes the proposition that stable earnings flow ensures higher dividends than volatile earnings flow. Moreover, variations in earnings is viewed as riskiness of company and carry a straight effect on capitalization rates and subsequent value of the company's share, as it affects the expectations of investors with respect to company's future earnings / profits and dividends (Burgstahler and Eames 1998).

Healy & Wahlen (1999) explained that the very common reason behind earning management is the motive to ensure job security and obtain higher compensation. They explained earnings management as the tool whereby managers alter / change financial reports, aimed at either misleading stakeholders on economic results of the firm / influencing outcomes that depend on accounting numbers reported by the management. Management's use of judgment in financial reporting entail benefits as well as costs. Through earnings management, the managers gain benefit of communicating credible private information to stakeholders, while the cost of earnings management is potential misallocation / misuse of organizational resources.

Earnings management is also denoted as playing with the accounting principles (GAAPs) and methods to convey the desired level of management's decision making with reference to future cash inflows / outflows (Sankarand & Subramanyam, 2001). Earning management is a preventive step to avoid a loan default situation with the objective of increasing the regulatory benefit and reduction in regulatory costs. Earnings management activities focus on objective to shape stakeholders' perceptions about company are viewed unethical, despite being within / in compliance of GAAPs. In nutshell, the earnings management practice has an objective to obtain benefit, linked to the management's effort in controlling certain earnings or profits for purposes, directly or indirectly associated with company's interest (Cornett et al., 2008).

With regards to differences between public and private companies, various studies have supported the argument that public companies are more prone towards earnings management

as compared to private companies (Beatty et al., 2002). Earnings management by public and private firms differs in two different implications:

1. Accounting has a key role in evaluation of performance in case of public firms with lower concentration of ownership and lower managerial ownership (ke et al., 1999). As a result of this, managers in public firms are more prone to managing earnings with the objective of either maximizing accounting bonuses (Guidry et al., 1999) or avoiding declaration of a weak profit that can lead to management's dismissal / termination (Fudenberg and Tirole, 1995).
2. Secondly, accounting has more important role in communication with current and potential shareholders, in case of public firms with highly diffused ownership (Ball and Shivakumar, 2005).

### **1.1.3: Corporate governance in the context of earnings management**

The International Financial Reporting Standards (IFRS) allow firms' managers greater flexibility in choosing from among alternative accounting treatments. These choices can have different effects on a firm's reported income. Islam, Ali, and Ahmad (2011) argued that managers tend to prefer accounting choices that benefit them economically. The likelihood of this opportunistic behavior rises in the presence of weak governance structures, eventually causing the quality of reported earnings to deteriorate and reducing investors' confidence in financial reports (González & García-Meca, 2014). This opportunistic behavior, known as earnings management, entails the creative use of accounting techniques in such a way that the financial reports produced give an overly positive picture of firms' business activities and financial position. Earnings management can include changes in the estimated amount of assets impaired, the volume of bad debts written off, the amount of inventory recorded, the estimated useful life of long-term assets, and estimated post-employment benefits and warranty costs (McKee, 2005).

Prior studies suggest that good governance is crucial in monitoring managerial activities because it helps reduce agency costs by aligning the interests of the management and owners. Several studies have examined the role of corporate governance in earnings management and found that good governance can effectively constrain managers from being involved in

earnings management practices (Jiang, Lee, & Anandarajan, 2008; Dimitropoulos & Asteriou, 2010; Alzoubi & Selamat, 2012; González & García-Meca, 2014).

#### **1.1.4: Importance / Motivation of Study**

##### ***Corporate Governance (CG) and Role of Board of Directors (BoD)***

As defined in agency theory, separation of control and ownership results in divergence of interests among the shareholders and managers, which warrants close monitoring of managerial decisions for/by BoD to ensure that the interest of shareholders are secured, while ensuring transparency in financial reporting. Therefore BoD play a vital role in monitoring and disciplining the management, ensuring that managers' pursuit of objectives is aligned with the shareholders interests. As such, BoD play a pivotal monitoring role in evaluating and ensuring reliability and quality of financial reports.

Subsequent to the Asian financial crisis of 1997, corporate entities / community started raising questions on the efficiency and effectiveness of CG practices. Later on, high profile accounting scandals of Xerox, WorldCom, Enron, Tyco, Aldelphia, One-Tel, Parmalat and HIH also (a) pushed-up severe questions on CG practices and (b) demanded increased emphasis on transparent financial reporting and weak controls (internal systems) in companies.

CG codes that have been developed worldwide, present the guidelines for improving accuracy and quality of accounting information / financial reports. Moreover, role of BoD, has also been given due importance for restricting earnings play-around and communicating transparent information on company's earnings and operations (Young et al., 2008).

Management usually has self interested motives to manage earnings and mislead the shareholders, therefore in such situation the monitoring and review of financial / accounting reports by BoD because important. Since the BoD are entrusted by investors in governing the management, as such it is a key responsibility of BoD to ensure that stakeholders receive quality disclosures in connection to accounting / financial reports and operating results of the company.



### ***Board Characteristics***

On the basis of previous literature, earnings management has been viewed as a hidden agency cost, since managers with the objective of achieving their personal interests play with accounting numbers / earnings, misleading the shareholders. Therefore, the BoD should play a vital / key role in constraining the intensity of earnings management. Several studies have presented proved significance of board characteristics in monitoring financial reporting and subsequent impact on earnings management. Furthermore, prior researches have also suggested that credibility of financial /accounting reports can be ensured through effective BoD monitoring. Few of the important board characteristics are CEO Duality (i.e. CEO holding the position of the chairman of board also), Board Size (number of board members), Board Independence (non-executive directors in board), Gender Diversity and Institutional Ownership.

Hence, it is concluded from the above discussion that this study of impact of board characteristics on earnings management in Pakistan shall provide fruitful findings to the stakeholders towards reduction in earnings management by capitalizing on board characteristics.

## **1.2: THEORETICAL BACKGROUND / EVIDENCE**

### **1.2.1: Corporate Governance and Earnings Management link in the light of “Agency Theory”**

The basic conflict between interests of corporate managers and shareholders was initially highlighted by (Berlet and Means, 1932). Later, the influential findings of Alchian and Demstet (1972) and Jensen and Meckling (1976), described the firm as a nexus of contracts between individual factors of production leading to birth of **agency theory**. Jensen and Meckling (1976) further defined firm as a legal fiction, wherein contractual relationships maintain equilibrium among the conflicting objectives of various individuals. These contractual associations include relationships with employees, suppliers, customers, creditors and other stakeholders.

Separation of control and ownership is the basic cause of agency issue i.e. how to ensure that the agents (managers) work in the interests of principal (shareholders). Jensen and Meckling (1976) proposed agency-principal relation in a corporation / firm to explain the agency issue. Managers can exploit the assets of company or consume privileges, for achieving their personal benefits. The extend of such privileges used for personal / private benefits is related to the proportion of management's ownership in the business i.e. less ownership of management lead to higher exploitation of organizational assets and privileges for achievement of private benefits, due to less incentive in maximizing shareholders' wealth. This conflict in principal-agency relationship between managers and shareholders, warrants incurring agency costs. Jensen & Meckling (1976) also defined agency costs as (a) total costs incurred by principal, for monitoring the abnormal activities of agent (b) bonding expenses incurred by agent, aimed at guaranteeing that activities of the agent would not cost the principal or that the principal would be compensated if such actions happen (c) the dollar equivalent to reduction of welfare as a result of the divergence between the agents decisions and those decisions that would maximize the welfare of the principal (i.e. residual loss).

Fama and Jensen (1983) also discussed agency issue in the context of separation of ownership and control in the corporations / firms, whereby the control of business is in the hands of managers and ownership of the firm is with the shareholders. The issue becomes critical, when managers have no ownership stake in business leading to no effect of earnings maximization on the manager's wealth. Therefore, keeping in view the same, manager's decision making may not be focused on maximization of shareholder wealth. In this condition, the agency issue intensifies, which demands need to take measures to address the issue.

In terms of corporate governance, the agency role of directors is aimed at ratifying management decisions, in order to best serve the shareholders / avoid earnings management practices aimed at achievement of personal interests / gains. As such, the role of BoD has been widely discussed by researchers in the past. According to Daily, Dalton & Cannella (2003), the previous studies on CG point at two components of agency theory. The first component is that human beings being focused on their self interest are not inclined towards / not ready to forego their private interests in front of the interests of others humans / organizations. The second component defines that there are two only participants in

organizations i.e. managers and shareholders, whereby, it is assumed that the interests of both of the said stakeholders are consistent and clear.

Plenty of the research in CG is linked with agency theory, which explains CG as a mechanism to address the issues relating to agent-principal relationship, where the board of directors plays a key monitoring role (Mallin, 2004). As the ownership characteristics vary from country to country, accordingly the nature and severity of agency problem also varies. For instance, large dominant shareholding and concentrated ownership in certain countries, support stringent control on managers and restrain minority shareholders from gaining private controls for their benefits. However, in various other countries where there is dispersed ownership, if investors diverge with the interest of management or if they are not pleased with performance of firm, they go for exit options leading to reduction in market price of the company's share (Spanos, 2005).

Agency role of the directors can be explained as the governance function of the BoD in serving the owners / shareholders by monitoring management decisions and ensuring that shareholders interests are not jeopardized by management's practices of earnings management and misreporting / non disclosure of accounting information. This role of board has been examined largely by the researchers in the past (Fama& Jensen, 1983; Baysinger & Butler, 1985; Lorsch & MacIver, 1989; Baysinger & Hoskisson, 1990; Daily & Dalton, 1994). Furthermore, vast body of research / literature has also examined the importance of board composition / characteristics in monitoring CG function (Pearce & Zahra, 1992; Barnhart, Marr & Rosenstein, 1994; Daily & Dalton, 1994; Gales & Kesner, 1994; Braga & Black, 1998; Kiel & Nicholson, 2003;), since the primary responsibility of the BoD is towards maximizing shareholder value.

As evident from the above, separation of control and ownership warrants close monitoring of managerial decisions by BoD to ensure that the interest of shareholders are secured, while ensuring transparency in financial reporting and avoiding earnings management practices. In the literature, earnings management has been viewed as a hidden agency cost, since managers with the objective of achieving their personal interests play with accounting numbers / earnings, misleading the shareholders. Asian financial crisis of 1997, and later high profile accounting scandals of Xerox, WorldCom, Enron, Tyco, Aldelphia, One-Tel, Parmalat and HIH raised serious questions on efficiency and effectiveness of Corporate Governance

practices in companies. Subsequently, CG codes that had been developed worldwide, present the guidelines for improving accuracy and quality of accounting information / financial reports. Nonetheless, role of BoD, has also been given due importance for restricting earnings play-around and communicating transparent information on company's earnings and operations (Young et al., 2008). In nutshell, the previous studies have also supported the role BoD / Board Characteristics in reducing managerial earnings management practices.

