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Do Firms Imitate: The Moderating  
Role of Ownership Concentration in  
Relation Between Peer Effect and  
Corporate Financial Policies

by

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**Do Firms Imitate: The Moderating Role of Ownership  
Concentration in Relation Between Peer Effect and  
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*Dedicated to My Loving Parents & Wife*



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**CERTIFICATE OF APPROVAL**

This is to certify that the research work presented in the thesis, entitled “**Do Firms Imitate: The Moderating Role of Ownership Concentration in Relation Between Peer Effect and Corporate Financial Policies**” was conducted under the supervision of **Dr. Muhammad Ramzan Akhtar**. No part of this thesis has been submitted anywhere else for any other degree. This thesis is submitted to the **Department of Management Sciences, Capital University of Science and Technology** in partial fulfillment of the requirements for the degree of Doctor in Philosophy in the field of **Management Sciences**. The open defence of the thesis was conducted on **July 19, 2019**.

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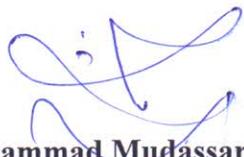
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## *List of Publications*

It is certified that following publication(s) have been made out of the research work that has been carried out for this thesis:-

1. Anwar, M. M., & Akhtar, M. R. (2018). Do Peer Firms Impact Corporate Investment Policies? *Pakistan Journal of Commerce & Social Sciences*, 12(1), 363-378.

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## *Abstract*

Peer firms play very important role in shaping corporate financial policies. The widespread corporate finance literature endorses the impact of peer firms in making firms' financial decisions. Seeing its importance in the corporate world, the current study intends to comprehensively analyze the impact of peer firms on corporate financial policies specifically capital structure, dividend as well as investment policies in the context of Pakistan. In addition to this, the study also intends to capture underlying motive of this mimicking behavior of Pakistani firms. For this purpose the study attempts to investigate either small firms who mimic their large, profitable rivals either also successful in capturing same financial performance or not. Lastly, the ownership composition of Pakistani firm is concentrated. Keeping in view the importance associated with composition of ownership in the governance matters of Pakistani firms the study also strives to explore the moderating role of ownership concentration in relation between peer effect and all three corporate financial policies.

The capturing of peer effect in the presence of reflection problem (endogeneity) is not possible. Since, it is difficult to infer either firm's actions are attributed to peer firms' actions and/or characteristics. To address this issue of endogeneity, the study utilized generalized method of moments (GMM) to inspect the relation between peer effect and corporate financial policies. In order to check the underlying motive of mimicking behavior of small versus large firms, propensity score matching (PSM) was carried out. Lastly, moderation analysis was conducted to analyze the moderating role of ownership concentration in relation between peer effect and three financial policies (capital structure, dividend and investment).

The results of current study confirm the role of peers while devising corporate leverage as well as investment policies. This signifies that Pakistani firms do not set their policies in isolation. Corporate managers considers what their peers are doing in this regard. In addition to this, the study results depict insignificant relation between peer effect and corporate dividend policy. It means the firms of

Pakistan do not considers peers' information, actions or characteristics while deciding about their own dividend payment decisions. Results relating to firms who mimic peer firms either also bring same financial performance or not also confirm the fulfillment of this underlying objective. In all measurements of performance the small firms remain successful in achieving this motive of them.

Lastly, the findings of the current study produce somewhat mixed results relating to moderating role of ownership concentration in relation between peer effect and corporate financial policies (leverage, dividend and investment policies). Relating to moderating role of ownership concentration in relation between peer effect and corporate leverage as well as investment policies, the results depict insignificant connection indicating no moderating role of ownership concentration. While, the findings of current study confirm significantly negative moderating role of ownership concentration in relation between peer effect and dividend policy of the firm. The theoretical as well practical implications are discussed.

**Key words: Peer Effect, Corporate Policies, Ownership Concentration, Mimicking Behavior, Endogeneity, Generalized Method of Moments (GMM), Propensity Score Matching (PSM).**

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# Abbreviations

<b>BIHH</b>	Bird-In-the-Hand Hypothesis
<b>CFO</b>	Chief Financial Officer
<b>CG</b>	Corporate Governance
<b>GIC</b>	Global Industrial Classification
<b>GMM</b>	Generalized Methods of Moments
<b>ML</b>	Maximum Likelihood
<b>MM Theorem</b>	Modigliani-Miller Theorem
<b>NPV</b>	Net Present Value
<b>PSIC</b>	Pakistan Standard Industrial Classification
<b>PSM</b>	Propensity Score Matching
<b>SIC</b>	Standard Industrial Classification
<b>STT</b>	Static Trade-Off Theory

# Chapter 1

## Introduction

### 1.1 Background

Peer effect can be referred to as a certain change in an individuals' behavior that is mainly because of its peers. Peoples' choices to great extent are influenced by those of their peers. As noted individual's behavior and decisions are influenced by directly observing others and through conversation (Hirshleifer & Teoh, 2009). Strong empirical evidence too confirmed that individual behavior is influenced by those of their peers (Clark & Loheac, 2007). Hence one of the basic reasons can be that people converge their behavior as they have same information, similar problems, options and payoffs consequently make similar choices. Certainly opposite taste leads towards opposite actions even though information is same (Bikhchandani et al., 1998). So people imitate when they have same payoffs. Instead of relying on one's own abilities they choose to be followers. People have belief that asset which is owned and decision which is taken by others is of real worth which is referred to as social learning. People imitate on the belief that peers' have superior information than they have to take decisions (Bikhchandani et al., 1992).

Different empirical studies tested the effect of peers in the field of education (Card & Giuliano, 2013) crime (Moffitt, 2001), socio-economic outcomes (Durlauf, 2004), workplace (Bandiera, Barankay & Rasul, 2010), herding behavior (Celen & Kariv, 2004) etc. These studies confirmed the impact of peers as individuals imitate and

follow others to make their own decisions. However, during the past several years, economists put forth maximum effort to understand the effects of peers in the financial decision making. In this context, Banerjee (1992) analyzed the impact of individual behavior which contributes to yield similar behavior of several others consequently which may lead to collapse the overall financial system (Lux, 1995). From social viewpoint this type of behavior is irrational hence is inefficient (Scharfstein & Stein, 2000). Understanding this phenomenon from the perspective of corporate world is much more important as firms are main constituent of the financial market. Furthermore, corporate world is the most suitable domain for analyzing such peer effects as financial decisions taken by competitors (peers) call others to pay attention. Financial decisions are important seeing that it directly impact overall expansion and growth of an economy. The extant literature so far has highlighted the importance of using peers' information and decisions to make ones' own financial decisions.

In this regard, Pae, (2002) highlighted the importance of financial statements of peer firms and emphasized that specific peer related as well as industry related information can be gained through these financial statements. This notion is further supported by the study of Moon and Bates (1993) that while taking strategic decisions firms rely on financial information of their peer firms. Consistently Guilding (1999) conducted a survey in New Zealand and found that before making strategic decisions firms critically analyze market share, sales volume as well as profit of peer firms. Simons (1990) too confirmed that peers' sales, costs, profit margins, and other financial information is utilized by the firms to deduce prevailing trends and future demands of an industry.

As evidenced from the above mentioned literature it is quite clear that peer firms have significant role in the corporate world. However, theoretically it is not easy to identify peer effect due to reflection problem (Manski, 1993). Reflection problem is a particular type of endogeneity as it is difficult to infer whether a firm's actions are attributed to actions or characteristics of its peer group. In order to analyze peer effect appropriately three effects categorized by Manski (1993) needs to be understood. The first one is endogenous effect that occurs from the tendency of a

firm to behave in some ways keeping in view behavior (outcome) of its peers. This effect can be captured by examining the fact that an individual firm's behavior is influenced by behavior of its peers. For example, if firm decide to declare dividend in the response their peer firms declares dividend.

The second one is exogenous (contextual) effect which signifies the tendency of a firm to behave in some ways according to exogenous characteristics of its peers. This effect can be observed by examining how exogenous characteristics of peer group affected decisions of its member firms. For instance, a firm has enough profit to declare dividend on its own but declares in response of positive signals from peers' dividend declaration. Both (endogenous and exogenous) peer effects has important policy implication as first demonstrates "multiplier effect" in the form of feedback from member's behavior while later do not. The last type is correlated effect wherein firms on the basis of same individual characteristics or same institutional setting inclined to behave similarly, for instance firms of a specific industry behave similarly due to common shock i.e. innovation of technology.

In addition to peer effect identification problem, the corporate managers as well confront the challenge of peer selection. Peer selection can be critical as literature revealed that financial analysts do not adopt unbiased approach to select peers (Bradshaw, 2011). Indeed analysts are provided incentives to create good corporate image. In this context Barniv et al., (2010) asserted that analysts try to exaggerate growth opportunities of firms. Leary and Roberts (2014) emphasized that peer firm selection base on peers who own same characteristics and encounter similar institutional environments i.e. same technologies of production as well as investment opportunities. Furthermore, industry classification is another approach used to select peer group. Industry categorization is made by classifying firms on the basis of similarity in the production processes, products as well behavior of financial markets.

In this line, De Franco, Hope and Larocque (2015) argued that analysts too utilized 2-digit global industry classification (GIC) to select peer firms which were about 92%. Moreover, Boni and Womack, (2006) emphasized that analysts' choice regarding peer firm selection is better represented by GIC as compared to standard

industrial classification (SIC) which were just about 68%. Academic researchers often match firms considering standard economic factors for example, the same size, industry, and numerous other probable dimensions (Barber & Lyon 1996). And practitioners' declare firms as peers who assume same risk, have similar growth and return after tax on capital (Koller, Goedhart, & Wessels, 2005). So, different mechanisms have been highlighted by numerous researchers (above mentioned) to identify peers.

Besides peer identification and selection discussion concerning who is to be imitated or followed was remained the topic of larger interest of various researchers. In this concern, Bikhchandani, Hirshleifer and Welch, (1992) asserted that people instead of relying on their own information tends to observe and follow the actions of those who are ahead of them. Moreover, those who are likely to be perceived as having better information can be capable of becoming "fashion leaders" (Bikhchandani et al., 1998). Studies conducted by Haunschild and Miner, (1997) as well Haveman, (1993) depicted that profitable as well as large sized firms are followed by other firms. Such as small firms may think that their larger rivals' are equipped with better information consequently like to follow them.

As well, actions of those firms are more likely to be imitated who have enjoyed high success rates in the past. Additionally social network theories advocates that network ties among firms facilitates them to have full information concerning each other which assists in imitation (Gulati, Nohria & Zaheer, 2000). Furthermore, young firms lack sufficient information, market experience as well as resources so they prefer to copy the behavior of their peers to mitigate uncertainty as well as associated failure risks (Hadlock & Pierce, 2010). Moreover, firms who are financially constrained response less to the behaviors of peers as imitation is supposed to be expensive for them as it requires high financing cost as compared to non-constrained firms (Chen & Ma, 2017).