### **1.2.2: Other theories linked with corporate governance**

Other theories linked with corporate governance are stakeholder theory, resource dependency theory, stewardship theory, social contract theory, legitimacy theory and stewardship theory. Stakeholder theory emphasizes on satisfying the stakeholders by maintaining a balance towards fulfilling the interest and needs of diversified group of stakeholders belonging to a constituency where the firm is operating (Abrams, 1951). Resource dependence theory is focused on environmental connections among the company / firm and its outside resources, whereby the firm / company is linked to the external factors (required for running the business) by the directors (Pfeffer and Salancik, 1978). Moreover, Gales & Kesner (1994) defined resource dependency rule as BoD's authority to reduce uncertainty by arranging resources required for running the business. In contrary to agency theory, stewardship theory supports the argument that managers act as good stewards and work in the interest of owners / shareholders (Donaldson & Davis 1991). Therefore, stewardship theory does not support the necessity to separate the role of CEO from Chairman of BoD, by encouraging appointment of single person for both positions i.e. CEO and Chairman, along with majority of executive directors on board instead of non-executive directors (Clarke 2004). Social contract theory views society as a sequence of social contracts between members of society and the society itself (Gray, Owen & Adams 1996), whereby integrated social contract theory was developed by Donaldson and Dunfee (1999), as a mechanism for executives / managers to do decision making ethically while keeping in view the macro-social contracts (i.e. communities and their expectation for support from business towards local community) and micro-social contracts (i.e. firm specific involvements). Legitimacy theory supports the notion that there is a social contract between a firm and the society. As the business entities work in a society with permission / right given by society to use resources, therefore the business entities are accountable to society for its operations and way of doing business (Deegan 2004). Nonetheless, political theory suggests that public interest is much reserved, since the

government participates (i.e. political influence) in business / corporate decision making, keeping in view the cultural challenges (Pound, 1983). As such, a country's government carries a powerful political influence on corporations, as a result of which politics is making its way / place in the governance /CG structures of corporations / business entities (Hawley and Williams, 1996).

### **1.3: PROBLEM STATEMENT**

The important role of the BoD in monitoring financial reporting and thereby mitigating the exploitation of accounting information for earnings management cannot be overlooked. Therefore, this study is aiming at highlighting the attributes / characteristics of the board of directors (BoD) that play significant role in mitigating earnings management practices i.e. impact of characteristics of board on earnings management.

### **1.4: RESEARCH QUESTIONS**

The main research question is to investigate “Is there any impact of characteristics of board of directors on earnings management by the companies listed on Pakistan Stock Exchange”. The specific questions are:

1. Is there any relationship between board independence and earnings management?
2. Is there any relationship between board size and earnings management?
3. Is there any relationship between CEO duality and earnings management?
4. Is there any relationship between gender diversity and earnings management?
5. Is there any relationship between institutional ownership and earnings management?

### **1.5: RESEARCH OBJECTIVES**

The main objective of the study is to investigate / examine the “impact of characteristics of board of directors (BoD) on earnings management by the companies listed on Pakistan Stock Exchange”, wherein the BoD characteristics include board independence, board size, CEO duality, gender diversity and institutional ownership.

## **1.6: SIGNIFICANCE OF THE STUDY**

Pakistan stands as one of the Asian countries with developing economies and having a strategic geographical location on the map. Moreover, Pakistan's stock market is also viewed as an attractive option by the local and foreign investors, which is evident from the fact that Karachi Stock Exchange had been one of the best performing markets in the world for a number of years in the past (declared by the international magazine "Business Week" also). Users/investors to a large extent rely on accounting information for making investment and other decisions, therefore it is of huge significance to investigate the subject topic of earnings management to devise measures for protecting users/investors from being misled.

On the other hand, for those stakeholders who want to align management's interests with the interests of shareholders by avoiding earnings management, the results of research thesis would provide them with a set of board characteristics which can have a favorable contribution towards reduction in earnings management practices.

This study has examined the effectiveness of board of BoD in controlling / mitigating earnings management practices. Results of this research can be used by regulatory bodies (SECP etc) to enrich the corporate governance laws and devise necessary regulations to empower the supervisory role of BoD in Pakistan. Based on the findings of this study, regulatory authorities can take measures towards improving the process of appointing directors. This is especially relevant during economic downturns when firms may not be performing and thus managers may resort to manage their earnings to render a better picture so as to maintain their share prices and their job security. Further studies in this area can assist the tax authorities also in their quest to net more taxes by targeting earnings management practices aimed at tax evasion.

As evident from the past literature review, significant research work has not been done on earnings management in Pakistan after the work of Shah, Butt and Hasan (2009) who examined the effect of CG quality on earnings management in Pakistan using a sample of companies listed on stock exchange while covering data for the year 2006. As such, this research study is contributing to the literature by covering subsequent data period from year 2008 to 2014 to provide evidence on impact of BoD characteristics on earnings management practices in Pakistan.

Findings of this research thesis will be of interest to future researchers as well by opening / highlighting further research avenues. For instance, further studies can be done to investigate earnings management in large family run private companies and non-listed companies in Pakistan. Moreover, future research can be done for financial sector companies / banks as well. Nonetheless, earnings management practices in the context of initial public offerings (IPOs) and buy-outs can also be studied.

### **1.7: ORGANIZATION OF STUDY**

Chapter 1 (as detailed above) covers the introduction. Moving forward, Chapter 2 provides literature review, Chapter 3 is methodology, Chapter 4 consists of results and Chapter 5 incorporates conclusion and recommendations.

## **CHAPTER 2**

### **REVIEW OF LITERATURE**

#### **2.1: INCEPTION & EVOLUTION OF EARNINGS MANAGEMENT**

In the past, researchers from the field of accounting and finance have used various measures of earnings management in their analysis / research papers, however discretionary accruals is the most commonly used / widely accepted proxy of earnings management. In early literature, Healy (1985) talked about managers' practices of using accounting information and decisions aimed at achieving higher compensation i.e. when bonuses appropriated to the managers are linked with earnings, the situation inspires managers on reporting higher level of earnings for seeking higher bonuses and other compensation plans / benefits. In this regard, the managers play with accruals for (a) increasing the reported earnings numbers where bonus schemes benefit them with higher financial gains and benefits (b) decreasing the reported earnings numbers in the situation, when their bonuses have already touched the allowed / permissible limit. As such, Healy reported a significant relationship between volume of accounting accruals (as proxy of earnings management) and bonus schemes based on earnings. Later on, using accruals as proxy for earnings management became common / widely used tool in financial and accounting research. It is pertinent to mention that a firm's total accruals include both discretionary as well as non-discretionary accruals, therefore when total accruals are used as proxy for measure earnings management, non-discretionary accruals are assumed as constant overtime.

As detailed above, the use of accruals as proxy of earnings management became popular in literature after the paper of Healy (1985). After which, DeAngelo (1986) added that managers practice earnings management, to get advantages during management buyouts situations as well. Moreover, the earnings manipulation is done to affect the share price also, for purchasing shares at lower price. In this connection, DeAngelo also supported the argument that managers achieve low buyouts at lower price, as result of earnings management. For this study, DeAngelo used change in total accruals as proxy of discretionary accruals, based on the assumption that changes in accruals would depict deviation from the normal level of accruals.



Jones (1991) examined the evidence of earnings management done by firms during the period of import relief. The study covered the time period when US government announced / granted import relief subsidy for supporting the local business. However, in order to qualify for the relief, the firm had to prove that they had been damaged from the imports during the referred period. For the study, discretionary accruals were used as proxy for earnings management, calculating discretionary accruals as difference of total accruals and non-discretionary accruals. Moreover, total accruals were calculated by using linear regression technique (instead of change in accruals, as used by previous researchers), by regressing accruals on the elements that affected the volume of accruals, which included change in revenues and change in value of property, plant, & equipment. Residual term derived from the said regression was the part of total accruals that could not be explained by the above factors and was used as the proxy for discretionary accruals. The results of Jones study supported the notion that firms manipulated with accruals for showing decreased earnings to prove that they had been affected and this qualified them for claiming the import subsidy / relief from the government. Subsequently, the Jones model appeared as most widely used model, for predicting earnings management, by the researchers. Later on, the original model was further developed as modified Jones' discretionary accrual model (Jones, 1991; Dechow, Sloan, and Sweeney, 1995).

In addition to playing with accruals to get the desired level of earnings, corporations can also involve in another state of earnings management whereby the reporting of losses or earnings decline is dodged. In this regard, Burstahler and Dichev (1997) conducted a study and provided the evidence of (a) reporting small losses or earnings decline by a very low number of firms (b) reporting small positive earnings or little increases in their earnings by a large number of firms, which supported the argument that firms were involved in earnings management to hide losses or decline in earnings.

Manzalawy and Rwegasira (2013) examined whether Egyptian public listed firms used earnings management to influence stock prices upwards, in the event of initial public offerings. Study aimed at extending the earnings management literature into Egyptian capital markets as well as discussing few key implications relating to finance and accounting including accounting reporting standards setting, CG, as well as agency issues. The sample included the companies who engaged in initial public offerings (IPO). The study employed

Modified-Jones Model for calculation of earnings management practice. The findings, in relation to initial public offering supported the hypothesis that earnings management existed in the Egypt prior to the initiation of IPO process.

## **2.2: INCEPTION & EVOLUTION OF LITERATURE ON INTERLINKING OF CORPORATE GOVERNANCE & BOARD OF DIRECTORS CHARACTERISTICS WITH EARNINGS MANAGEMENT**

Jensen and Meckling (1976) proposed agency-principal relation in a corporation / firm to explain the agency issue. Managers can exploit the assets of company or consume privileges, for achieving their personal benefits. Jensen and Meckling reported that the extend of such privileges used for personal / private benefits is related to the proportion of management's ownership in the business i.e. less ownership of management leads to higher exploitation of organizational assets and privileges for achievement of private benefits, due to less incentive in maximizing shareholders' wealth. This conflict in principal-agency relation between shareholders and managers, warrants incurring agency costs, which include bonding costs, cost of monitoring and residual losses.

Fama and Jensen (1983) discussed agency issue in the context of separation of ownership and control in corporations / firms, whereby the control of business is in the hands of managers and ownership of the firm is with the shareholders. The issue becomes critical, when managers have no ownership stake in business leading to no effect of earnings maximization on the manager's wealth. Therefore, keeping in view the same, manager's decision making may not be focused on maximization of shareholder wealth. In this condition, the agency issue intensifies, which demands need to take measures to address the issue.

In addition to rights of shareholders, another essential element of CG is the appropriate structure of board of director. Beasley (1996) studied the role of BoD composition in preventing accounting frauds. According to results of the study, audit committee could not reduce the probability of accounting frauds, however large proportion of outside directors in board played significant role in controlling accounting frauds. Nonetheless, large tenure of outside directors also reduced the probability of frauds in companies.

Ayuso and Argandona (2007) explored the matter of organizing BoD composition in such a

manner that supports responsible CG from the perspective of good governance and CSR. Arguments presented by various theoretical approaches in the past with regards to relationship of BoD composition with firm's performance and CSR, were analyzed by Ayuso and Argandona. In contrast to findings of empirical research, results supported the argument that a diversified BoD promoted corporate social responsibility in a business entity, however simultaneously it increased board capital, which ultimately lead to improved financial performance of the firm.

As evident from the above literature, the previous literature has emphasized the need to examine and strengthen the role of BoD / board characteristics in reducing managers' ability to involve in earnings management practices. Moreover, most of the studies have used accruals as a tool for measuring earnings management, based on Modified Jones Model.