In the context of organizations Porter (1980) highlighted that corporate actions are highly influenced by what their peer firms (competitors) do. In this regard, Conlisk (1980) concluded that as decision making carries cost so the optimal solution is to imitate behavior of all those who are well informed. Environmental complexity

has made difficult for managers to predict and control their actions and associated consequences. The decisions which are taken under uncertain situations carry uncertain outcomes (Knight, 1921). Since lack of sufficient information hinders managers' ability to analyze and determine cause and effect relationship to assess full range of possibilities (Milliken, 1987).

This lead the attention of researchers in numerous areas of economics and finance to explore the impact of peers on financial decision making. Seeing that decisions taken under uncertainty, ambiguity and time pressures can impair strategic thinking (Leder et al., 2013). Therefore in complex strategic situations imitation can be best available option (Apesteguia et al., 2007; Offerman et al., 2002). In the corporate world maximum decisions taken by firms reflect those of their peers. Like, investors focus on what peers do while analyzing and comparing investments (De Franco et al., 2011). Similarly, fund managers also uses peer to structure investment and portfolios (Chan et al., 2007).

Peers are in addition used to set executive compensation (Albuquerque, 2009). Another study conducted by Bizjak et al., (2008) too reported that 96% of firms employ peers while setting executive pay. A survey conducted by Graham and Harvey, (2001) indicated that CFOs of numerous firms uphold this version that their own financing decisions are highly influenced by their peer firms financing decisions. Recent study conducted by Bursztyn et al., (2014) shown that provision of information to only some individuals affected their peers' decision regarding purchase of assets as well as purchase of insurance (Cai, De Janvry, & Sadoulet, 2015). In short, peers can be used as benchmarks to map valuation, forecast, and compensation or to compare against any important financial decisions.

Furthermore, numerous studies highlighted the importance of peer effect in making corporate policies. As Fracassi, (2016) evidenced that firms who are socially connected make same type of investment decisions. Foucault and Fresard (2014) as well identified that peers' valuation determines competitors' investment decisions. In addition, empirical studies conducted by Frank and Goyal (2009) as well as MacKay and Phillips (2005) evidenced that average leverage ratios of industry determines capital structures of firms. Likewise, Leary and Roberts, (2014)

confirmed that peer firms have almost similar type of corporate financial policies. Similarly, Patnam, (2011) identified that firms' investment strategy and executive compensation are positively connected with peers. Furthermore, Tom and Walter, (2011) recommended that within an industry the firms' dividend policies are most likely to converge. Accordingly corporate managers adopt mimicking behavior to serve them best regarding financial decisions.

The most compelling reasons behind this mimicking behavior can be imperfect information as well as uncertainty (Lieberman & Asaba, 2006). As noted by Milliken, (1987) decisions taken under uncertainty utilizing imperfect information carries risk as managers' in such situations cannot determine cause and effect relationship to know possible consequences. Hence, under such environmental conditions managers' prefer to imitate the activities of their peers. These findings suggest that peers' decisions considerably affect different corporate financial decisions. In this context, numerous studies exist on peer effect and financial decision making in the developed countries (Bradshaw et al., 2010; De Franco et al., 2011; Francis, Hasan & Kostova, 2016; Minutti-Meza 2011; Park, Yang & Yang, 2017 etc). Yet in emerging country Pakistan researchers' ignored the need to inspect this imperative relationship or very little has been done in this regard. Hence, the thesis is going to comprehensively and empirically examine the connection between peer effect and financial policies (capital structure, dividend policy and investment policy) in emerging country Pakistan.

Furthermore, various studies mentioned above captured different aspects of peer group effect on different types of financial decisions of firms. Different motives underlying mimicking behavior of firms such as uncertainty, ambiguity, imperfect information, competitive pressure have been provided (Baum & Haveman, 1997; Bikhchandani, Hirshleifer, & Welch, 1992; Lieberman & Asaba, 2006; Peress, 2010). But no study has investigated or the literature so far is silent regarding inspecting either firms who mimic financial policies also carries same financial performance or not. In real terms the main objective of every business organization is wealth maximization. In doing so firms in order to mitigate competitive pressure imitate the perceived best financial decisions of their successful rivals. So this study

also intends to find out that either firm's mimic financial decisions of their peers to get back same financial performance. **Therefore, the first theoretical gap this study is going to address whether firms' mimic financial policies to restrain same financial performance.**

A contextual factor that considerably affects the firms' financial decision making is Corporate Governance (CG). Numerous empirical studies carried out by Elzahar and Hussainey, (2012), Ntim, Lindop and Thomas (2013), and Oliveira, Rodrigues and Craig, (2011) upholds the same version that there is impact of CG on numerous facets of corporate financial policy decision making. Specifically, Arosa et al., (2010) asserted that ownership structure determines corporate mechanism of any country which impacts different financial decisions. The distinguishing features of CG for developed nations with those of emerging nations may escort different results as well as implications. For instance, in the developed countries the ownership structure of the firms is widely held that is dispersed (Bishara, 2011; Elsayed, 2007) contrarily, emerging countries firms have concentrated ownership (Rwegasira, 2000).

Likewise, Claessens, Djankov and Lang, (2000) holds that where there is highly concentrated ownership, dominating shareholders have all controlling rights which are threatening for shareholders who are in minority. This thus may doubt the abilities of non executive directors which are considered as "rubber stamp" as they are not selected for monitoring purposes (Haniffa & Cooke, 2002). This supremacy to control shareholders is alike insider model of CG which is relationship oriented style where there is high concentration of shareholding, voting power, cross shareholding as well inter-firm relations.

Various studies highlighted the importance of ownership structures. In this context, a study conducted by Omran, Bolbol and Fatheldin, (2008) depicted that ownership structures matters a lot as firms having highly concentrated ownership performed in a different way from those with dispersed ownership structure firms. Anderson and Reeb (2003) explored non-linear connection between firms having highly concentrated ownership and firms having dispersed ownership and

concluded that where there is control of all business activities their performance was comparatively better than with dispersed ownership firms.

In Pakistan mostly businesses are highly characterized by concentrated ownership where shareholders fully controls as well manage affairs of firms (Ibrahim, 2006). Majority shareholders holds maximum shares of the company as well controlling rights to manage business. This domination by concentrated ownership is totally different from Anglo-American corporate governance structure which characterizes diverse ownership.

Different connections concerning concentrated ownership have been explored in Pakistan. In this line, past empirical studies' results depicted ownership concentration as a double-edged sword having dual impact. For instance, Mirza and Afza (2010) carried out a research aiming at exploring ownership structure as a determinant of dividend and found negative connection between them. In addition to this, Irshad et al., (2015) took an integrative approach to explore the connection between ownership structure and board effectiveness on firms' performance and concluded adverse effects on firms' financial performance.

Contrarily, Ayub (2005) confirmed a significant role of ownership concentration on dividend declaration. This finding was supported by the results of Ahmad and Attiya (2009) who inspected the impact of general corporate characters and found a positive relation between ownership concentration and dividend payout ratio. Additionally, Javid and Iqbal (2008) found positive impact of ownership concentration on performance of firm. Similarly, Din and Javid (2011) investigated and found positive relation between firms' efficiency and family ownership structure.

In the context of Pakistan numerous studies (mentioned above) has been conducted relating to investigating the impact of ownership concentration. Yet the moderating role of ownership concentration has to be revealed. Thus the present study is different from prior studies as it attempts to explore the moderating role of ownership concentration in relation between peer effect and corporate financial policies. Since ownership concentration is taken as a moderating variable which influences peers' behavior concerning financial policies of firms. So, it seems pertinent to

provide logical justification regarding how ownership concentration strengthen or weaken proposed relationships.

In fact, concentrated ownership comprising large shareholders have high economic stakes and this compels them to monitor and manage actively (Shleifer & Vishny, 1986) so one of the major concern for them is to enhance personal as well as firm's reputation (Dyer & Whetten, 2006). Furthermore, majority owners in order to increase their personal wealth attempt with their fullest potential to accelerate firms' performance. Their large ownership stakes compels them to choose right strategy; hence they prefer to choose such strategy which ensures their long term survival (Anderson, Mansi & Reeb, 2003). Thus for their long term survival and growth they may prefer to imitate the behaviors of their successful peers. Moreover, the influence of concentrated owners concerning filling important positions can be another reason for peer effect. When key positions in the organization are filled without considering required knowledge, skills or expertise and base on kinships and friendships (Gomez-Mejia, Nunez-Nickel, & Gutierrez, 2001) such decisions could lead firms towards technical competitive disadvantage. So to guarantee long-lasting business survival, they may mimic the actions and decisions of profitable peers (Haunschild & Miner, 1997).

Furthermore, different shareholders may have different abilities to manage, monitor and control management, they may have dissimilar incentives/inducements (Koke & Renneboog, 2005), their inclination to extract personal benefits can also be different hence they may adopt different strategies. In real terms, dispersed ownership may have dispersed goals accordingly may influence corporate financial decision making differently (Rashid & Nadeem, (2014)). As different persons would definitely have difference concerning interests which may give rise to conflict and this can be detrimental. On the other hand, concentrated ownership in businesses ensures common goals and interests consequently decisions to imitate who or not may lead towards one direction. **Hence, the study has second major theoretical contribution to empirically examine the moderating role of concentrated ownership in relation between peer effect and corporate financial policies.**

## 1.2 Research Gap

The first theoretical gap this study is going to address whether firms who mimic financial policies also restrains same financial performance or not.

The study has second major theoretical contribution to empirically examine the moderating role of concentrated ownership in relation between peer effect and corporate financial policies.

## 1.3 Problem Statement

Peer effect has been critically examined in numerous fields like social psychology and economics. Different empirical studies tested the effect of peers in the field of education, crime, socio-economic outcomes, workplace etc. Since last decade this newly developed concept “peer effect” has gained attention of researchers in the field of finance. As there exist number of theoretically significant relationships that needs to be explored. Thus this study is going to examine a comprehensive empirical analysis to inspect the impact of peer group on firms’ financial policies.

In addition to above the extant literature concerning peer effect carried out in developed countries contexts, while studies addressing peer effect in emerging country Pakistan is rare in literature. In the developed countries the ownership structure of the firms is not closely netted as compared to ownership structure of emerging countries which is highly concentrated. So, this study is going to explore whether impact of peer group on firms financial policies is same for developed nations as well for emerging nation.

Peers’ financial policies imitation is integral for corporate managers. In Pakistan, research concerning peer group effect has not gained much attention of researchers. Indeed, there is scarcity of literature specifically in Pakistan as well as other areas of world on this perspective. Hence, the current study is going to investigate the imperative relation between peer group and firms’ financial policies.

## 1.4 Research Questions

This study investigates the following research questions:

### **Research Question 1**

Does peer group influences corporate financial decision making?

### **Research Question 2**

Do firms' mimic financial policies to generate same financial performance?