## **2.3: BOARD CHARACTERISTICS AND EARNINGS MANAGEMENT LITERATURE**

### **2.3.1: Work done in developing economies**

BoD of corporate entities and their internal monitoring mechanisms play a vital role in restricting the management's involvement in managing earnings, since it is the responsibility of BoD to ensure that the true and fair financial / accounting information is communicated to the stakeholders, by employing monitoring mechanisms to ensure that the managers' behavior is aligned with the stakeholders interests. Previous literature on role of BoD has also emphasized on the responsibility of BoD towards ensuring the reliability of the information incorporated in the financial reports released by the companies. Keeping in view the same, Siam, Laili and Khairi (2014) suggested a theoretical framework for investigating the link between earning management and various characteristics of BoD including board size, board independence, CEO duality, financial expertise of BoD and board meetings, by using a sample of firms from Amman Stock Exchange (ASE). The results of study proved that effective board reduced earnings management i.e. board independence, board size, financial expertise of BoD and board meetings had a negative relationship with earning management, whereas CEO duality had a positive relationship with earning management. Earlier, Abed, Al-Attar, and Suwaidan (2012) studied the impact of CG on earnings management among the companies listed on Amman Stock Exchange (Jordan), using Modified Jones Model to

calculate discretionary accruals, as proxy for earnings management. However, results did not depict any effect of CG on earnings management in Amman, unlike other countries. In this connection, Abed, Al-Attar, and Suwaidan attributed the unconventional results to the fact that majority of corporations in Jordan were owned by identifiable groups, therefore agency issue could not manifested itself, thus making the CG mechanism not applicable / unnecessary under such situation.

Yugroho and Eko (2011) examined the impact of board characteristics on earning management in Indonesia, by using a sample of firms listed on Indonesian Stock Exchange, covering the data period from year 2004 to 2008. The characteristics of BoD examined in the study included board independence, board size, CEO duality, managerial ownership, multiple directorships, audit committee, board tenure, and board interlock, along with impact of audit committee on earnings management. Jones Model Model (1991) modified by Dechow and Sloan (1996) was used for calculation of earnings management. The statistics supported existence of earning management in Indonesia, which was not affected by / linked with board independence, board size, managerial ownership, multiple directorships, board tenure and audit committee. However CEO duality affected the earning management practices. Swastika (2013) evaluated the impact of the corporate governance regulations implementation and firm size on the earning management for food and beverages companies in Indonesian Stock Exchange. Earning management was measured by Jones model with discretionary accruals. Corporate governance was proxied by board of director, audit quality, and board independence. On part of statistical technique, multiple regression was used to test relationship at 95% confidence, using data from the year 2005 for 51 food and beverages listed companies, including the composite index. The results showed that board of director and audit quality, as well as firm size were statistically significant in explaining earning management measured by discretionary accruals. In Indonesia, CG regulations were implemented in year 2005, but not all of food and beverages listed companies implemented the regulations in 2005. The conclusion was drawn from the findings that CG regulations issued in Indonesia after financial crisis of 1997, to ensure accountability & transparency in corporate sector, could not improve CG.

Mehrabian, Ansari and Pourheydari (2013) also investigated the effect of institutional ownership on accruals (discretionary as well as nondiscretionary). They used data for the period 2006 to 2010 for a sample of 66 listed companies of Iran, actively traded on Tehran

Stock Exchange. Variable size and length of the cycle operation was used as control variables. The results showed a significant positive relationship of institutional ownership with discretionary accruals and nondiscretionary accruals. BoD play a vital role in development of CG systems and regulations, aimed at monitoring the performance of management and limiting their opportunistic behaviors and manipulation in financial statements. In this regard, the BoD include members from institutional investors as well. As such, Emamgholipoura, Bagherib, Mansouriniaa and Arabic (2013) investigated the effect of institutional investors on earnings management. Discretionary accruals were employed as an indicator for earnings management. For the study, data covered the period from year 2006 to 2010 pertaining to 700 companies listed on Tehran Stock Exchange (TSE). The results indicated positive impact of institutional investors on earnings management, suggesting that enhancing ownership percentage of institutional shareholders increased earnings management. Furthermore, with regards to control variables, firm size had no relation with earnings management, however financial leverage and return on sales respectively had negative and positive relationship respectively, with earnings management. Earlier, Moradi, Salehi, Bighi and Najari (2012) studied the effects of BoD characteristics on discretionary accruals (proxy for earnings management) in Tehran, by using a sample of companies listed on Tehran Stock Exchange covering the data period from year 2006 to 2009. Employing Modified Jones Model, discretionary accruals were used as measure of earnings management. BoD characteristics studied in the research were presence of non-executive directors in board, CEO duality, BoD structure, size of board, gender diversity and change of board members, while control variables used in the study were size of firm, operating cash flows, leverage, performance and type of auditor. Multiple regression results indicated that a number of BoD characteristics which reduced earnings management in other countries did not play any role in earnings management reduction in Iran. However, reduction in operating cashflows, changes in board members and presence of nonexecutive directors in board, had a negative impact on earnings management, by restraining earnings management activities in Iran.

BoD play a significant role in regulating earnings management practices that arise as a result of agency issue between managers and shareholders. In this context, Soliman and Ragab (2013) studied the contribution of independent members on board, board size and CEO duality on earnings management practices in Egypt, by using data for the year 2007 to 2010 for a sample of 50 actively traded firms of Egyptian Stock Exchange. Moreover, they employed Modified Jones Model (1991) for calculating discretionary accruals as proxy for

earnings management. The relationship between dependent and independent variables was investigated by using firm size, leverage and growth as control variables. The results depicted that CEO duality had a positive impact on discretionary accruals (proxy for earnings management), whereas board size had negative impact on discretionary accruals, supporting the evidence that avoiding CEO duality and increasing board size could play a key role in mitigating earnings management. Moreover, Sukeechep, Yarram and Al-Farooque (2013) investigated the link between earnings management and characteristics of BoD, in Thailand, by using Performance Matched Discretionary Accruals Model and Modified Jones Model for calculation of earnings management. For the study, they used data of 550 listed companies of Thailand for the period 2006 to 2010, pertaining to earnings management (discretionary accruals) and BoD characteristics in terms of board independence, CEO duality, board size, board interlocking and board meeting. The results indicated no significant relationship of earnings management with board meetings, board size and CEO duality, however board independence had a positive effect on earnings management supporting the notion that in Thailand, outside directors possessed the strength to restrain managers from involvement in earnings management. On the other hand, board interlocking also had negative effect on earnings management, supporting the notion that directors holding positions in multiple BoD carried better expertise, knowledge and experience to monitor managers for restraining earnings management activities.

Aygun, Ic and Sayim (2014) investigated the effect of board size and corporate ownership (measured by managerial and institutional ownership) on earnings management by Turkish companies, by using data for the year 2009 to 2012, for a sample of 230 firms, listed on Istanbul Stock Exchange, belonging to various industries, excluding financial sector companies (e.g. insurance companies and banks) to avoid distortion in results due their distinctive capital structure / fundamentals. To study the effect of board size and corporate ownership on earnings management, they employed adjusted Jones Model (Dechow, Sloan and Sweeney, 1995) and multivariate regression, whereby return on assets, financial leverage and firm size were used as control variables. The results depicted significant negative impact of board size & institutional ownership and positive impact of managerial ownership on earnings management by the companies in Turkey. With regards to control variables, earnings managed was linked positively to return on assets and negatively to financial leverage.

Malaysian Code of CG issued by regulators is focused on role of external audit, audit committees and BoD. Saleh, Iskandar and Rahmat (2005) evaluated the effect of various characteristics of BoD in controlling earnings management practices, using Jones Model (1991) for calculating discretionary accruals (as a proxy for earnings management). The results depicted a negative impact of management ownership and positive impact of CEO duality on earning management, using firm size, performance and leverage as control variables. Moreover, multiple directorships also had a negative effect on earnings management, however the effect was significant only in case of companies with negative unmanaged earnings, suggesting the significance of multiple directorships in detecting management activities. Nonetheless, results depicted no connection between board independence and earnings management in companies with CEO duality. Later, Abdul Rahman & Ali (2006) investigated the affiliation between earnings management and board size in Malaysia, using a sample of companies listed on Malaysian Stock Market and employing Modified Jones Model for calculation of discretionary accruals (as proxy for earnings management). The results depicted a significant positive relationship between board size and earnings management. Subsequent to this study, Yand, Chun and Ramadili (2009) examined the significance of institutional shareholders and outside directorship in constraining earnings management behavior in Malaysia, while using a sample of 613 companies from various sectors including construction, industrial products and consumer products, covering data period from year 2001 to 2003. Moreover, size, leverage and cash flow from operating activities were used as control variables and Modified Jones Model with cross sectional approach was employed for calculating earnings management. The statistics indicated that earnings management in Malaysian listed firms had been equal to approximately 16% of prior year's assets, whereby most of the firms managed the earnings upward. However, the results did not depict any relationship between degree of earnings management and institutional shareholders and proportion of outside directors. Moreover, results also indicated weak evidence on impact of outside directors on earnings management practices in construction sector. As such, the conclusion was derived that adding more outside directors and having institutional shareholders could not reduce earnings management practices, if ownership of process for selecting outside directors had not been transparent and the firm had been highly concentrated. Mohammad, Abdul Rashid, and Shatter (2012) investigated the significance of CG mechanisms in restraining earnings management among

government associated companies in Malaysia, whereby the results proved effectiveness of few CG mechanisms on the volume of earnings management. Regression statistics depicted that CEO duality had a positive impact on earnings management, whereas increase in number of BoD meetings lead to reduction in earnings management. Results supported the notion that management's dual role supported opportunistic behavior leading to increase in earnings management practices. On the other hand, increased BoD meetings supported higher control on management / monitoring of management by BoD to limit earnings management activities. Moving further, Abdul Rauf, Johari, Buniamin and Abd Rahman (2012) examined the effect of BoD characteristics and company characteristics on earnings management activities in Malaysia, by obtaining data from annual reports of firms / companies for the year 2008. The sample consisted of 214 companies. Company characteristics were presented by cashflow from operations and firm size, however BoD characteristics were presented by race of BoD, board size, CEO duality, board independence and multiple directorship. Moreover, following the previous literature, discretionary accruals were used as the measure of earnings management. Results revealed a negative impact of management ownership and positive impact of CEO duality on earnings management, using firm size, performance and leverage as control variables. Examination of the results implied no significant link between ratio of independent board members and discretionary accruals in firms with CEO duality. However, the multiple directorships factor had a negative relationship with discretionary accruals, in companies having negative unmanaged earnings. As such, the results suggested that multiple directorships in Malaysian firms played an important role in reducing / controlling earnings management activities.