### **Research Question 3**

Does ownership concentration moderate the relation between peer effect and corporate financial policies decisions?

## 1.5 Objectives of the study

Specific research objectives of the study are as follows:

### **Research objective 1**

To find out the impact of peer group on corporate capital structure.

### **Research objective 2**

To explore the peer group impact on corporate dividend policy.

### **Research objective 3**

To investigate the effect of peer group on corporate investment policy.

### **Research objective 4**

To inspect either firms who mimic financial policies also captures same financial performance or not.

**Research objective 5**

To analyze either ownership concentration moderates the relation between peer effect and firms' capital structure.

**Research objective 6**

To find out either ownership concentration moderates the relation between peer effect and firms' dividend policy.

**Research objective 7**

To investigate either ownership concentration moderates the relation between peer effect and firms' investment policy.

## 1.6 Contribution of the study

During the past several years, economists in the developed nations put forth maximum effort to understand the effects of peers in the decision making. Understanding this phenomenon from the perspective of emerging nation is much more important. The extant literature so far has highlighted the importance of using peers information and decisions to make ones' own financial decisions. In this context, numerous studies exist on peer effect and financial decision making in the developed countries (Apesteguia et al., 2007; Bradshaw et al., 2010; Bursztyn et al., 2014; Cai, De Janvry, & Sadoulet, 2015; De Franco et al., 2011; Guilding, 1999; Minutti-Meza 2011; Moon & Bates, 1993; Offerman et al., 2002 etc) yet in emerging country Pakistan researchers ignored the need to inspect this imperative relationship or literature is silent in this regard. Hence, the study has first theoretical contribution to empirically examine the connection between peer effect and financial policies in Pakistan. This study contributes to expand the existing body of knowledge relating to peer effect and corporate finance literature by providing empirical evidence from Pakistan.

Moreover, this study is the first study to investigate the impact of concentrated ownership as moderator on peer group effect and firms' financial policies in the context of Pakistan. Hence, this is another contribution of the study by exploring and understanding the underlying mechanism of peer group imitation regarding financial policies decisions and this is contextual contribution of the study.

Similarly, this study highlighted the underlying objective of mimicking behavior of firms. If firms set their policies in the response of their peers this may bring favorable outcomes or unfavorable outcomes. This may lead different implications for economics and finance. For example, the findings could help them in explaining and understanding what to imitate and/or what not to imitate?

Furthermore, this study can also impact society as this study moves around the effect of peers in corporate decision making. Individual is micro element in every society wherein he/she has to take decisions either by following peer decisions or by taking their own. By understanding how peers at the corporate level impacts financial decision making of one another one can get useful insights regarding ones' own decision making. Hence this study is helpful from this perspective.

Lastly, this study laid the foundation for future research concerning peer effect and corporate financial decision making in the context of Pakistan. Moreover, this study served as a ground work for understanding underlying mechanism of mimicking behavior to advance further research. This study can be extended theoretically as well as practically.

## **1.7 Supporting Theories**

### **1.7.1 Economic Theories of Imitation**

Theory of Social learning or information cascades (Banerjee, 1992; Bikhchandani, Hirshleifer, & Welch, 1992) is most prominent economic theory of herd behavior which provides theoretical justification regarding why and when corporate managers observe and imitate decisions and actions of others.

Information cascades happen when people observe and follow the actions of those who are ahead of them instead of relying on their own information (Bikhchandani, Hirshleifer, & Welch, 1992). This is in fact Bayesian learning approach, for instance an individual has private information and behaves on the basis of that private information. Now his/her behavior exposed information to followers which thus may rationally ignore their own private information and mimic the actions/decisions of others, this is how information accumulates. For example, an agent want to purchase something as soon as he/she reaches market sees a long queue of people who are waiting to shop from a specific mega store. Though initially he/she intended to shop from elsewhere but long queue persuaded and suggested that mega store quality is high. Hence, inferences drawn by observing others may help him/her to decide to ignore their initial signals.

This economic theory permits the indication of fashion leaders. In this regard from sociological perspective, firms tendency to be imitated boosts when firms are large, more successful as well as more prestigious thus considered as more informative as well. Additionally, it may also depend upon firms' level of contact as well as communication with other firms. Thus those who are likely to be perceived as having superior information can able to become "fashion leaders" (Bikhchandani et al., 1998). Several research studies have indicated that firms larger in size as well profitable are most likely to be imitated (Haunschild & Miner, 1997). For instance, small firms believe that their larger rivals have better information so they may tend to follow them. Likewise, firms who have higher success rates in the past their actions are more likely to be followed.

As environment is more uncertain as well ambiguous and in such environments corporate managers cannot assess full range of possibilities as well cannot determine cause and effect relationship to analyze the association between their actions and outcomes with full confidence (Milliken, 1987). So, they prefer to rely on information and actions of others (which may be imperfect). In the same connection, Lieberman and Asaba, (2006) categorically argued about information-based imitation that is high environmental uncertainty pushes firms to imitate their successful competitors having superior information relating to future market position.

### 1.7.2 Theory of Competitive Rivalry

Firms may imitate others to lessen competitive rivalry. By doing so firms try to maintain their own position relative to competitors or it may be an attempt to neutralize antagonistic actions of their rivals. Lieberman and Asaba, (2006) sorted that low environmental uncertainty allows firms to imitate their competitors to maintain competitive equality (rivalry-based imitation). When firms have comparable resources as well market position then competition can be very tough which may erode prices and profits (Peteraf, 1993). To eliminate such situation, firms can go for choosing homogenous or differentiation strategies (Baum & Haveman, 1997; Gimeno & Chen, 1998). As differentiation carries huge cost so it is difficult as well risky to pursue this strategy. Therefore, firms choose to follow homogenous strategies of those of their rivals to lessen the level of competition or to reduce risk.

In this regard Porter (1979) suggested that firms from the same group behave similarly for the reason that pursuing divergent strategies may reduce overall industry profits as it may reduce the ability of the oligopolists to organize their activities tacitly. So they may adopt similar behavior to restrain level of competition. Additionally, Greve (1996) too affirmed that firms from the same group face higher competition within the members of their group as compared to with members of other group consequently they adopt similar behavior. Furthermore, in extremely competitive environment firms who bears high risks of bankruptcy needs to learn from the peers' strategies (Peress, 2010). This may help to some extent in mitigating competitive pressure (Klemperer, 1992).

It also has been tested on multimarket perspective where firms in order to mitigate rivalry adopted same behaviors, practices and procedures (Leahy & Pavelin, 2003). When firms competes in several market places, they can cope with deviations in one market by getting aggressive responses from several other places thus easily maintain complicity. In multimarket context firms may act in response to competitors aggressive move in one market place with adopting similar move in any other market place and/or they may increase level of contact by matching competitors entry decisions.

Another underlying reason for imitation is to maintain relative competitive position and risk minimization. In this relation, Knickerbocker (1973) argued that if competitors imitate or match one another none of them can become better or worse relative to one another, this is just an attempt of risk minimization. This ensures that competitive capabilities of firms are approximately in balance. Head, Mayer, and Ries (2002) asserted that it can be only possible when managers of the firms are risk averse. In the similar connection several empirical studies confirmed that firms to sustain competitive equivalence imitate others in the group (Garcia- Pont & Nohria, 2002). As when more firms follow or imitate, the level of competition intensify which may diminish the incentive of imitation. Then firms' intention for imitation can be only to stop others from winning the race.

Other researchers investigated performance insinuations of imitation and obtained mixed results. In this regard, Miller and Chen, (1996) shown imitation as beneficial for performance of firm as it reduced cost as well competitive risk and increased acceptability of firms actions. Moreover, helps in promoting network effect, ensures common standards which are beneficial to firms as well as consumers. In contrast, researchers showed negative impact of imitation by indicating imitation led intense competition among rivals which resulted in mediocre performance (Baum & Mezias, 1992; Peteraf, 1993; Porter, 1991). But best performing firms can deal with this issue by balancing between differentiation and imitation (Deephouse, 1999).

# Chapter 2

## Literature Review

### 2.1 Peer Effect

Soon after the influential report of Coleman et al., (1966) regarding the effects of peers' on students' school performance became public domain. It has been researched extensively by researchers' of different disciplines such as sociology, education as well as economics (Van Ewijk & Slegers, 2010). Across different disciplines different terminologies are used to describe the effects of peers'. For example, in economics, "peer effect and/or peer group effect" is normally used (Zimmer & Toma, 2000), in social sciences, "compositional effect" (Van Damme et al., 2002) or "aggregated group-level effect" (Hutchison, 2003) are used.

Peer effect can be referred to as a certain change in an individuals' behavior that is mainly because of its peers'. Numerous studies highlighted the significant role of peers regarding adolescent decision making (Sewell et al., 1969; Sewell et al., 1970), specifically career choice (Furman & Buhrmester, 1992), and career development and opportunities (Naz et al., 2014). Moreover, it has been declared as a type of social influence (Calvo-Armengol & Jackson, 2010) which can impact individuals' in education (Card & Giuliano, 2013), crime (Moffitt, 2001), workplace (Bandiera et al., 2010) as well as on herding behavior (Celen & Kariv, 2004).

Peer effect has been referred to as "wide range of externalities which occurs when firms' behavior is influenced by the behavior and characteristics of its chosen reference group firm" (Patnam, 2011). Additionally, when financing objective function of firms' overtly influenced by the actions and/or characteristics of its peer firms those firms are likely to have peer effect on them (Leary & Roberts, 2014). In the last few years, economists' utilized efforts to explore how peers' can impact financial decision making.

In this line, two most compelling reasons highlighted by researchers' can induce corporate managers' to imitate their peers' which are information needs as well as competitive pressures (Lieberman & Asaba, 2006). While it is costly as well as time consuming to acquire sufficient, right and relevant information. And secondly by imitating rivals' helps in reducing competitive pressures. From social perspective, this approach is considered as irrational as well as inefficient (Scharfstein & Stein, 2000). Thus exploring and understanding this approach from the corporate world's perspective is imperative as firms constitute financial markets.

A voluminous literature emphasized on utilizing peers' information as well as decisions to make decisions own financial decisions. In this context, Moon and Bates (1993) confirmed that firms' rely heavily on peers' financial information to take their strategic decisions. These findings are supported and confirmed by (Guilding, 1999). Furthermore, Pae (2002) declared the financial reports information as a major source to obtain specific useful information relating to peers' as well as industry. Similarly Francis, Hasan and Kostova (2016) evidenced that peer firms' financial policy decisions determines firm's own financial policy decisions. Lately, Park, Yang and Yang (2017) too supported the effect of peer group on firms' investment decisions specifically financially constrained firms' greatly rely on peers' investment decisions. These arguments clearly evidence significant role of peers' in the corporate world. Nevertheless, theoretically it is much more problematic to identify peer effect.