The managers play with accounting accruals for earning management, where they see incentives in doing so, by compromising on the interest of shareholders / owners. As such, the role of CG is to restrict / reduce the said conflict of interest / divergence of managers from shareholders' interests. Roodposhti and Chashmi (2010) examined the effect of CG, board independence, CEO duality and ownership concentration on the earnings management in Tehran. For the study, they used a sample of 196 companies listed on Tehran Stock Exchange, covering the data from the year 2004 to 2008. While controlling for firm size and leverage, panel data analysis revealed negative significant connection of ownership concentration, board independence and CEO duality with earnings management. Results also depicted a positive relationship of control variable (leverage and firm size) with earnings management. Ikechukwu (2013) examined the relation between CG mechanisms and



earnings management. Controlling for other characteristics, Ikechukwu examined internal and external mechanisms of CG, wherein the internal mechanisms included structure of BoD and ownership concentration and external mechanisms included take-over pressure and institutional ownership. Results depicted that firms with stronger external governance, such as higher institutional holdings and high take over pressure, managed earnings less, while firms with stronger internal governance, such as higher ownership concentration and smaller boards, managed earnings more. Thus, indicating that corporate governance impacted earnings management in most companies at different levels of performance.

Among other studies, Iraya, Mwangi and Muchoki (2015) investigated the effect of CG practices on earnings management in Nairobi, by using sample of 49 companies, actively traded on Nairobi Security Exchange (NSE), over the period from year 2010 to 2012. The objective of study was to investigate the effect of board size, ownership concentration, board independence, CEO duality and board activity on earnings management by the firms in Nairobi. The results depicted that board size, board independence and ownership concentration had negative relationship with earnings management, whereas CEO duality and board activity had a positive relation with earnings management. The findings of study also implied the necessity of strengthening CG by BoD of the listed companies of Kenya, aimed at restraining earnings management practices. Shen and Chih (2007) studied the link between CG and earnings management in Asian countries and found that effective CG mechanisms reduced earnings management activities. Statistics also revealed higher level of earnings management in larger size companies with higher growth. In nutshell, CG mechanisms played important role in restraining earnings management activities among Asian countries. Abed, Attar and Suwaidan (2011) investigated the impact of CG mechanisms on earnings management in Jordan, by using as sample of companies (excluding financial sector companies) listed on Amman Stock Exchange. They employed Jones Model for calculating discretionary accruals as measure of earnings management, over the period from year 2006 to 2009. The CG mechanisms examined in the study included board independence, CEO duality, board size and percentage of insider ownership, while using financial leverage and firm size as control variables. The results revealed that out of all the under review aspects of CG, only board size had a significant effect on earnings management. Moreover, Chekili (2012) explored the effect of certain CG mechanisms on earnings management practices in Tunisian firms, using Kothari, Leone and Wasley's Model (2005) for estimation of earnings management. The analysis was done for a sample of 20 companies listed on Tunisian Stock

Exchange for the period 2000 to 2009, totaling a number of 200 observations. Regression results proved the significant effect of board size, external directors and CEO duality on earnings management, whereas other BoD characteristics reviewed in the study had no effect on earning management by the firms.

### **2.3.2: Work done in developed economies**

Previous research has confirmed the presence of earnings management among financial reports of Australian and US companies changing CEO. As such, Mather and Ramsay (2006) investigated whether certain corporate characteristics linked with strong CG, were effective in restraining earnings management in the financial reports of Australian companies that changed CEOs. Results confirmed the presence of negative unexpected accruals in sub-sample of companies where the CEO resigned. Increase in board independence and board size had a negative effect on management. For period after CEO change, analysis found no positive unexpected accruals for CEO resignations and board characteristics also did not show any effect on unexpected accruals. Moreover, in the case of CEO retirements, positive unexpected accruals were observed in the period of CEO change. However, board characteristic did not have any significant association with unexpected accruals. Nonetheless, upon inclusion of lagged unexpected accruals in regression equation (for controlling accrual reversals), CEO duality significantly further increased positive earnings management found in CEO retirements in the period subsequent CEO change. Talbi, Omri, Guesmi and Ftiti (2015) did study to provide empirical support on the efficiency of board characteristics in restraining management opportunism, in terms of earnings management. To document practical evidence regarding the impact of the independence of audit committees and independence of boards of directors on real earnings management, they used data for a sample of 7,481 US companies covering the period from year 2000 to 2009. The regression analysis revealed that an independent BoD had a negative impact on degree of earnings management. In addition, board size had positive impact on earnings management, whereas board committees had no impact on earnings management. The results implied that when a board of directors was sufficiently independent, the need to establish independent committees was not unnecessary. Earlier, Cornett, McNutt and Tehranian (2009) confirmed that CG mechanisms significantly affected the degree of earnings management in big U.S. banks. For instance, few CG mechanisms like board independence reduced earnings management due to low ability of managers to influence. However, they also suggested that performance based

pays / compensation motivated the CEOs to manage earnings in pursuit of higher compensation. In a related study, Park and Shin (2004) examined the relationship between board composition and earnings management in Canadian firms. Results depicted negative effect of institutional shareholders on abnormal accruals. Moreover, outside directors had no significant role in restraining earnings management but BoD with members from financial institutions played significant role in constraining abnormal accruals. This evidence implied that, outside directors from financial institutions in particular had a significant role in reducing earnings management in Canada.

Baccouche and Omri (2014) explored the effect of multiple directorships of board members on earnings management in French listed firms. They used data of year 2008 for sample of 90 companies belonging to SBF 120 index, excluding financial sector companies, to investigate the effect of outside directorships on the volume of earnings management, while controlling for firm size and leverage. The results depicted that increase in board members with outside directorships lead to increase in earnings management. As such, the findings proved the argument that board of directors could deter earnings management effectively when its members held several additional outside directorships. Later, Lakhali, Aguir and Lakhali (2015) examined the effect of gender diversity on the boardroom and in top management positions on earnings management in French companies listed on stock exchange, covering the sample of 170 firms and data period of 4 years. The results depicted that increase in percentage of woman members in BoD lead to reduction in earnings management, revealing that women were effective on their monitoring role and considered as a crucial CG device. The analysis depicting the negative impact of minimum three women members in BoD on earnings management signifying that by increasing the number of women on board through regulation and legislation, were likely to enhance the effectiveness of the board to better detect earnings management. However, women position as CFO did not affect earnings management practices. As such, the findings implied that efforts made by political bodies to promote equality between men and women on boards were beneficial for restraining earnings management practices. However, regulating or announcing a quota of women on boards could create a temporal shortage of qualified women available to take up such positions.

Wang, Chuang and Lee (2010) examined the impact of BoD characteristics & composition earnings management on fraud, using data for the period 1999 to 2004 covering a sample of fraudulent companies listed on SEC and OTC in Taiwan. 89 fraudulent companies were

identified by searching the Commercial Times and Taiwan-based Economic Daily News, while pointing at firms that had been convicted by the courts of fraudulent financial reporting. Moreover, 89 non-fraudulent companies, as reported in the above referred financial media and matched according to SIC codes in the same industry, were also selected. Thus, total of 178 samples were applied in the study. Results depicted that discretionary working capital accruals had a negative effect on fraud. The finding also revealed no influence of CEO duality and Institutional director holding on fraud before the act of the independent directors and auditor, but CEO duality and Institutional director had negative effect on fraud afterwards. Nonetheless, interaction of discretionary accrual and independent director holding had positive effect on fraud after the act of the independent directors and auditor. Earlier, Zhu and Tian (2009) investigated the effect of CEO compensation and BoD characteristics on company's performance, while adjusting the performance for effect of earnings management, in Chinese listed firms, employing Modified Jones Model (1991) for detecting earnings management. The regression analysis depicted weak effect of CEO pay-performance and compensation on earnings management. Results also depicted that board independence and ownership concentration had a significant positive effect on firm's performance. The said results implied that the significance of board independence as better governance mechanism.

In Portugal the corporate decision making is dominated by large shareholders. In this regard, the previous literature has also suggested that the concentrated ownership structure restrained earnings management. Alves (2012) analyzed the relation between earnings management and corporate ownership structure in Portugal. For this purpose, they used a sample of 32 companies listed on stock exchange and covered data period from the year 2002 to 2007. The main purpose of research was to analyze whether a firm's ownership structure (in terms of ownership concentration, managerial ownership and institutional ownership) exacerbated or alleviated earnings management practices. The findings revealed that ownership concentration and managerial ownership had negative impact on earnings management, suggesting that ownership concentration and managerial ownership improved the quality of reported earnings by restraining earnings management. Man and Wong (2013) conducted the review of literature on CG and earnings management and revealed that CG played a significant role in reducing earnings management. They further highlighted the following:

1. Legal protection provided by institutions increased control on managers to restrict earning management.

2. Board independence had a negative effect on earning management practices.
3. Takeover situations increased pressures on managers to pursue shareholders interests.
4. Audit committees strengthened the quality of accounting information and transparency in financial reporting, in compliance with CG.
5. Female directors had been able to develop trust leadership, being risk averse towards frauds and earnings management.

This paper contributed to literature by examining various CG mechanisms and also reviewing the analysis of earnings management measures.

In other studies, Koh (2005) examined the association between income smoothing and institutional ownership. The results supported positive effect of institutional ownership on firm's smoothing of earnings. However, the association was not systematic across all firms. The positive association was most evident among profit firms with pre-managed earnings above their earnings trend. Moreover, no significant association was found for profit firms with pre-managed earnings below their earnings trend and loss firms in general. The results of this study highlighted the complexities in the relation between earnings management strategies and institutional ownership. Study also implied that while institutional ownership had a non-linear relation with income increasing earnings management, such relation manifested itself within the income smoothing framework in Australia. Koh also suggested that future researchers could benefit by explicitly examining the trade-offs between alternative earnings management incentives and the factors that affect the relative strength of these incentive trade-offs. Peasnell, Pope, and Young (2005) investigated the effect of board monitoring on earnings management in UK, by using a sample of firms listed on stock exchange. Results indicated no direct relationship between role of outside director or audit committee on earnings management. However, the relation between outside director and audit committee was significant. As such, findings implied that the effectiveness of outside directors in monitoring earnings management was dependent on role of audit committee. Moreover, Ahmed, Hossain, and Adams (2006) investigated the relationship between CG and annual accounting earnings informativeness in New Zealand and found negative impact of board size on earnings informativeness, whereas outside directors had no significant association with earnings informativeness.

### **2.3.3: Work in done in Pakistan**

The first significant study on earnings management in Pakistan was conducted by Shah, Butt and Hasan (2009), who examined the effect of CG quality on Earnings Management in Pakistan. For this purpose of study, they used a sample of companies listed on Karachi Stock Exchange covering data for the year 2006. They employed Modified Cross Sectional Jones Model for determining the discretionary accruals (as proxy for earnings management). On the other hand, quality of CG was measured by assigning weights to a set of related governance measures / variables. The analysis through ordinary least square estimation indicated unconventional positive effect of CG on earnings management, which was justified by the argument that Pakistani companies were passing through transitional phase after issuance of code of CG in 2002, which supported a tendency of increasing discretionary accruals by companies as a risk averse measure. Later on, Javid and Iqbal (2010) studied the relation between corporate governance, corporate valuation, ownership structure and need of external financing. For the study they used a sample of 60 non-financial sector firms listed on Karachi Stock Exchange and covered data period from year 2003 to 2008. They devised a rating system for measuring the company level governance, by using various aspects of CG including board composition, ownership/shareholdings, transparency, disclosure and auditing). The results depicted better CG practices in big size companies with better investment opportunities. The results also implied that higher investment opportunities resulted in higher ownership concentration, however the ownership concentration diluted significantly with increase in firm size. The findings also provided evidence of better CG and monitoring in family owned firms. The results suggested that good CG was practiced by firms seeking higher level of equity financing. Furthermore, the negative relationship was observed between external financing and ownership concentration. The results also revealed that the firms which practiced good CG, with concentrated ownership and large size, needed higher level of external finance for capitalizing on profitable opportunities. Nonetheless, statistics also depicted no effect of country's rule of law (when legal environment was weak) on firm's performance. These findings added an important tie to the explanations on consequences of weak legal environment for corporate valuation, external financing and CG. In nutshell, findings proved that CG Code 2002 had improved the governance of companies in Pakistan.

Even though annual reports of companies are supposed to depict an impartial and correct view of the entity's financial position, however in order to dodge expectations managers get involved in earnings management, to get benefit from stock prices, incentives, debt covenants etc. In this connection, Latif and Abdullah (2015) investigated the effectiveness of three attributes of CG (audit committee characteristics, board characteristics and ownership structure) in constraining earnings management practices. Augmented Jones model was employed to estimate discretionary accruals as proxy for earning management, using a sample of 120 companies listed on Karachi Stock Exchange (excluding financial sector companies) covering data period from the year 2003 to 2012. The results depicted a significant role of audit committee independence in restricting earnings management activities. Moreover, CEO duality and higher institutional equity shareholding was linked with higher level of earnings management. Furthermore, statistics also depicted that effectiveness of CG mechanisms varied for low-growth and high-growth firms, evident from the finding that CEO duality had a positive impact on earnings management in high-growth firms, however impact was not significant in low-growth firms. Similarly, institutional shareholding had a positively effect on earnings management in low-growth firms, however the effect was not significant in case of high-growth firms. Nonetheless, audit committee independence had a negative effect on earnings management for both low-growth and high-growth firms. As the earlier research suggested reduced earnings management through institutional shareholding and insider shareholding, the results of this study did not support any such evidence.

## **2.4: THEORATICAL FRAMEWORK & HYPOTHESIS DEVELOPMENT**

### **2.4.1: Agency Theory**

Jensen and Meckling (1976) proposed agency-principal relation in a corporation / firm to explain the agency issue. Managers can exploit the assets of company or consume privileges, for achieving their personal benefits. Jensen and Meckling reported that the extend of such privileges used for personal / private benefits is related to the proportion of management's ownership in the business i.e. less ownership of management lead to higher exploitation of organizational assets and privileges for achievement of private benefits, due to less incentive in maximizing shareholders' wealth. This conflict in principal-agency relationship between

managers and shareholders, warrants incurring agency costs, which include bonding costs, cost of monitoring, and residual losses.

Fama and Jensen (1983) discussed agency issue in the context of separation of ownership and control in the corporations / firms, whereby the control of business is in the hands of managers and ownership of the firm is with the shareholders. The issue becomes critical, when managers have no ownership stake in business leading to no effect of earnings maximization on the manager's wealth. Therefore, keeping in view the same, manager's decision making may not be focused on maximization of shareholder wealth. In this condition, the agency issue intensifies, which demands need to take measures to address the issue.

#### **2.4.2: Corporate Governance and Earnings Management link in the light of Agency Theory**

The influential papers of Alchian & Demstet (1972) and Jensen & Meckling (1976), described the firm as a nexus of contracts between individual factors of production, leading to birth of agency theory. Jensen and Meckling (1976) further defined firm as a legal fiction, where conflicting interests of individuals are brought into balance through contractual obligations. These contractual obligations / relationships are not just with employees, but also with customers, suppliers and creditors.

Agency role of the directors can be explained as the governance function of the BoD in serving the owners / shareholders by monitoring management decisions and ensuring that shareholders interests are not jeopardized by management's practices of earnings management and misreporting / non disclosure of accounting information. This role of board has been examined largely by the researchers in the past (Fama& Jensen, 1983; Baysinger & Butler, 1985; Lorsch & MacIver, 1989; Baysinger & Hoskisson, 1990; Daily & Dalton, 1994). Furthermore, vast body of research / literature has also examined the importance of board composition / characteristics in monitoring CG function (Pearce & Zahra, 1992; Barnhart, Marr & Rosenstein, 1994; Daily & Dalton, 1994; Gales & Kesner, 1994; Braga & Black, 1998; Kiel & Nicholson, 2003;), since the primary responsibility of the BoD is towards maximizing shareholder value.



The previous studies have also supported the role of CG & Board Characteristics in reducing managerial earnings management practices. Moreover, most of the researchers have relied on accrual-based earnings management technique, based on modified Jones model. The review of literature in this context has already been explained above.

### **2.4.3: Hypothesis Development**

#### ***Board Independence***

Mather and Ramsay (2006) explored the effectiveness of few BoD characteristics in controlling earnings management by Australian companies who changed CEOs. Evidence revealed significant role of larger boards and board independence in restraining earnings management practices. Zhu and Tian (2009) examined the effect of CEO compensation and BoD characteristics and on firm performance, while adjusting the performance for the effect of earnings management. Results depicted that independent directors formed more effective CG mechanism in China. Cornett, McNutt, and Tehranian (2009) also reported that CG mechanisms like board independence helped to control earnings management practices.

Moreover, Roodposhti and Chashmi (2010) examined the relationship between CG internal mechanisms, CEO duality, board independence, ownership concentration and earnings management. The results depicted negative impact of ownership concentration, board independence and CEO duality on earnings management. Chekili (2012) examined the effect of CG on earnings management and proved that presence of external directors, board size and CEO duality had significant relationship with earnings management.

Man and Wong (2013) while conducting the review of literature on earnings management and CG, reported that board independence increased the control on management's earnings management activities. Sukeecheep, Yarram and Al-Farooque (2013) explored the influence of BoD characteristics on earnings management behavior and reported that board independence showed a positive link with earnings management. Siam, Laili and Khairi (2014) investigated the impact of BoD characteristics on earnings, whereby BoD characteristics included board size, board independence, board meetings, CEO duality and financial expertise of BoD. Results concluded that effective board reduced earnings management i.e. board independence, size, meetings and financial expertise played

significant role in constraining earnings management. Iraya, Mwangi and Muchoki (2015) examined the relationship between CG mechanisms and earnings management. Results indicated negative relationship of board size, board independence and ownership concentration with earnings management. Talbi, Omri, Guesmi and Ftit (2015) did study to investigate the efficacy of board characteristics in restraining management's earnings management, whereby results showed that board independence played significant role in controlling earnings management.

*Hypothesis 1: Presence of Independent director is negatively related with Earnings Management*

***Board Size***

Ahmed, Hossain and Adams (2006) investigated the impact of CG mechanisms on annual accounting earnings informativeness and found a negative effect of board size on earnings management, whereas outside directors had no relationship with earnings management. Mather and Ramsay (2006) tested the notion that whether certain board characteristics, relating to CG, had a significant role in limiting earnings management. Evidence revealed negative impact of board size and board independent on earnings management.

Abed, Attar and Suwaidan (2011) investigated the effect of various CG mechanisms on earnings management and found that only board size had a significant role in containing earnings management. Chekili (2012) examined the impact of CG mechanisms on earnings management and found significant relationship of earnings management with board size, presence of external directors in the board and CEO duality. Soliman and Ragab (2013) examined the effect of independent BoD members, board size and CEO duality on earnings management, whereby results proved positive relation of CEO duality and negative relation of board size with earnings management.

Siam, Laili and Khairi (2014) explored the relation between BoD characteristics and earnings management, using board characteristics. Results supported the role of an effective board to reduce earnings management i.e. independence, financial expertise BoD, board size and board meetings. Aygun, Ic and Sayim (2014) studied the impact of size of board and corporate ownership on earnings management and found negative relationship of institutional

ownership and board size on earnings management. Talbi, Omri, Guesmi and Ftiti (2015) did study to investigate effectiveness of BoD characteristics in limiting earnings management. Empirical results depicted positive impact of board size on earnings management. Iraya, Mwangi and Muchoki (2015) studied the impact of CG practices on earnings management and found negative impact of board size on earnings management.

*Hypothesis 2: Board Size is negatively related with Earnings Management*

***CEO Duality***

Saleh, Iskandar and Rahmat (2005) assessed the significance of BoD characteristics towards controlling earnings management by the manager and found that CEO duality had positive effect on earnings management. Yugroho and Eko (2011) reviewed the effect of board characteristics (CEO duality, independent board of directors, managerial ownership, board size, multiple directorships, audit committee, board tenure and board interlock) on earning management and found that CEO duality affected the earning management practices.

Abdul Rauf, Johari, Buniamin and Abd Rahman (2012) reported negative impact of management ownership and positive impact of CEO duality on earnings management (measured by discretionary accruals). Chekili (2012) examined the impact of CG mechanisms on earnings management and found significant relationship of earnings management with board size, presence of external directors in the board and CEO duality. Mohammad, Abdul Rashid and Shatter (2012) examined the significance of CG in controlling earnings management in government linked firms and found positive relationship of CEO duality on earnings management.

Soliman and Ragab (2013) examined the effect of independent BoD members, board size and CEO duality on earnings management, whereby results proved positive relation of CEO duality and negative relation of board size, with earnings management. Siam, Laili and Khairi (2014) investigated the impact of BoD characteristics on earning management. Results concluded that effective board reduced earnings management i.e. board independence, size, meetings and financial expertise played significant role in constraining earnings management, whereas CEO duality had positive impact on earning management. Iraya, Mwangi and Muchoki (2015) explored the effect of CG practices on earnings management and found

negative impact of ownership concentration, board size and board independence while positive impact of CEO duality and board activity on earnings management. Latif and Abdullah (2015) investigated significance of ownership structure, board characteristics and audit committee characteristics in controlling earnings management practices. Results depicted positive relation of CEO duality and institutional ownership with earnings management.

*Hypothesis 3: CEO Duality is positively related with Earnings Management*

***Gender Diversity***

Moradi, Salehi, Bigli and Najari (2012) investigated the significance of BoD characteristics in reducing earnings management, whereby they reported that gender diversity had no relationship with earnings management. Man and Wong (2013) conducted the review of literature on CG and earnings management and supported the positive role of CG in earnings management. Among other findings, they reported that female directors were more risk averse towards earnings management and frauds.

Later, Lakhal, Aguir and Lakhal (2015) examined the effect of gender diversity in BoD and top level management positions on earnings management, whereby results depicted that increase in percentage of women directors in BoD lead to reduction in earnings management.

*Hypothesis 4: There is a negative relationship between Gender Diversity and Earnings Management*

***Institutional Ownership***

Koh (2005) examined the relationship between income smoothing and institutional ownership. Results depicted positive relationship of institutional ownership with firms earnings smoothing by the companies. Emamgholipoura, Bagherib, Mansouriniaa and Arabic (2013) investigated the relation between institutional investors and earnings management, wherein the results depicted positive association between earnings management and institutional ownership. As such, results implied that increase in ownership percentage of institutional shareholders increased earnings management. Ikechukwu (2013) explored the link between earnings managements and different CG mechanisms, wherein he found higher

earnings management in companies having stronger internal governance, such as higher ownership concentration and smaller boards, whereas low earnings management was observed in companies with strong external governance, such as higher institutional holdings and high take over pressure. Mehrabian, Ansari and Pourheydari (2013) investigated the effect of institutional ownership on accruals (discretionary and nondiscretionary) and found a positive effect of institutional ownership on accruals (discretionary and nondiscretionary).