## Peer Identification

The literature so far discussed in this study highlights the importance of peer firms in the corporate world. However, theoretically identification of peer effect can be critical due to reflection problem (Manski, 1993). Reflection problem may arise as it is hard to deduce either one's actions are result of actions or characteristics of its peers. So for accurate peer effect analysis three effects classified by Manski (1993) requires to be explored. These are: endogenous effect, exogenous (or contextual) effect, and correlated effect. Endogenous effect is referred to as the influence or impact of peer outcome which influenced firms' decision. For instance, a firm decides to assume corporate social responsibility as a consequence of their peer firm actions and outcomes.

Exogenous effect is known as the influence or impact of exogenous characteristics of one's peer on firm's decisions. For instance, the firm does not require issuing new public offering in the stock market but do so in the response of the offering of its peers'. Correlated effect can be captured where firms behave similarly because they are part of same reference group or face same institutional environment. For example, firms who belong to same industry also behave similarly to deal with common shock that is entry of new strong rivals.

Manski (1993) demonstrated that in the context of linear-in-means model two problems concerning identification occurs. First is the difficulty regarding distinguishing real social effects (endogenous plus exogenous effects) from those of correlated effect. Secondly, even if correlated effect does not exist mean outcome of the group and its characteristics exist in perfect collinearity because of interacting peers' synchronized behavior. Thus the identification of endogenous effect from exogenous effect hindered because of reflection problem. When two individuals' influence each other at the same time it much more difficult to segregate causal effect that they have on each other (Sacerdote, 2001). Generally the existence of exogenous peer effect entails that these characteristics affects both individuals' as well as peers' outcome. Moreover it is also important to know with whom individuals' interact in fact identification is not likely to be achievable unless group composition is known (Manski, 1993, 2000).

## Peer Selection

Besides peer effect identification problem, the managers of the corporate world also face certain issues concerning peer selection. Peer selection is not an easy task as it has been exposed in literature that in order to select peers financial analysts' adopt biased approach (Bradshaw, 2011). Since financial analysts' are induced with incentives for creating good image of the firms in the eyes of the public. So, they always attempts to overstate firms' growth prospects (Barniv et al., 2010). Various studies have been conducted and different mechanisms have been described by researchers' to select peers. In this concern, Leary and Roberts (2014) asserted that all those who share same characteristics as well similar institutional environment are said to be peers.

Additionally another useful approach concerning peer selection is industry classification, whereby firms are classified as per similarity in the products, processes of production and behavior encountered by them. Franco and Hope, (2012) depicted that 92% of analysts' selected peer firms using 2-digit global industry classification (GIC). Furthermore, Boni and Womack, (2006) too concluded that global industry classification is the best method to select peers than standard industrial classification (SIC). For academic researchers' specific economic factors such as similar size, industry and certain other consideration are useful in determining peers (Barber & Lyon 1996). And for practitioners' firms who have same level of risk, growth and return are said to be peers (Koller, Goedhart, & Wessels, 2005).

Various empirical studies stressed on the significant role of peers' in devising corporate financial policies. For instance, Leary and Roberts, (2014) asserted that peer firms' usually adopt same type of financial policies. From capital structure perspective, studies confirmed peers' influence on determining firms' capital structure (Frank & Goyal, 2009; Leary & Roberts, 2014; MacKay & Phillips, 2005). From the perspective of dividend policy Caneghem and Aerts, (2011) advocated that dividend policies within an industry are more likely to be same. From investment policy perspective, researchers' uphold the importance of peers' while making investment decisions (Foucault & Fresard, 2014; Fracassi, 2008; Patnam,

2011). These evidences advocate that in the corporate world managers' imitate others (peers) to make best financial policy decisions.

## 2.2 Financial Policies

### 2.2.1 Capital Structure

Capital structure can be referred to as a method whereby a firm uses debt, equity or combination of these two to finance its resources (Saad, 2010). The decision regarding structure of capital is very much important to handle overall functions and economic situation by utilizing different financial resources. Finance managers' always attempt to set an optimal capital structure specifically for equity traders and generally for staff, customers, lenders and society (Pandey, 2009). Modigliani and Miller's (1958) influential work on capital structure irrelevancy has pushed researchers' to develop an optimal capital structure. Miller and Modigliani (1958) argued that firms' equity itself determines its capital structure. According to them, the concepts concerning capital structure functions only in ideal situations /conditions of industry such as no taxes, lack of bankruptcy cost, perfect competition along with industry effectiveness referred to as MM-I. Whereas MM-II postulates that the expected return of common stock increase in proportion to debt to equity ratio increase. High portion of leverage do not affect value of the firm but it does affect risk and return of equity.

MM-I Theorem affirmed that in ideal industry conditions firms' equity is irrelevant to the capital structure of the firm. In other words, they demonstrated that in perfect market where there are no taxes, transaction as well as bankruptcy cost and asymmetric information, firms' value is unrelated to how firm generate finance. More to the point firms' perfect surrogate to finance its investment are internal as well as external funds; therefore financing decisions are unrelated to firm's value. Relating to MM-II, normally it is assumed that cost of capital would be reduced when firms' increases portion of debt. However, the increase in debt also makes remaining equity more risky as it increases cost of equity which in return offset

the benefit of low cost debt. Thus both effects offset each other as both overall cost of capital as well as firms' value remains unaffected. Their irrelevance theorem is accepted as true in general. Afterward researchers' devoted much time and effort to learn these market imperfections to set optimal capital structure.

Four main theories which provide useful insights regarding the firms' financing behavior are proposed. Almost all these theories assume that optimal capital structure has to be set through conducting cost-benefit analysis of debt. The advantage of debt consists of tax advantage because interest expense is deducted from tax. Contrarily, possible costs of debt include agency- bankruptcy cost as well as loss of tax shield protection on debt (Brealy & Myers, 2002). So, hypothetically deciding about optimal capital structure requires careful balance between associated benefits as well as costs.

### **2.2.1.1 Capital Structure Theories**

#### *The Trade-off Theory*

By relaxing the assumption of Modigliani-Miller (1958) concerning the non-existence of tax as well as bankruptcy costs, the trade-off theory implies that combination of debt and equity determines capital structure of the firm while controlling the cost of bankruptcy and benefits of tax saving. Static Trade-Off Theory (STT) details that firms' consider cost of debt and equity then proceed accordingly. The benefits and costs of debt selection determine the target ratio. Interest expense is always deducted from the tax, so higher amount of interest expense produces lower taxable profits and therefore results in lowering taxes.

On one hand, by overstating or increasing the amount of debt in the balance sheets can help firms' in getting the benefit of tax shield protection and on the other hand, increasing the amount of debt may also add to financial suffering. Higher levels of debts can result in bankruptcy if firms do not meet their debt obligations. Keeping in view this thus there is trade-off between benefits as well as costs of debt. As an increase in marginal cost of debt diminishes marginal benefit of debt, so firms

would borrow up to a certain level where tax benefit counterbalance the cost of bankruptcy (Myers, 1984).

The trade-off theory best clarifies the differences in industries regarding choice of capital structure, and give good reason for having moderate level debt ratios. A survey carried out by Graham and Harvey (2001) evidenced that from their chosen sample 81% of the firms consider target debt ratio to make financing decisions. Flannery and Rangan (2006) explored how quickly all those firms who have target debt ratios adjust towards their targets. They found that firms certainly have target regarding capital structure and those firms who have over or under debt adjust their capital structure accordingly to reduce the gap between actual and targeted debt ratios.

Nevertheless, Fama and French (2005) highlighted certain problems as trade-off theory cannot best explain corporate financing decisions. Particularly, a negative connection between debt and profitability contradicts main prediction of trade-off theory (Fama & French, 2002). Additionally, the trade-off theory fall short to clarify the fact that firms' who face similar amount of operating risk might set dissimilar capital structures.

#### *The Pecking Order Theory*

This theory of capital structure was proposed by Myers and Majluf (1984) by relaxing (Myers, 1984) no information asymmetry assumption of Modigliani and Miller (1958). This theory explains the financing behavior of firms from a diverse prospective. The theory entails that firms pursue a financing pecking order because of information costs (Myers & Majluf, 1984). When firms move toward external markets for the purpose of raising capital they face two costs: information asymmetry costs plus transaction cost. These extra costs on raising capital from external sources make capital pricey which causes firms to rely on internal source of funds instead of external source.

Separation of owners' from managers' usually generates asymmetric information. When managers' are better equipped with information regarding value of the firm they would strive to issue equity because of its higher market value (Myers &

Majluf, 1984). Attributable to asymmetric information equity may be underpriced thus making equity as a costly source of internal financing consequently firms' under-invest. Furthermore, debt carries fixed payments concerning interest which makes debt less sensitive to asymmetric information.

In this regard a study conducted by Baskin (1999) provided evidence that cost of borrowing can be 1% or low whereas cost of issuing equity lie between 4-15% of total raised amount. This study revealed that cost of equity is 3-14% more than cost of debt. So comparatively debt is better and favored source of external financing. Whereas, retained earnings are not affected by these types of problems due to symmetric information. Hence, firms considers both costs and as a result prefers internal source of financing over external source of financing and in other case prefers debt over equity where they utilize external source of financing (Donaldson, 1961). So, this theory proposes that when internal funds are deficient then capital structure of the firm is determined by firms' needs to spot investment opportunities in the external markets.

As opposed to trade-off theory, the pecking-order theory expects that there is non-existence of optimal debt ratio. As distinguished by Shyam-Sunder and Myers (1999) one of the best contribution of pecking-order theory is that it best explains negative impact of profitability on financial debt that was not explained by trade-off theory. Moreover, Shyam-Sunder and Myers (1999) concluded that corporate financing behavior is best described by pecking-order theory. Frank and Goyal (2003) found little support for the prediction of pecking-order theory.

More recent study conducted by Leary and Roberts (2014) evidenced relevance of pecking-order hypothesis and concluded that less than half of the debt as well as equity issuance decisions are classified by pecking-order theory whereby, adding in few suggested factors by trade-off theory can significantly increase the model's classification ability. Thus, more than 80% of the firms' financing decisions are accurately classified by the expanded model. This result supports the Fama and French (2005) speculation regarding pecking-order and trades-off theories contain elements of truthfulness thus needs to be considered as complementary in describing financing decisions of firms.

*The Agency Theory*

By relaxing no conflicts assumption, the agency theory states that debt serving obligations prevents self-serving managers from over-investing because of free cash flow as they may be apparently adding to increase firm's value, generates agency problem (Harvey, Lins & Roper 2004). Principal-agent problems mostly arise between external shareholders' and management who owe to separate the ownership and control. In this scenario, self-serving managers' in order to increase their control over compensation related matters and other resources attempts to grow firms' beyond optimal size.

In the past Jensen (1986) too argued that excess to free cash flows may escort managers' to over-invest or to engage in devastating activities to destroy value of the firm. Jensen (1986) proposed debt creation "control hypothesis" which expects to reduce agency cost associated with free cash flow by restricting managerial spending of available cash flow. Therefore, firms' by increasing the amount of debt controls managers. Thus this act indicated by researchers' as a controlling mechanism to regulate managers' (Lewis & Sappington, 1995).