Aygun, Ic and Sayim (2014) studied the impact of size of board and corporate ownership on earnings management and found negative relationship of institutional ownership and the board size on earnings management. Latif and Abdullah (2015) investigated significance of ownership structure, board characteristics and audit committee characteristics in controlling earning management practices. Results depicted positive relationship of institutional ownership with earnings management.

*Hypothesis 5: Institutional Ownership is positively related with Earnings Management*

***Control Variables***

Saleh, Iskandar and Rahmat (2005) assessed the significance of BoD characteristics towards controlling earnings management, while using firm size, performance and leverage as control variables. Roodposhti and Chashmi (2010) examined the link between CG internal mechanisms, board independence, ownership concentration, CEO duality and earnings management, using leverage and firm size as control variables. With regards to control variables, statistics depicted a positive significant relationship of control variable with earnings management. Abdul Rauf, Johari, Buniamin and Abd Rahman (2012) examined the effect of BoD characteristics and company characteristics on earnings management activities in Malaysia, while using leverage, firm size and performance as control variables.

Soliman and Ragab (2013) examined the effect of independent BoD members, board size and CEO duality on earnings management, using firm size, growth and leverage as control variables. Emamgholipoura, Bagherib, Mansouriniaa and Arabic (2013) investigated the relation between institutional investors and earnings management, wherein the results pertaining to control variables (firm size, leverage and return on sales) that firm size had no impact on earnings management, whereas financial leverage and return on sales had negative

and positive impact respectively, on the earnings management of companies. Aygun, Ic and Sayim (2014) studied the impact of size of board and corporate ownership on earnings management, using return on assets, firm size and financial leverage as control variables.

*As evident from above, most commonly used control variables are firm size, leverage and performance/profitability.*

## **CHAPTER 3**

### **RESEARCH METHODOLOGY**

#### **3.1: DATA SPECIFICATION**

To examine the impact of characteristics of board of directors (BoD) on earnings management by the companies listed on Pakistan Stock Exchange, this study employed secondary data from the years 2008 to 2014 for investigating the impact of independent variables (board characteristics) on dependent variables (earning management). A sample of 100 companies (actively traded on stock market) had been selected for the study, excluding the financial sector companies because they follow different fundamentals and capital structure, as such the selection of financial sector companies would have distorted the entire results. The exclusion of financial sector is evident from the previous literature also as explained in Chapter 2.

The data has been drawn from the annual reports and websites of selected companies and State Bank of Pakistan (SBP). In case of non availability of data (relating to BoD characteristics) in annual reports, staff of concerned organizations have also been directly approached for required information.

#### **3.2: VARIABLES SPECIFICATION**

The variables derived in the light of literature review and theoretical framework are appended below.

##### **Dependent Variable:**

- Discretionary Accruals (as proxy for earnings management)

Discretionary accruals have been used as proxy for earnings management, as employed previously by Jones (1991) and Dechow, Sloan & Sweeney (1995) and subsequently used by other researchers.

## **Independent Variables**

Following independent variables have been derived from the literature review incorporated / discussed earlier in chapter 2.

1. Board independence (defined by %age of non-executive directors in the board)
2. Board size (defined by total number of board members).
3. CEO Duality (i.e. presence of CEO in board or CEO holding the position of chairman as well i.e. measured as 1 if CEO is the chairman of board as well, otherwise 0).
4. Gender Diversity (defined by %age of female directors in the total board size).
5. Institutional ownership (measured by percentage of shareholding detained by institutions in the total shareholding).

The above variables / measures are inline with the studies of Saleh Iskandar and Rahmat (2005), Mather and Ramsay (2006), Zhu and Tian (2009), Cornet, MCNutt and Tehranian (2009), Roodposhti and Chashmi (2010), Ahmed, Hossain and Adams (2011), Yougoro and Eko (2011), Abdul Rauf, Buniamin and Abd Rahman (2012), Alves (2012), Man and Wong (2013), Moradi, Salehi, Bighi and Najari (2012), Chekili (2012), Mohammad, Abdul Rashid and Shatter (2012), Soliman and Ragab (2013), Emamgholipoura, Bagherib, Mansouriniaa and Arabic (2013), Siam, Laili and Khairi (2014), Aygun and Sayim (2014), Iraya, Mwangi and Muchoki (2014), Park and Shin (2014), Talbi, Omri, Guesmi and Fititi (2015), Lakhal , Aguir and Lakhal (2015) and Latif and Abdullah (2015).

## **Control Variables**

- Firm size: defined by log of total assets
- Leverage: defined in terms of total liabilities / equity (measured by total liabilities over equity)
- Profitability/performance (measured by return on assets)

The above mentioned control variables have been identified from the studies of Saleh Iskandar and Rahmat (2005), Mather and Ramsay (2006), Zhu and Tian (2009), Cornet, MCNutt and Tehranian (2009), Roodposhti and Chashmi (2010), Ahmed, Hossain and



Adams (2011), Abdul Rauf, Buniamin and Abd Rahman (2012), Soliman and Ragab (2013) and Aygun and Sayim (2014), Talbi, Omri, Guesmi and Fititi (2015) and Latif and Abdullah (2015).

### **3.3: MODEL SPECIFICATION**

#### **Earnings Management**

As evident from the review of literature, most of the researchers have used accruals as proxy of earnings management. In this regard, there are two approaches for measuring accruals:

1. Balance sheet approach
2. Cash flow statement approach.

As highlighted by Shah, Butt and Hasan (2009) also, in weighing both approaches, majority of the researchers in the past have preferred cash flows approach. For instance, Collins and Hriber (1999) also supported the use of cash flows based approach for calculation of total accruals. Keeping in view the same, cash flow based approach has been employed for calculation of total accruals as per following equation:

$$TA_t = N.It - CFO_t$$

*Where:*

*TA<sub>t</sub> is equal to total accruals in year t*

*N.It is equal to Net Income in year t*

*CFO<sub>t</sub> is equal to cash flows from operating activities in year t*

#### **Measurement of Discretionary Accruals**

As evident from the studies of previous researchers, there are two types of accruals (discretionary and non-discretionary accruals), however managers involve in earnings management by playing with discretionary accruals. In this regard, the researchers had applied various models for calculation of discretionary accruals e.g. DeAngelo Model (1986),

Healy Model (1985), Jones Model (1991) and Modified Jones model (1995). However, the latest and widely used model is Modified Cross Sectional Jones Model (1995), which has been used in this study also, wherein discretionary accruals have been derived by subtracting nondiscretionary accruals from total accruals, whereby non-discretionary accruals are derived as under:

$$NDA_t = \alpha_1 \left( \frac{1}{A_{t-1}} \right) + \alpha_2 \left( \frac{\Delta REV_t - \Delta REC_t}{A_{t-1}} \right) + \alpha_3 \left( \frac{\Delta PPE_t}{A_{t-1}} \right) + \varepsilon$$

Where:

$\Delta REV_t$  is equal to revenues in year  $t$  less revenue in year  $t-1$

$\Delta REC_t$  is equal to net receivables in year  $t$  less net receivable in year  $t-1$

$\Delta PPE_t$  is equal to gross property plant and equipment at the end of year  $t$

$A_{t-1}$  is equal to total assets at the end of year  $t-1$

$\alpha_1, \alpha_2, \alpha_3$  are firm specific parameters

$\varepsilon$  is the residual

Total accruals derived from cash flow based approach have been regressed on difference between change in revenue and change in receivable (in current year) and change in property, plant and equipment (current year), for calculating  $\alpha_1, \alpha_2, \alpha_3$  as shown in the equation. Subsequently, coefficient values have been adjusted in the said equation to derive non-discretionary accruals. Lastly, the discretionary accruals have been derived by subtracting non discretionary accruals from total accruals, as shown below.

$$DA = TA - NDA$$

Where:-

$DA$  is equal to discretionary component of accruals

$TA$  is equal to total accruals

$NDA$  is equal to non discretionary accruals

With reference to Pakistan, it is pertinent to highlight the study of Shah, Butt and Hasan (2009), who examined the link between quality of CG and earnings management, also employed Modified Cross Sectional Jones Model and cash flow based approach for deriving discretionary accruals (as proxy for earnings management).

### **Econometric Model**

The general form of the econometric model that has been tested in this study is written as follows:

$$DA = f(BI, BS, CEOD, GD, INSTO, FS, LEV, ROA)$$

where:

*DA* = Discretionary Accruals (as proxy for earnings management)

*BS* = Board Size

*BI* = Board Independence

*CEO* = CEO Duality

*GD* = Gender Diversity

*INSTO* = Institutional Ownership

*FS* = Firm size

*LEV* = Leverage

*ROA* = Return on assets (as measure of Performance/Profitability)

The specific form of econometric model that has been tested in this study is written as follows:

$$DA_{it} = \alpha + \beta_1 BI_{it} + \beta_2 BS_{it} + \beta_3 CEOD_{it} + \beta_4 GD_{it} + \beta_5 INSTO_{it} + \beta_6 FS_{it} + \beta_7 LEV_{it} + \beta_8 ROA_{it} + e_{it}$$

where:

*DA* = Discretionary Accruals (as proxy for earnings management)

*BS* = Board Size

<i>BI</i> =	<i>Board Independence</i>
<i>CEO</i> =	<i>CEO Duality</i>
<i>GD</i> =	<i>Gender Diversity</i>
<i>INSTO</i> =	<i>Institutional Ownership</i>
<i>FS</i> =	<i>Firm size</i>
<i>LEV</i> =	<i>Leverage</i>
<i>ROA</i> =	<i>Return on assets (as measure of Performance/Profitability)</i>

### **3.4: DATA ANALYSIS TECHNIQUES**

Panel data analysis technique has been employed to examine impact of board characteristics on earnings management. It is a widely used statistical method / technique, for dealing with two and "n"-dimensional panel data. A simple panel data regression model can be written as under:

$$y_{it} = a + bx_{it} + \epsilon_{it}$$

Where:

*y* is equal to dependent variable

*x* is equal to the independent variable

*a* and *b* are coefficients

*i* and *t* are indices for individuals and time.

Assumptions about error term help to decide between fixed effect and random effect.  $\epsilon_{it}$  is assumed to vary non-stochastically over *i* or *t* supporting the appropriateness of fixed effect model. On the other hand,  $\epsilon_{it}$  is assumed to vary stochastically over *i* or *t* in case of random effect.

Panel data analysis has three independent approaches i.e. independently pooled panel, fixed effect model and random effect model.

### **3.4.1: Common Effect Model**

Common Effect Model says that beta should be same for all the cross sections if there is no heterogeneity in the data, which means that the intercept will be same for all the cross sections used in the study.

### **3.4.2: Fixed Effect Model**

Fixed Effect Model is in contrast with the assumptions of Common Effect Model, this model assumes that every cross section is different from the other i.e. Model has a different intercept to explain the heterogeneity existence in the data. A separate dummy is used in fixed effect model to show the data inconsistency known as least square dummy variable. Research having diverse data can use fixed effect model for the analysis. If the standard F Statistic is insignificant (Redundant Fixed Effects Tests – Likelihood Ratio) then the hypothesis of different intercept is rejected and common effect model is used.