The debt from agency perspective is entrenched in framework of trade-off theory where the monitoring effect was considered along with analyzing benefits as well as costs associated with taking additional debt (Frank & Goyal, 2009). Additionally, Stulz (1990) remarked that utilizing debt requires payment of funds from management which may reduce the cost associated with over-investment but may also worsen the cost associated with under-investment in case of low cash flows. In the mean time, from equity perspective where management control over resources may reduce the cost relating to under-investment while may worsen the cost relating to over-investment. Thus, utilizing both debt and equity on one hand decreases agency cost and increases other on other hand. So an optimal blend of debt and equity may be utilized to minimize costs associated with over- as well as under-investment.

Moreover, conflict of interest between bondholders' as well as shareholders' too confirms implication of agency theory (Jensen & Meckling, 1976). As debt holders' have privilege of preference on claims as compared to equity holders. Equity

shareholders' can engage in such activities for instance, by investing in riskier projects or by under investing in order to reduce benefits for debt holders. The problem associated with under investment is tough for growth firms as it leads them to impart important investment opportunities (Myers, 1977), thus equity financing is better for such firms. Conversely, the problem regarding under investment can be defeated by using short term debt financing (Grossman & Hart, 1988) which can facilitate in aligning shareholders' as well as managers' interest.

### *The Signaling Theory*

This theory holds that the problem associated with under investment is because of asymmetric information in the course of choosing capital structure. In this context, Ross (1977) model confirmed the transference of information as firms' value could be signified to outside investors by taking into account diverse financing options. He argued that by increasing level of debt, firms implicitly signal that they have capacity to meet extra debt obligation in respect of higher future cash flows and profits. Thus future expectations are signaled to the market.

### **2.2.1.2 Determinants of Capital Structure**

Numerous researchers' used different ways to inspect determinants of capital structure.

#### *Profitability*

The connection between leverage and firm's profitability is different as per both theories, i.e. pecking order & trade-off theory. As per pecking-order theory perspective profitable firms majorly rely on internal source (equity) of financing rather than external source (debt) to meet financial needs. The higher the profitability the larger the amount of retained earnings for firms to utilize equity. In other words, huge profits mean huge amounts of retained earnings available to firms which restrict firms to use external source of financing. Thus as per pecking order theory leverage and profitability are negatively associated. In addition to theoretical support of pecking order the same results was generated by Shah and Hijazi (2004) as well Hijazi and Tariq (2006). Contrarily, trade-off theory holds that

firms with high profits can attain high levels of debt as debt tax shield protection helps them in saving their profits. So, in this case leverage and profitability are positively related.

#### *Market-to-Book Ratio*

As confirmed by Chen and Zhao (2006) an extensive literature stressed book-to-market ratio as a measure of growth opportunities. Growing firms can have different aspects to deal with. On one side growing firms may evade borrowing finance as it causes them to impart rewarding opportunities of investment (Myers, 1977). As noted by Titman and Wessels (1988) growth opportunities are considered as capital assets of a firm which add in value but do not produce taxable income. Thus consistent with aforesaid theories (trade-off theory) a negative relationship exists between debt and growth opportunities as leverage decreases. On the other hand side, growing firms may require huge capital to expand which goes beyond internal financing to fund their investments. Thus in such cases or situations they might be more likely to acquire debt instead of relying on equity as proposed in pecking order theory by Myers and Majluf (1984). Furthermore, positive connection between leverage and growth was too supported by Deloof and Verschueren (1998).

Hence it is confirmed from previous literature that connection between leverage and growth opportunities can be positive as well as negative. In short, on one hand greater growth opportunities may compel managers to seek additional debts; on the other hand it may hold back managers' from acquiring debts. In addition to studies mentioned above several other studies confirmed positive (Rajan & Zingales, 1995; Shah & Hijazi, 2004) as well as negative (Delcours, 2007) relation between leverage and market to book ratio. It signifies that the direction of relation varies from context to context.

#### *Tangibility*

As per trade-off theory tangibility enable firms to acquire more debt at cheaper rates. Lenders' prefers to lend money to tangible firms as these firms can provide assets as security. Thus trade-off theory suggests a positive association between

leverage and tangibility. As per pecking-order theory Harris and Raviv (1990) squabbled that firms with less tangible assets counters more problems due to information asymmetry as it would make them issue more debt as equity issuance calls them to under-price them.

Whereas, firms with more tangible assets are large in size so they can issue equity at right price and necessitate not issuing debt to finance investments'. So, pecking order theory suggests a positive relationship between leverage and tangibility. These findings are also supported by Javid and Imad (2012) and Shah and Khan (2007) who also found positive connection between them. Despite all these discussion some research findings indicated insignificant connection between firms' leverage and tangibility. Like, Afza and Hussain (2011) as well Booth et al. (2001) also found insignificant connection between them.

#### *Firm Size*

Firms' large in size reduces default risk. Trade off theory holds that larger, established as well as reputable firms have more economical debt. In contrast, pecking order theory holds that bigger as well as diversified companies are well known in the market thus these firms can issue equity with no trouble as compared to companies smaller in size. Hence, a negative relation exists between leverage and firms size.

Additionally, large sized firms usually use debt financing whereas firms smaller in size are more likely to use equity financing. Aryeetey et al., (2004) confirmed that smaller firms face huge problems while dealing with credit as compared to larger sized firms. As larger firms success rates to get bank loans are comparatively high than smaller firms, thus the relation between firm size and debt is assumed to be positive.

### **2.2.2 Dividend Policy**

In recent times, dividend policy became one of the major corporate finance decisions. Dividend is the portion of profit which is distributed to shareholders'. Board of directors decides about the amount to be paid to the shareholders' depending

upon either firm's policy to pay dividend on quarterly, semi-annually or annually basis. Fifty years back, Miller & Modigliani proposed the theory of dividend irrelevance which entails that under specific conditions there is no correlation between dividend payment and rise in stock prices (Miller & Modigliani, 1958).

Prior to dividend irrelevance theory, it was generally assumed that increase in dividend payment helps in making shareholders wealthier as the uncertainty related with future cash flows can thus be reduced by them. Miller and Modigliani (1961) on the basis of their perfect market assumptions revealed that capital gains plus dividend are ideal alternative. Therefore, investors' need not to be responsive to dividend payment policies as they can make homemade dividends by amending their portfolios in conformity with their preferences. So, in perfect market, dividend policies are unimportant as well as irrelevant.

Later research studies by relaxing perfect market assumptions focused on how real world problems as well as consequential market imperfections can make dividend payment decisions related to firm value. A wide range of theoretical explanations concerning dividend payment relevancy has been made, however, empirical evidence provided by Frankfurter and Wood (2002), suggested that no dividend payment model individually or jointly got consistent support.

### **2.2.2.1 Dividend Payment Theories**

#### *Investors' Preference Theory*

Bird-In-the-Hand Hypothesis (BIHH) revealed that shareholders' prefer to get dividend today instead of getting it tomorrow. The underlying argument is that in the times of high uncertainty as well as defective information, investors desires to keep the bird in hand or to get current cash in the form of dividend instead of two birds in the bush or future capital gains (Gordon, 1959). This cash flow stability makes them more contented consequently enhances stock price as well as value of the firm. Gordon, (1959) utilized two year data of four industries to investigate BIHH and found that shareholders' acquire stocks for income or

dividends or to get both. Thus, concluded that the majority shareholders' acquire stocks just to get dividend.

Gordon, (1959) approach to measure retained earnings was considered biased by Diamond, (1967) who argued that firm's growth potential can be mirrored by retention size as well as quantity of external finance. However, he found little support relating to shareholders' favor dividend to retained earnings. Miller and Modigliani (1961) criticized the bird-in-hand perspective by disagreeing that real investment decisions of a firm determines the associated risk neither the way firm distributes its earnings. Baker, Powell and Veit (2002) empirical evidence too does not support bird in hand argument as most of the financial managers of NASDAQ companies disagreed with this perspective for dividend payments. Moreover, Shefrin and Statman, (1984) depicted that investors' prefer to receive constant dividend instead of one time huge capital gain.

#### *Signaling Theory*

The signaling theory of dividend payment is differentiated by asymmetric information among insiders as well as outsiders. It describes that managers' reveal their personal information concerning firm's current as well as future predictions to the capital market by payment choices for the purpose of closing the information gap between insiders and outsiders (Miller & Rock, 1985). Thus payment policy can be used by managers as a vehicle to communicate firm's real value. Consequently, outside investors' interpret this sort of information as good news and more likely to respond positively. On the other hand, cut in dividends are interpreted as bad news as firm is perceived to have poor future profitability which lead them to respond unfavorably. For this reason managers avoid cut in dividends to evade possible negative reactions.

Numerous studies highlighted and supported signaling theory perspective. As already discussed, managers' as compared to shareholders' are better equipped with all necessary information about the firm. And investors' lack sufficient information on which to base their investment decisions as they cannot rely on financial reports to spot investment. Thus paying dividend can signal potential investors' regarding value of the firm. In this context, Baskin and Miranti, (1997) argued that

when firms pay large amount of dividend it is an attempt to send signals to the market regarding better future prospects. Though, Black (1976) inquired either smaller amount of dividend declaration may also help in generating investment opportunities or not. Porta et al., (2000) argued that before 1990s dividend declaration predictions regarding future earnings were good but they found inconsistent results.

Koch and Sun (2004) found that dividend changes lead investors to also change their expectations with reference to persistence of earlier period earnings changes. Hence, changes in dividend may be interpreted by market as a signal concerning persistence of earlier period earnings changes. Moreover, Grullon et al., (2005) squabbled that regardless of positive correlation between dividend changes and future changes in earnings as well as profits, dividend changes does not contain any sort of information in relation to future earning changes. If firms pays dividend to send signals to the market then market must respond accordingly in the case of dividend declaration and dividend omission. Likewise, the studies carried out by Michaely, Thaler and Womack (1995) and Bali, (2003) found similar results concerning dividend initiation and dividend omission i.e. average excess return reported for dividend initiation was 3.4% and for dividend omission 7.0%.

#### *Agent-Principal Theory*

Shareholders' gives the control of their firms in the hands of non-owner managers' called agents. So managers are shareholders' agents (Jensen, 1986; Porta et al., 2000). When managers' put their personal goals ahead of corporate goals, there arise a conflict between managers and owners. As managers' desires to have strong bargaining position in the firm so they attempts to make firm grow up to that level where they can negotiate concerning compensation. This may boost conflict of interest between shareholders and managers. Shareholders' in order to reduce managerial control and power reduces the amount of resources by declaring dividend.