### **3.4.3: Random Effect**

Random Effect Model is more or less similar to the Fixed Effect Model, the intercept is different for the independent variables but here it is checked whether the intercepts of all the cross sections under study follow a pattern or not. The model's basis assumption is that beta follows a systematic pattern and hence meaningless for analysis. To select among the two models (i.e. fixed effect and random effect) Hausman Test is applied. If the F-Statistic in (Hausman Test) is insignificant Random Effect Model is used, otherwise Fixed Effect Model is used.

## **CHAPTER 4**

### **RESULTS AND DISCUSSION**

#### **4.1: DESCRIPTIVE STATISTICS**

This section depicts the summary statistics of data. It includes, mean, median, standard deviation, minimum, maximum, skewness and kurtosis. Average value of the data is known as mean. Middle value of data is known as median. Standard deviation is the average variation in the data. Summary also shows the smallest value (minimum) of the data as well as the largest value (maximum).

Summary of data statistics covering period from the year 2008 to 2014 for the selected sample of 100 companies listed on Pakistan Stock Exchange is as under:

	<b>DA</b>	<b>BI</b>	<b>BS</b>	<b>CEOD</b>	<b>GD</b>	<b>INSTO</b>	<b>FS</b>	<b>LEV</b>	<b>ROA</b>
<b>Mean</b>	0.26	0.67	8.36	0.24	0.05	0.18	17.01	0.26	0.07
<b>Median</b>	0.38	0.71	8.00	0.00	0.00	0.04	16.55	0.20	0.06
<b>Maximum</b>	0.98	0.93	14.00	1.00	0.67	0.82	21.57	0.97	0.21
<b>Minimum</b>	-1.42	0.13	5.00	0.00	0.00	0.00	14.19	0.01	-0.05
<b>Std. Dev.</b>	0.72	0.19	1.67	0.42	0.12	0.26	2.34	0.21	0.08
<b>Skewness</b>	-1.37	-0.85	1.20	1.25	2.59	1.35	0.78	1.20	0.38
<b>Kurtosis</b>	3.93	3.26	4.32	2.55	9.80	3.46	2.47	3.62	2.11

**Table 4.1: Descriptive Statistics**

Discretionary Accruals (DA) has been measured by using Modified Jones Model. The mean value of DA for the selected firms is 0.26, which means that average value of discretionary accruals is PKR 0.26 Million, whereas maximum value is PKR 0.98 Million and minimum value is negative PKR 1.42 Million. Standard deviation captured is 0.72, value of kurtosis is 3.93 and skewness is -1.37.

Board Independence (BI) has been measured by percentage of non-executive directors in the total board size. The mean value of BI for the selected firms is 0.67, which means that on average 67% of the board members are non-executive directors, whereas maximum value of non-executive directors on board is 93% and minimum value is 13%. Standard deviation captured is 0.19. The value of kurtosis is 3.26 and skewness is -0.85.

Board Size (BS) has been defined by total number of board members. The mean value of BS for selected firms is 8.36, which means that on average there are 8 directors in the board, whereby maximum number of directors is 14 and minimum number of directors is 5. Standard deviation captured is 1.67. The value of kurtosis is 4.32 and skewness is 1.20.

CEO Duality (CEOD) has been defined as 1 if CEO is the chairman of board as well, otherwise 0, thus depicting maximum value as 1 and minimum value as 0. The mean value of CEOD for the selected firms is 0.24, whereas the standard deviation captured is 0.42. The value of kurtosis is 2.55 and skewness is 1.25.

Gender Diversity (GD) has been measured by percentage of female directors in the total board size. The mean value of GD for selected firms is 0.05, which means that on average 5% of the board members are female, wherein the maximum is 67% and minimum is 0%. Standard deviation captured is 0.12. The value of kurtosis is 9.80 and skewness is 2.59.

Institutional Ownership (INSTO) has been measured by percentage of shareholding held by institutions in the total shareholding of the selected firms. The mean value of INSTO for selected firms is 0.18, which means that on average 18% of the shareholding is with institutions, wherein maximum value is 82% and minimum value is 0%. Standard deviation captured is 0.26. The value of kurtosis is 3.46 and skewness is 1.35.

Firm Size (FS) has been measured by log of total assets. The mean value of FS for the selected firms is 17.01, whereas the standard deviation captured is 2.34. Maximum value is 21.57 and minimum value is 14.19. Value of kurtosis is 2.47 and skewness is 0.78.

Leverage (LEV) has been measured by total liabilities over equity. The mean value of LEV for the selected firms is 0.26, whereas the standard deviation captured is 0.21. Maximum value is 0.97 and minimum value is 0.01. Value of kurtosis is 3.62 and skewness is 1.20.

Return on Assets (ROA) has been measured by net profit over total assets. The mean value of ROA for the selected firms is 0.07, whereas the standard deviation captured is 0.08. Maximum value is 0.21 and minimum value is -0.05. Value of kurtosis is 2.11, whereas skewness is 0.38.

#### **4.2: CORRELATION MATRIX**

Correlation Matrix is a technique used to measure the relationship of the variables. It explains the dependency of multiple variables at the same period. With the help of correlation technique the strength and direction of relationship between the variables is measured, although it is considered as a weak tool for analysis but still widely used in researches. As it gives the basis of relationship among the variables, the value range is between -1 to +1, which tells the degree of association between the variables either positive or negative. Value closer to +1 depicts that the two variables are positively related / effecting each other, whereas the value below 0 depicts that the two variables are negatively related / effecting each other.

The result from correlation matrix is given below in the table.

	<b>DA</b>	<b>BI</b>	<b>BS</b>	<b>CEOD</b>	<b>GD</b>	<b>INSTO</b>	<b>FS</b>	<b>LEV</b>	<b>ROA</b>
<b>DA</b>	1.00	-0.06	-0.05	0.06	0.10	0.27	0.16	0.09	0.33
<b>BI</b>	-0.06	1.00	0.13	0.29	-0.08	0.13	0.02	-0.13	0.02
<b>BS</b>	-0.05	0.13	1.00	0.15	0.14	0.03	0.04	-0.09	-0.03
<b>CEOD</b>	0.06	0.29	0.15	1.00	-0.05	-0.18	0.12	0.14	0.01
<b>GD</b>	0.10	-0.08	0.14	-0.05	1.00	0.10	0.08	-0.19	0.12
<b>INSTO</b>	<b>0.27</b>	0.13	0.03	-0.18	0.10	1.00	0.20	-0.04	0.27
<b>FS</b>	0.16	0.02	0.04	0.12	0.08	0.20	1.00	0.07	0.26
<b>LEV</b>	0.09	-0.13	-0.09	0.14	-0.19	-0.04	0.07	1.00	-0.03
<b>ROA</b>	<b>0.33</b>	0.02	-0.03	0.01	0.12	0.27	0.26	-0.03	1.00

**Table 4.2: Correlation Matrix**



The correlation matrix shows negative relationship between DA, BI, and BS, which means that increase in board size and board independence leads to reduction in earnings management by the firms and vice versa, however this negative relationship is weak in form. Moreover, there is a positive relationship between DA, CEOD, GD and INSTO, which means that CEOD and GD leads to increase in earnings management and vice versa, however the positive relationship between DA, CEOD and GD is weak, whereas positive relationship between DA and INSTO is strong.

Nonetheless, with respect to association between dependent variable and control variables, positive relationship has been witnessed between DA, FS, LEV and ROA, wherein the relationship between DA and ROA is relatively strong.

### **4.3: REGRESSION RESULTS**

Regression analysis performed on the data is enclosed as Appendix-A, explaining the results of Common Effect, Fixed Effect, Likelihood Ratio, Random Effect and Hausman Test, which depict suitability of Fixed Effect Model. As such, the results of Fixed Effect are appended below.

<b>Variables</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistic</b>	<b>Prob.</b>
C	0.161221	0.241685	0.667071	0.5049
BI	-0.323283	0.169718	-1.904820	0.0503
BS	-0.007415	0.020131	-0.368333	0.7128
CEOD	0.208542	0.081181	2.568840	0.0104
GD	0.522532	0.384222	1.359977	0.1744
INSTO	0.416627	0.136019	3.063005	0.0023
FS	0.087142	0.017510	4.976629	0.0000
LEV	0.053718	0.145229	0.369883	0.7116
ROA	5.194314	0.486603	10.67464	0.0000
R-squared	0.610036			
Adjusted R-squared	0.539553			
S.E. of regression	0.487416			

Sum squared resid	140.6442
Log likelihood	-431.5605
F-statistic	8.655037
Prob(F-statistic)	0.000000
Durbin-Watson stat	1.523693

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**Table 4.3: Fixed Effect Model**

Adjusted R square value of 0.539553 depicts that 53.95% change in the DA is because of all the independent variables under review (BI, BS, CEOD, GD, INSTO). BI and BS have negative relationship with DA, wherein the relationship between DA and BI is significant. Furthermore, CEOD, GD and INSTO have positive relationship with DA, wherein the relationship of INSTO and CEOD with DA is significant.

#### **4.4: DISCUSSION OF RESULTS**

As detailed earlier also, the objective of this research thesis is to investigate the effect of board characteristics on earnings management by the firms listed on Pakistan Stock Exchange, wherein Discretionary Accruals (DA) have been used as proxy of earnings management while board characteristics included Board Independence (BI), Board Size (BS), CEO Duality (CEOD), Gender Diversity (GD), Institutional Ownership (INSTO). The study has been conducted while using Firm Size (FS), Leverage (LEV) and Return on Assets (ROA) as control variables. The tests have confirmed the suitability of Fixed Effect Model for interpretation of results / verification of hypothesis. Keeping view the same, results derived from Fixed Effect Model are appended below.

##### **Board Independence**

The results depict that Board Independence (BI) has a significant negative relationship with Discretionary Accruals (DA), which means that increase in board independence will lead to reduction in earnings managements i.e. higher the %age of non-executive directors, lower the earns management practices and vice versa. The results are pragmatic as the majority of non-executive directors in board / lower number of executive directors in board, will strengthen

the board, which will make management accountable for the earnings managements practices. Thus the management / managers will avoid earnings management. Moreover, results are inline with the study of Talbi, Omri, Guesmi and Ftiti (2015) and Siam, Laili and Khairi (2014) who investigated the significance of BoD characteristics in constraining earnings management and found that board independence had a negative relation with earnings management. Also, Sukeecheep, Yarram and Al-Farooque (2013) and Zhu and Tian (2009) while investigating the influence of BoD characteristics on earnings management, also reported positive impact of board independence on earnings management. Nonetheless, Mather and Ramsay (2006) also reported that higher proportion of independent could limit earnings management.

### **Board Size**

Board Size (BS) has a negative relationship with Discretionary Accruals (DA), which is inline with the proposed hypothesis. However, instead of significant relationship, the results indicate a weak / insignificant relationship. Talbi, Omri, Guesmi and Ftiti (2015) and Siam, Laili and Khairi (2014) investigated link between earnings management and BoD characteristics, reporting significant negative effect of board size on earnings management. Moreover, Aygun, Ic and Sayim (2014) and Soliman and Ragab (2013) also reported significant negative relationship of board size with earnings management.

### **CEO Duality**

CEO Duality (CEOD) has a significant positive relationship with Discretionary Accruals (DA), which means that if CEO is chairman of board as well the situation will lead to increase in earnings management. The results are rational keeping in view the fact that if chairman of board is CEO as well, he may get involved in earnings management in the position of CEO and subsequently he would influence the board also (being chairman of board) to avoid accountability / monitoring of management to restrain earnings management. Results are inline with the study of Siam, Laili and Khairi (2014), Yugroho and Eko (2011) and Saleh, Iskandar and Rahmat (2005) who analyzed the effectiveness of BoD characteristics to restrict earnings management and found that CEO duality would increase earnings management. Moreover, Soliman and Ragab (2013) also investigated the roles of

CEO duality, board independence and board size on earnings management practices, whereby the results depicted significant positive impact of CEO duality on earnings management.

### **Gender Diversity**

Results depict that Gender Diversity (GD) has an insignificant positive relationship with Discretionary Accruals (DA), in contrary to proposed hypothesis of significant negative relationship, as reported by Lakhal, Aguir and Lakhal (2015) and Man and Wong (2013). However, the results correspond with the results of Moradi, Salehi, Bighi and Najari (2012) regarding investigation of the effects of characteristics of board director on earnings management and found that gender diversity had no affect on earnings management.

### **Institutional Ownership**

Results also depict a significant positive impact of Institutional Ownership (INSTO) on Discretionary Accruals (DA), which means that increase in institutional directorship will lead to increase in earnings management. The results are logical as the increase in institutional ownership leads to weakening of board potency to examine the management activities to restrict earnings management. Moreover, the results are inline with the results of Latif and Abdullah (2015) who investigated the effectiveness of BoD characteristics, ownership structure and audit committee characteristics on earnings management, whereby they found that institutional shareholding was positively related to earnings management. Emamgholipoura, Bagherib, Mansouriniaa and Arabic (2013) and Mehrabian, Ansari and Pourheydari (2013) also investigated the effect of institutional ownership on earnings management, reporting a positive relation between institutional ownership and earnings management.

### **Control Variables**

Results indicate a positive relation between control variable and earnings management, whereby the relationship of Firm Size (FS) and Return on Assets (ROA) is significant and relationship of leverage is insignificant. Roodposhti and Chashmi (2010) while investigating the relation between ownership concentration, corporate governance, board independence, CEO duality and earnings management, reported a positive relation between control variable

(leverage and firm size) and earnings management. Moreover, Emamgholipoura, Bagherib, Mansouriniaa and Arabic (2013) while investigating the relationship between institutional investors found that firm size (control variable) had no impact on earnings management, but financial leverage and return on profitability (control variables) had a negative and positive effect respectively on the earnings management of companies.

## **CHAPTER 5**

### **CONCLUSION & RECOMMENDATION**

#### **5.1: CONCLUSION**

Jensen and Meckling (1976) highlighted principal-agency relationship in the companies. Fama and Jensen (1983) further explained agency issue in the terms of separation between ownership and control. As such, the earnings management practices exist since the interests of managers and owners (shareholders/directors) are not directly aligned. Therefore, the need for monitoring / controlling managerial decisions to avoid earnings management became vital. Thus, giving a rationale to the investors for investigating the role of board characteristics (an important aspect of corporate governance) on earnings management. Researchers have done a number of studies to investigate the link between BoD characteristics and earnings management. Literature review discussed in the Chapter 2, depicts the evidence to support significant role of BoD / board characteristics in reducing managerial opportunism to manipulate reported earnings. This research thesis has also investigated the impact of board characteristics (board independence, board size, CEO duality, gender diversity and institutional ownership) on earnings management (using discretionary accruals as proxy for earnings management). Moreover, discretionary accruals have been calculated by using Modified Jones Model. A sample of 100 companies, listed on Pakistan Stock Exchange, had been selected and 7 years data from the year 2008 to 2014 had been used for panel data analysis. The results of fixed effect model depicted a significant negative effect of board independence and significant positive impact of CEO duality and institutional ownership on earnings management. However, no significant effect of board size and gender diversity has been observed on earnings management. Thus, it has been concluded that earnings management can be restricted / reduced by increasing the percentage of non-executive directors, avoiding CEO duality and decreasing institutional ownership. The significant relationships reported, are inline with the results of previous researchers.

## **5.2: RECOMMENDATION**

Separation of ownership and control provides opportunities for earnings management by the managers, since the interest of managers and directors / shareholders are not directly aligned. As such, the situation warrants enrichment of monitoring mechanisms in the form of board characteristics, being an important aspect of corporate governance, to restrain earnings management. For those stakeholders who want to align management's interests with that of shareholders for avoiding earnings management, the findings of this research thesis provide them with a set of board characteristics which can have a favorable contribution towards reduction in earnings management practices. Nonetheless, regulatory bodies (SECP) can also take measures accordingly to enrich the corporate governance laws and devise necessary regulations to strengthen supervisory role of BoD in Pakistan towards restricting earnings management. For instance, on the basis of research results, it is recommended that concerned stakeholders and regulators can take measures to increase the percentage of non-executive directors, put restriction on CEO duality and formulate strategy to decrease institutional ownership in order to restrict earning management.

## **5.3: FUTURE RESEARCH DIRECTIONS**

The study of relationship between BoD characteristics and earnings management is an important area for the stakeholders. However, as evident from the literature review, significant research work has not been done in Pakistan on the topic of earnings management and board characteristics in general and earnings management in particular.

Future research can be conducted by inclusion of financial sector companies as well in the sample of firms, providing appropriate suggestions to regulatory and legal bodies for monitoring and controlling earnings management. Similarly, the analysis of non-financial sector can be expanded by classifying the analysis into sectoral groups and increasing the sample size. Furthermore, a comparative research one can also be conduct study by taking sample from a number of countries.

Earnings management practices before IPOs and buy-outs can also be studied. Further studies can also be conducted to explore earnings management practices among non-listed companies and large family run private companies.

Nonetheless, related studies in the area of earnings management can assist tax authorities also in their quest to net more taxes and broaden the tax base, by targeting the earnings management practices aimed at tax evasion.

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## **APPENDIX – A**

### **REGRESSION RESULTS**

Regression analysis performed on the data is as under:

#### **1: Common Effect**

Following table shows the results of common effect.

<b>Variables</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistic</b>	<b>Prob.</b>
C	0.055959	0.233618	0.239531	0.8108
BI	-0.346315	0.143257	-2.417439	0.0159
BS	-0.020718	0.015285	-1.355471	0.1757
CEOD	0.132713	0.063375	2.094106	0.0366
GD	0.349331	0.225264	1.550767	0.1214
INSTO	0.535904	0.104523	5.127132	0.0000
FS	0.015876	0.011306	1.404295	0.1607
LEV	0.365508	0.120175	3.041467	0.0024
ROA	2.344741	0.326289	7.186078	0.0000
R-squared	0.176132			
Adjusted R-squared	0.166594			
S.E. of regression	0.655750			
Sum squared resid	297.1356			
Log likelihood	-693.3449			
F-statistic	18.46588			
Durbin-Watson stat	0.773205			

As depicted above, adjusted R square value is 0.166594, which means that 16.65% change in the DA is because of all the independent variables under review (BI, BS, CEOD, GD, INSTO). BI and BS have negative relationship with DA, wherein the relationship between

DA and BI is significant. Moreover, CEOD, GD and INSTO have positive relationship with DA, wherein the relationship of INSTO and CEOD with DA is significant.

## **2: Fixed Effect**

Following table shows the results of fixed effect.

<b>Variables</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistic</b>	<b>Prob.</b>
C	0.161221	0.241685	0.667071	0.5049
BI	-0.323283	0.169718	-1.904820	0.0503
BS	-0.007415	0.020131	-0.368333	0.7128
CEOD	0.208542	0.081181	2.568840	0.0104
GD	0.522532	0.384222	1.359977	0.1744
INSTO	0.416627	0.136019	3.063005	0.0023
FS	0.087142	0.017510	4.976629	0.0000
LEV	0.053718	0.145229	0.369883	0.7116
ROA	5.194314	0.486603	10.67464	0.0000
R-squared	0.610036			
Adjusted R-squared	0.539553			
S.E. of regression	0.487416			
Sum squared resid	140.6442			
Log likelihood	-431.5605			
F-statistic	8.655037			
Prob(F-statistic)	0.000000			
Durbin-Watson stat	1.523693			

Adjusted R square value of 0.539553 depicts that 53.95% change in the DA is because of all the independent variables under review (BI, BS, CEOD, GD, INSTO). BI and BS have negative relationship with DA, wherein the relationship between DA and BI is significant. Furthermore, CEOD, GD and INSTO have positive relationship with DA, wherein the relationship of INSTO and CEOD with DA is significant.

### **3: Likelihood Ratio**

In order to decide which model is best suited between common effect and fixed effect, likelihood ratio test is performed. The likelihood ratio test analyses the null hypothesis that all the cross sections have a common intercept or not.

<b>Effects Test</b>	<b>Statistic</b>	<b>d.f.</b>	<b>Prob.</b>
Cross-section F	6.653577	(99,592)	0.0000
Cross-section Chi-square	523.568751	99	0.0000

The above mentioned results of Likelihood Test, depicting p-value < 5% for Chi-square, which shows that all cross sections are having the same intercept which means that the null hypothesis is accepted. Therefore, fixed effect model is more suitable than common effect model. Subsequently, random effect model has been performed to further choose between the random effect model and fixed effect model.

### **4: Random Effect**

Following table shows the results of random effect model.

<b>Variables</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistic</b>	<b>Prob.</b>
C	0.505744	0.292230	1.730635	0.0840
BI	-0.391820	0.147794	-2.651124	0.0082
BS	-0.013174	0.016806	-0.783878	0.4334
CEOD	0.181409	0.067961	2.669333	0.0078
GD	0.306691	0.281745	1.088542	0.2767
INSTO	0.560491	0.112867	4.965930	0.0000
FS	0.056752	0.013491	4.206841	0.0000
LEV	0.185184	0.125844	1.471543	0.1416
ROA	3.984587	0.381736	10.43807	0.0000

R-squared	0.314652
Adjusted R-squared	0.306717
S.E. of regression	0.508829
F-statistic	39.65579
Durbin-Watson stat	1.008683

Adjusted R square value of 0.306717 depicts that 30.67% change in the DA is because of all the independent variables under review (BI, BS, CEOD, GD, INSTO). BI and BS have negative relationship with DA, wherein the relationship between DA and BI is significant. Furthermore, CEOD, GD and INSTO have positive relationship with DA, wherein the relationship of INSTO and CEOD with DA is significant.

### **5: Hausman Test**

In order to decide which model is best suited between random effect and fixed effect, Hausman test is performed. Consistency and efficiency of null hypothesis is tested by Hausman test, against the random effect. The results are as under:

<b>Test Summary</b>	<b>Chi-Sq.</b>		
	<b>Statistic</b>	<b>Chi-Sq. d.f.</b>	<b>Prob.</b>
Cross-section random	70.046351	8	0.0000

Results of Hausman Test, depicting p-value < 5% for Chi-square, shows rejection of null hypothesis and acceptance of alternate hypothesis. Therefore, fixed effect model is more suitable than random effect model. As such, the discussion of results have been made on the basis of fixed effect model.