This theory also provides theoretical justification regarding the underlying reasons which compels firms to pay dividend instead of re-purchasing stock. The most compelling reasons can be corporate executives fear that their selling of shares could

be interpreted as bad signals by the market which may hinder future investments and growth. Moreover, their contracts may limit such actions of them. Different studies explored such agent-principal problems and found that firms where top five executives hold greater share of stocks give more dividend as compared to top five executives who have more stock options (Brown, Liang & Weisbenner 2007; Chetty & Saez, 2010).

#### *Tax Preference Hypothesis*

As per this hypothesis different tax rates on dividends as well as capital gains have differential impact on investors' preferences. When there is double taxation then dividend payment might not attract investors consequently firms hold profit in the form of retained earnings. On the other hand, change in tax code also changes investors' preference relating to payment of dividend accordingly. Like Edgerton, (2010) confirmed that firms (Real Estate Investment Trusts) who got special tax treatment as well as unaffected because of cut in tax lead towards an increase in payment of dividend. However, Chetty and Saez, (2010) declared dividend tax cut as one of the pertinent reasons that increased payment of dividend.

Dividend clientele hypothesis also best explains its relation with tax preference hypothesis. There are some observations of dividend clientele hypothesis for instance, certain kind of investors prefer dividends. Allen, Eberhard and Welch (2000) argued that institutional investors are more likely to be attracted by dividend paying firms because of tax advantage. Certain institutional charter restrictions may prevent them from investing in non-dividend paying firms. Conversely, Grinstein and Michaely, (2005) did not find support for the clientele hypothesis; they found that firms' payout policies better serve them in attracting institutional investors instead of payout policy of dividend declaration and payment. However, numerous empirical studies support the clientele effect. Pettit (1977) found a positive association between portfolios' dividend yields and investors' ages as well as a negative connection with income of investors'. Lately, Graham and Kumar (2006) showed that dividend paying stocks are being preferred by older as well as low income individual investors as they try to buy stock earlier so as to get dividend.

Lee et al., (2006) explored and found consistent patterns of tax-induced clientele effect.

#### *Life Cycle Theory*

DeAngelo and DeAngelo (2006) proposed life cycle theory to explain dividend payout behavior of firms. This theory entails that payment of dividend depends on firms' life cycle stage. For instance, in early years of firms' relatively came across plentiful opportunities at the same time have limited funds, consequently retains more profits and distributes fewer dividends. Contrarily, in later years firms' have enough funds but less striking opportunities to invest hence they prefers to pay dividend to lessen agency cost. So, as a firm reaches its maturity life the benefits associated with paying dividend overweight associated costs thereby leading firms to pay higher dividends. Therefore, dividend payment at this stage signals firms' maturity instead of capturing future investments and earnings.

DeAngelo, DeAngelo and Stulz (2006) tested the life cycle theory and found that firm's likelihood of uniform dividend payments increases with amount of equity earned in its capital thereby provided support for life cycle theory of dividend. This theory was later confirmed by Brockman and Unlu (2011). Chay and Suh, (2009) explored the relation between dividend as well idiosyncratic risk (using stock return volatility to measure cash flow uncertainty) and found that cash flow uncertainty as an imperative tool to decide about firms' payout policy. Additionally, Bradley, Capozza and Seguin (2005) too supported the results that firms who have lower uncertainty relating to cash flows offer paying dividends.

### **2.2.2.2 Determinants of Dividend Policy**

#### *Profitability*

Numerous empirical studies considered profitability as one of the major determinant of dividend payment (DeAngelo, DeAngelo & Skinner, 2004; Lie, 2005; Yegon, Cheruiyot & Sang, 2014). Fama & French (2001) asserted that higher profitable firms' also have higher inclination to pay dividends. Research from emerging nations (markets) also provides evidences in the support of profitability

as most significant component in determining dividend payment. In this connection, for example, Adaoglu (2000) carried out a research in Turkey and concluded that dividend decisions largely base on firms' earnings (profitability).

Moreover, a Malaysian study by Pandey (2001) too holds similar version concerning profitability and dividend payment. Aivazian, Booth and Cleary, (2003) compared emerging market firms with those of developed nation US firms and declared that for both samples profitability significantly impact dividend payment decisions. In the same connection, Al-Kuwari (2009), Nizar, (2007) as well as Al-Najjar and Hussainey (2009) declared profitability as a direct as well as strong determinant of dividend policy. Studies of Ahmed and Javid, (2009) and Eriotis and Vasiliou, (2004) stipulated that profitable firms as compared to non-profitable firms pay more dividends. As the ratio to pay dividend base on firms' current earnings (Baker & Powell, 2000) so they squabbled that greater the earnings of the firm the higher dividend payment would be made.

#### *Growth*

Growth has been extensively used in the financial literature as a proxy to measure dividend policy (Deshmukh, 2003). As firms' grow their opportunities relating to investment shrink, therefore, firms' have more cash flows to pay dividends. Porta et al., (1999) investigation revealed that in countries where shareholders' are legally protected, fast growing firms pays lesser dividends. Contrarily, in countries where shareholders' have low legal protection, firms gives higher dividend in order to make and sustain good name of them to capture best investment opportunities.

#### *Risk*

In several studies risk has been also taken into account to decide about dividend payment policy. Numerous empirical studies measured its relation with dividend indicating a negative connection between them. For instance, Grullon, Michaely and Swaminathan, (2005) affirmed that firms' who face lower risks gives higher dividends. In addition to this, Lie, (2005) evidenced that less fluctuation in operating cash flow results in higher payment of dividends. Moreover, Moreiras, Tambosi Filho and Garcia, (2012) investigated the relation between income and dividend

distribution and found that changes in income (profitability) due to uncertainty is negatively related to the distribution of dividend.

### *Leverage*

Various empirical studies found leverage to have impact on dividend payment policy. On one hand, firms' with huge free cash flow have greater tendency to give dividends and on other hand, firms' with huge leverage have less tendency to give dividends. Therefore, such firms do not prefer to borrow from external sources to increase their debt financing rather invest more to increase their equity financing (Benito & Young, 2001). As higher retention rate leads to lower down dividend payments (Friend & Puckett, (1964).

High leverage means the riskier the firm's cash flow which impacts dividend payments negatively. In this context, studies conducted by Higgins (1972) and McCabe (1979) found that long-term debt resulted negatively relating to dividend payment. Moreover, Rozeff (1982) indicated that high leveraged firms' to avoid cost associated with acquiring external capital lowers the amount of dividend payments.

An increasing number of recent studies confirmed the negative role of financial leverage on dividend policy (DeAngelo, DeAngelo & Skinner, 2004; Gugler, 2003; Islam et al., 2012). They argued that firms' who are highly leveraged do not pay their existing cash in the form of dividend to shareholders' instead focus on managing their internal cash flows to meet future financial obligations. Firms' who mostly rely on debt reduce their capacity to have free cash flows to announce dividend payment. Therefore, firms' reliance on debt is more likely to have adverse effect on the amount of dividend payment.

### *Free Cash Flow*

Free cash flow is another important determinant of dividend payment policy as researchers' provided positive as well as negative relation of free cash flow with dividend policy. For instance, La Porta et al., (2000) found that firms who have more "free cash flow" gives more dividends thus reducing agency cost associated with free cash flow. Moreover, they argued that free cash flow compels managers

to engage in wasteful activities thus speculating a positive connection between them. Conversely, Marfo-Yiadom and Agyei (2011) found negative yet insignificant relation between cash flow and dividend policy. However, Ben Naceur, Goaid and Belanes, (2006) found that highly profitable firms who have more constant earnings have the ability to manage larger cash flows consequently pays more dividends.

### 2.2.3 Investment Policy

Modigliani and Miller (1958) and Miller and Modigliani (1961) seminal work entails investment separation principle which states that firm's optimal level of investment only be determined by its actual consideration as well irrespective of firms' financial decisions. However, prior literature evidenced that some of the real world's financial problems like lack of internal funds availability as well restricted accessibility to external funds may impede firms' proficiency to invest competently (Fazzari, Hubbard & Peterson 1988; Guariglia, 2008). So practically sources as well as uses of funds must be properly balanced for optimal investment decisions. This is the reason that firms' under such conditions takes care of options concerning fund raising along with investment, as adjustment in one policy calls adjustment in other policy consequently (Gatchev, Pulvino & Tarhan 2010).

Since one of the most fundamental corporate decisions taken by the firms is investment decision to risk their finances in the hope of generating revenue in the future. One of the best known methods to decide whether an investment should be made is the net present value (NPV) technique. Net present value can be calculated by summing up all the discounted expected cash inflows at a discounted rate minus initial cash outflow of a project (Van Horne, 1992). The projects with positive NPV would be accepted and negative NPV would be rejected as it would not add value to shareholders' wealth. On one side, the NPV technique has been widely used by businesses and on the other side it is also not without critiques. For instance, prior research holds that NPV was not widely used by most of the companies (Lambrechts, 1976) contrarily recent studies holds that companies always prefer to evaluate capital budgeting projects using IRR and NPV (Correia

& Cramer, 2008) furthermore industrial firms prefers to use NPV method (Hall & Millard, 2010).

The supporters' of NPV technique like Graham and Harvey (2001) surveyed Chief Financial Officers (CFOs) and reported that 74.9% of them evaluate their investment projects using this technique. The opponents' of this technique such as Dixit and Pindyck (1994) stressed that the firms' discount rates for evaluating investment proposals/projects are normally 3-4 times the cost of capital. Lately, Ow-Yong and Murinde (2009) argued that practically there is non-usage of NPV technique, in other words there exists theory-practice gap. As argued by Arnold and Hatzopoulos (2000), this gap is to some extent because of unfeasible underlying assumptions of NPV technique. Consequently, practically NPV technique offers little power to explain investment behavior of firms. Keeping in view the significance of investment decision in adding value to shareholders' wealth, a lot of investment theories has been developed to fill up the theory-practice gap. These are:

### **2.2.3.1 Investment Policy Theories**

#### *Tobin's Q Model*

In 1969 Tobin developed Tobin's Q which is a market to book ratio that can be calculated by market value of the assets divided by book value of the assets. The underlying theory is that firms' who have Tobin Q ratios greater than one should have a reason to invest, as in this case the reproducing capacity of the assets is more than current replacement cost. On the other hand, firms' with less than one Tobin Q ratio restrain their investment. Tobin Q theory entails that all sorts of information concerning predictable future profitability have an effect on investment decisions of the firms' via effecting marginal Q. As, marginal Q greater than one (high) stimulates firms to invest more or to expand current levels of operations, whereas, marginal Q lesser than one (low) recommend firms to curtail investments. Since, the optimal level of investment is attained when the value of marginal Q is equivalent to one.

Certain empirical studies concluded a positive correlation between Tobin's Q and investment rates yet empirical performance of this model of investment is disappointing (Aggarwal & Zong, 2006; Erickson & Whited, 2000). This is because of certain reasons, for instance the application of Tobin Q cannot be observed due to non-existence of secondary market to trade ownership as investment. Consequently, in empirical studies an average Q usually served as a proxy measure for marginal Q (Erickson & Whited, 2000) which is problematic (Lensink & Murinde, 2006). Therefore, unsatisfactory empirical performance of this model is mainly because of measurement errors of severe nature.

Secondly, this model does not capture necessary information relating to important factors' like constraints of capital market, uncertainty as well as adjustment costs which may have an effect on investment apart from Tobin Q. In this regard, Ferrerer (1993) found that as compared to average Q uncertainty has large impact on investment. Moreover, Dixit and Pindyck (1994) suggested calculating the value of Tobin's Q as the anticipated present value of inflow that would be yielded thus Tobin's Q theory and NPV model has same underlying principle.

#### *Accelerator model*

The accelerator principle entails that stock of capital goods should be in desired proportion to production level, and firms make capital investment as an effort to minimize the gap between actual/existing as well as desired stock of capital goods (Lucas, 1967). Consistent with this view, if firms' have constant capital to output ratio, a change in output or sales usually requires firm to invest a corresponding amount to attain desired level of capital stock. From economic perspective the underlying logic of accelerator effect holds that increase in sales signify increase in profits indicating in future greater usage of on hand existing capacity, supporting firms to invest more on capital stock. This increase in capital expenditure cause multiplier effect as this may result in huge sales growth as well as profit margins. As opposed to this, decrease in sales volume also decrease profitability and capacity usage which consequently restrict capital investment and deteriorate firms' prospects through multiplier effect. A large number of empirical researches have been conducted to verify the relevance of the accelerator model. For instance,

Lensink and Sterken (2000) found that both in small and large sized firms' the investment decisions are more likely to be sensitive to increase in sales volume, this confirmed consistency of accelerator model's central prediction. Bo and Lensin (2005) inspected the relationship between uncertainty and investment of non-financial firms who are based on accelerator model, and found that change in sales has significantly positive relation.

The capital stock-output relation has been used in addition to develop an Error Correction Model (ECM), through which the differences associated with short-term as well as long-term influences concerning changes in firm's output resting on its investment can be made (Bloom, Bond & Van Reenen, 2007). The specification of error correction model has been extensively used in empirical studies concerning investment. In this line, Bond et al., (2003) explored capital stock-real sales dynamic connection of manufacturing firms' and found co-integration between them depicting relevance of error correction model. Prominently, error correction terms was found to be signed correctly as well as significant in all regression estimations signifying that capital stock beyond preferred level is generally linked with lesser future investment, and vice versa.

In addition to this, Guariglia (2008) too found that firms in the long run mostly practice to adjust their capital stock in the direction of targeted level in proportion to real sales of them. Though, both above mentioned models for ignoring the significant impact of financial as well as other factors on investment decisions have been criticized by researchers'. In this regard studies conducted by Bond et al. (2003) and Guariglia (2008) using error correction model explored the important role played by financial variables and found a highly significant role of cash flows and profits in determining investment decisions signifying misspecification of standard error correction model. Furthermore, Bo and Lensink (2005) and Lensink (2002) investigated using accelerator model the impact of uncertainty on investment behavior of firms and concluded that this model of investment is neither complete (economically) nor adequate (statistically) as it failed in capturing the role of other associated factors such as financial constriction as well as uncertainty in determining corporate investment decisions.

*Financial Constraint Model*

As per Modigliani-Miller hypotheses, firms' investment decisions are independent of firms' financial choice decisions. Yet their irrelevance hypotheses failed to consider imperfections of capital market like asymmetric information problems plus associated financial constraints. Myers and Majluf (1984) filled this gap by offering useful insights relating to underinvestment problems that may be confronted because of information asymmetry. According to them, when managers' are equipped with better information about firm's value, they attempt to raise funds from external sources to finance their investment decisions by issuing new equity that would may be interpreted by outside investors as firms' being overvalued.

As a result, the rational outsider investors by demanding higher required rate of return may undervalue the firm. This increase in external financing cost consequently decreases NPV of projects which may compel firms to miss important investment opportunities as firms' have insufficient internal funding thus causing underinvestment. Thus, the cost associated with both acquiring new debt and issuing new equity from external capital market considerably differ from the opportunity cost relating with generating funds internally. Therefore, financial constraints like lack of internal funding and costly access to external funding constrain investment decisions (Fazzari, Hubbard & Peterson, 1988).

A significant amount of studies has focused on investigating an important role of financial constraints on corporate investment decisions (like Almeida & Campello, 2007; Fazzari, Hubbard & Peterson, 1988; Guariglia, 2008 etc). The most pioneer work of Fazzari, Hubbard and Peterson (1988) explored financial constraints effect on investment using Tobin Q and accelerator models. They found in each case that the investment pattern of low dividend paying firms' is more likely to be receptive of cash flow fluctuations and are more constrained financially, whereas high dividend paying firms' are comparatively less sensitive to cash flow fluctuations as well as less constrained financially. These results confirmed that imperfections in capital market lead financial constraints for investment decisions. On the other hand, Kaplan and Zingales (1997) found that firms' who are less financially constrained displayed higher levels of sensitivity as compared to firms' who are more financially

constrained. In recent times, Guariglia (2008) by distinguishing between internal as well as external financial constraints investigated and found their impact (separately and jointly) on investment. Moreover, Almeida and Campello, (2007) and Bond et al. (2003) too confirm that corporate investment decisions are affected by financial constraints.

### *Real Options Model*

The earlier models of investment were criticized for ignoring the effects of uncertainty on investment behavior of firms. In this vein, recent studies searched to address shortcomings by incorporating uncertainty relating to firms' prospects as an important determinant of corporate investment behavior (Baum, Caglayan & Talavera, 2008; Carruth, Dickerson & Henley, 2000). Generally the real option approach is considered as the most promising in addressing the relation between uncertainty and investment. This theory provides a better framework for depicting investment behavior of firms in ambiguous situations because in option the investment decisions could be delayed until getting new information relating to option value (Carruth, Dickerson & Henley, 2000).

Dixit and Pindyck (1994) proposed real option investment theory which states that investment opportunity either irreversible or partial irreversible have to be taken into account as call option and before expiry that could be exercised at any time. The literature relating to financial options depicts that if underlying financial asset is more volatile it increases their option values which as a result also increase the value of investment. Thus, in order to spot and make optimal decisions concerning investment, the real value of the option needs to be considered as part of the total cost of the project. Since, increase in uncertainty discourages instant investments, therefore, the real option theory forecasts negative impact of uncertainty on investment behaviors' of firms.

An extensive research supported the prediction of real options theory of investment on uncertainty-investment connection. Guiso and Parigi (1999) explored the impact of demand uncertainty on investment decisions of manufacturing firms and found that uncertainty resulted in weakening the response relating to investment and slowed down accumulation of capital. Bond and Cummins (2004) too found

negative influence of uncertainty on capital accumulation both in short as well as in long run. Besides, Bulan (2005) also found strong support to the predictions of real options theory of investment by indicating uncertainty relating to both firm as well as industry caused firms' to increase the option value to wait for and restrict investment. Conversely, studies also found uncertainty-investment connection as positive (Abdul-Haque & Wang, 2008; Lensink & Sterken, 2000). Therefore, latest literature on corporate investment behavior revealed the importance of uncertainty concerning future prospects of firms', yet there exists number of theoretically vague as well as empirically indecisive results regarding investment-uncertainty relationship (Baum, Caglayan & Talhadura 2008; Lensink & Murinde, 2006).

### **2.2.3.2 Determinants of Investment Policy**

#### *Stock Return*

Stock price is considered as an important investment policy determinant. Recent studies confirmed the informational role played by stock price which guides investment policy of the firms (Bond, Edmans & Goldstein, 2012). By valuing peers' stock prices one gets useful insights which reduces uncertainty relating to investment decisions. Investment policy of the firms' aptly responds to peers' stock prices volatility (Ozoguz & Rebello, 2013). This is further confirmed that for firms' investment policy decisions, valuation of peers' stock prices matters a lot (Foucault & Fresard, 2014). In the similar vein Dougal, Parsons and Titman, (2015) too holds the same version concerning stock prices as determinant of investment policy.

#### *Free Cash flow*

Free cash flow is significant determinant of investment. Free cash flow has been referred to as cash flow beyond which is required to maintain assets in business and for financing new expected investments (Richardson, 2006). Decisions regarding spotting new investment opportunities and exploiting them depends heavily on the availability of cash. If a firm has excessive free cash flow it would prefer to

invest in more optimal investment projects (Vogt, 1997). If firms have extreme free cash flow that can be utilized for investment purposes. Availability of internal funds ensures investment decisions as the main purpose of allocating funds is tied with generating more future cash inflows.

Recent study by Chen and Chang (2013) evidenced that the average cash holdings of the peers' significantly impact the ratio of cash to total assets. They squabbled that in order to reserve cash firms' mimic others for the purpose of maintaining their relative position. For instance, if peers of a specific group have excess cash to spot new investments' as one of their rival your firm also should have excess reserved cash to avail that opportunity.

### *Growth*

In the prior literature, sales growth is extensively used as a determinant of investment (Asker, Farre-Mensa & Ljungqvist, 2012; Bloom, Bond & Van Reenen, 2007; Whited, 2006). Growth rate of a firm determines its financial strength. It means an increase in growth rate indicates that firm is financially strong to avail new optimal investment opportunities.

### *Leverage*

Numerous researchers' declared financial leverage as a vital determinant of investment decisions (Aivazian, Ge & Qiu, 2005; Fukuda, Kasuya & Nakajimi, 2005; McConnell & Servaes (1995). It has been confirmed that highly leveraged firms' reduces their ability to finance investment (Fukuda, Kasuya & Nakajimi, 2005). As high levels of debt constrains firm's ability to invest. In the similar line Ahn, Denis and Denis, (2006) attributed underinvestment to leverage. Furthermore, Campello (2006) and Odit and Chittoo (2011) too confirmed negative connection between financial leverage and investment decision.

On one side where firms' with high levels of cash flow spot and invest in new investment opportunities on the other hand highly leveraged firms find it threatening to invest. High leveraged firm confirms the more risky it is which thus negatively impact investment decisions. Thus, if firms' have high debt financing this would likely to impact adversely on investment decisions of the firm.

## 2.3 Peer Effect & Financial Policies

### 2.3.1 Peer Effect and Capital Structure

In general the motivation for mimicking behavior concerning capital structure has derived from herding behavioral designs (Devenow & Welch, 1996). In this context, Zeckhauser, Patel and Hendricks (1991) asserted that managers' may engage in herding activities while setting policies for capital structure. It has been already proven by Banerjee (1992) and many more others' that acquiring information is costly as well as time consuming (Conlisk, 1980) so managers' prefers the decisions of others for making their own. Generally, it happens when other firms' are considered as more expert in the market place (Bikhchandani, Hirshleifer & Welch (1998).

Peer effect in capital structure can be easily understood by simplifying this phenomenon let's suppose there is no prior model to determine firms' capital structure. Therefore, managers' find it difficult to choose an optimal capital structure for their firms' as no previous information was available to them. As a result, they prefer to rely on the information of their peers' in an industry. Hence gaze at peer firms' characteristics as well as actions for making their own decisions (Leary & Roberts, 2014). Thus using peer information to set one's own capital structure and/or taking other financial decisions can be referred to as peer effect.

There can be number of reasons for peer effect in capital structure. Like, Bolton and Scharfstein (1992) proposed a model wherein greater level of leverage fuels cut-throat price competition from lesser leveraged competitors. If the projected cost of this cut-throat behavior is severe then under such conditions firms' who are highly leveraged will mimic their less leveraged competitors' capital structure. Correspondingly, Chevalier and Scharfstein (1996) suggested a design wherein firms' who are highly leveraged tends to under invest in the periods of industrial depression ultimately lose market share for conventional rivals. Accordingly, this loss can trigger firms' to imitate conventional policy guidelines of their peers'.

Peer effect in capital structure was particularly explored by Leary and Roberts (2014). They recommended that financial policies including capital structure to large extent are influenced and affected by their peers' indicating these effects as more powerful as compared to other effects mentioned in the literature. They found significant impact of peer effect on firms' financial policies as well as firms' leverage by inspecting the underlying mechanism of such influence. So, on the basis of above mentioned arguments we may hypothesize that:

$H_1$  : There is impact of peers' on firms' capital structure.

### 2.3.2 Peer Effect and Dividend Policy

Peer effects' theoretical models confirmed the existence of peer effects. A sequential decision model which was proposed by Banerjee, (1992) affirmed that every decision maker in order to make his/her own decision imitate the previous decision maker. This optimizes the level of decisions they make. Prior study of Linter (1956) in which he interviewed 28 CEOs led him to conclude that managers' in order to determine and adjust payout ratios follow their peers'. So peer effect is one of the most important determinants of dividend payment policy. Banerjee (1992) argued that optimal dividend policy of the firm does not solely depends on private information owned by a manager rather it depends upon decisions taken by their peers.

DeMarzo, Vayanos and Zwiebel (2003) declared peer effect as rational determinant of dividend policy. According to them, observation of peers' decisions escort managers' to know best policy for their firms'. Moreover, Caneghem and Aerts, (2011) advocated that dividend policies within an industry are more likely to be similar of those of their peers. Thus, firms' choice of dividend policy concerning when and how much dividend should be paid depends largely on peers' decisions. On the basis of aforementioned evidences we may hypothesize that:

$H_2$  : There is impact of peers' on firms' dividend policy.

### 2.3.3 Peer Effect and Investment Policy

Imitation usually takes place in the environments of uncertainty and/or ambiguity. Managers' who take decisions in uncertain environment are unaware of the consequences of their chosen actions. This may compel them to imitate peers' behavior or actions to deal with imperfections as well to maintain good reputation of them (Bikhchandani, Hirshleifer, & Welch, 1992). Managers' may also mimic others' to mitigate intense rivalry and associated risk (Baum & Haveman, 1997; Gimeno & Chen, 1998; Greve, 1996).

Corporate investment policy is imperative as it decides about corporate development. Appropriate investment not only ensures corporate development, it also confirms efficient utilization of available resources promised to enhance performance as well as market value of firms'. Contrarily, poor investment may threaten firms' financial wellbeing and can lead them towards bankruptcy. Thus, firms within same industry and strategic group may be inclined to adopt same behavior to mitigate competition and to gain competitive advantage (Klemperer, 1992; Peteraf, 1993).

Numerous recent studies confirmed the impact of peers' on investment decisions of firms'. Like Scharfstein and Stein (1990) proposed a model which entails that decisions relating to the investment which are based on the correlation among signals are taken by high quality manager and investment decisions on the basis of independent information are taken by poor quality manager. Thus, managers prove themselves as highly quality investment manager often by mimicking the others' investment choices.

Furthermore, Fracassi, (2016) holds that firms' who are socially connected make similar investment decisions. In the similar vein Chen, Goldstein and Jiang (2007) hold the same version relating to investment decisions according to them prices in the financial markets pass on information on which to base managerial investment decisions. Likewise Bakke and Whited (2010) too confirmed that peers'

information concerning stock prices guides firms' investment decisions. Additionally, Patnam (2011) discovered that firm policy decisions pertaining to executive compensation, R & D and investment are affected by those of their peer firms'.

Moreover, Foucault and Fresard (2014) evidenced that firms' investment decisions are significantly influenced by peers' assessment. They recommended that firms' investment policy rely heavily on peer firms' stock prices. This permits them to spot growth opportunities by defeating information imperfections which thus enables them to make optimal investment decision. More recently, Chen and Ma, (2017) asserted that failure of risky yet profitable investment and mitigation of competitive pressure can be compelling reasons to mimic the investment behavior of peer firms. Therefore, in the light of these arguments we thus hypothesize that:

$H_3$  : There is impact of peers' on firms' investment policy.

Numerous aforementioned studies highlighted the impact of peers' on corporate financial decision making. The studies highlighted the different motives underlying mimicking behavior of firms' relating to financial decision making. For instance, Bikhchandani, Hirshleifer, and Welch (1992) stressed that perception concerning others' have superior information led firms' follow their actions and decisions. Moreover, Milliken (1987) emphasized that uncertainty as well ambiguity cause corporate managers' to mimic others'.

Similarly, Lieberman and Asaba, (2006) heightened imperfect information and uncertainty as the most convincing motives of firms' to engage in mimicking behavior. Besides, Baum and Haveman (1997) as well Gimeno and Chen (1998) added another motive that firms' mimic others to reduce competitive pressure which was also supported by Peress, (2010). However, it has not been explored that is there any financial motive which causes firms' to mimic others'. In other words, do firms who mimic peers' financial decisions also want to capture same financial performance? However, discussion regarding either firms' who mimic financial policies also carries same financial performance or not is underprovided. Hence, keeping in view this important (yet ignored) aspect of mimicking behavior we may hypothesize that:

$H_4$  : Mimicking corporate financial policies also captures same financial performance.

## 2.4 Macro-economic Factors and Financial Policies

Numerous past studies confirmed vital role of macro-economic factors in determining firms' capital structure, dividend policy as well as investment policy (Bas, Muradoglu & Phylaktis, 2009; Bokpin, 2009; Bolton, Chen & Wang, 2013; Chen et al., 2005; Eldomiaty & Tarek, 2007). Among several macro-economic factors, two key indicators which have been chosen are: Interest rate and Stock market performance.

### 2.4.1 Interest Rate

In recent times, researchers' attempted on their part to explore the relation between and impact of external factors on corporate financial policy decisions. A general consensus developed by researchers' in this regard stressed that internal as well external factors impacts corporate financing decision. Recently, researchers' empirically confirmed that interest rates affects financial decisions of the firms (Bas, Muradoglu & Phylaktis, 2009; Chen et al., 2005; Eldomiaty & Tarek, 2007). A sudden rise or fall in the interest rate impacts firms' financial decision making relating to capital structure, dividend policy as well as investment policy.

More specifically, empirical studies confirmed the significant connection between macroeconomic factors' and corporate capital structure (Bokpin, 2009; Dincergok & Yalciner, 2011; Gujarel, 2006; Mokhova & Zinecker, 2014). Particularly, interest rate fluctuations affect corporate leverage decisions. For instance, various researchers' found negative relation between leverage and interest rate (Drobetz, Pensa & Wanzenried, 2007; Graham & Harvey, 2001; Henderson, Jegadeesh & Weisbach, 2006). On contrary, Bokpin (2009) found positive connection between them. These studies confirmed a significant positive as well as negative relation between firms' leverage policy and interest rates. On one hand, this advocates that

firms' even in the periods of high interest rate rely on debt financing, contrary to this it has been also confirmed that when interest rate becomes high firms' may not like to rely on long-term debt.

Furthermore, firms may increase their financial leverage to get advantage from tax shield protection or at the same time may decide to reduce level of financial leverage in times of high interest rates to lessen bankruptcy cost (Brealy & Myers, 2002; Myers, 1984). Hence mixed evidences compel us to conclude that trends in the interest rates determine borrowing decisions of the firms. Normally, firms' tends to borrow funds in the periods of lower interest rates. However, in Pakistan the main source of debt financing is commercial banks so depending on the need and urgency requirements firms may apt to borrow even at higher interest rates.

Likewise corporate capital structure it has been evidenced that macroeconomic factors strongly influence corporate dividend policy (Gertler & Hubbard, 1993; Hackbart, Miao & Morellec, 2006). Gertler and Hubbard, (1993) empirically tested and confirmed that firms' in times of high interest rates (recession) distribute fewer dividends as compared to lower interest rate times (boom). Literature revealed both positive as negative impact of interest rates on dividend policy. The proponents of the positive relationship (Ofori-Sasu et al., 2017) argues that the rise in interest rate calls attention of the shareholders' to demand more returns as shareholders' assume more risk. And they demand more dividend yield in order to mitigate the rising effect of interest rate. The justification concerning negative impact of interest rate on dividend policy (Rahman & Rashid, 2009) entails that fulfilling their financial needs through debt financing will increase financial cost (Adelegan, 2003) so they prefer to plough back their profit rather than dividend declaration.

Regarding investment policy, more recently Bolton, Chen and Wang, (2013) argued that macroeconomic factors too impacts investment policies of the firms. Neo-classical theorists' (Jorgenson, 1963) argued that decrease in interest rates increases investment. In addition to this, several research studies explored and confirmed inverse relation between interest rate and investment (Hyder & Ahmed, 2003; Larsen, 2004; Wang & Yu, 2007). More recently, Tokuoka (2012) too found

evidence that increase in interest rate decreased corporate investments'. The results of these studies disclosed interest rate as an important determinant of investment. It may be right to say that firms' investment decisions are affected by fluctuation in the interest rates. When interest rates are high firms' to make investment would not prefer to borrow money from banks. Contrarily, lower interest rate makes it easier for the firms' to borrow money from investment perspective.

Researchers' also reported positive correlation between interest rate and investment (Lanyi & Saracoglu, 1983). And more positive correlation in times of high interest rate volatility (Beccarini, 2007). In the similar vein, Chetty (2007) argued and suggested that low interest rate also lowers expected future growth rate related to the investment, hence firms' reduce investment in times of lower interest rate and increase investment in times of higher interest rate. Hence, mixed results have been reported regarding the relation between and impact of interest rate on three above mentioned financial policies. In short, interest rate is an important determinant of these financial policy decisions as it has significant impact as well as connection with mentioned financial policies.

### **2.4.2 Stock Market**

Another macro-economic variable that affects the financial policies of a firm is stock market. Market timing theory has completely discussed when and why the pattern of financial policies adjusts according to the market situation. The boom or recession of stock market affect capital structure, dividend policy and investment decision. Numerous past empirical studies revealed that amendments in the financial policies are mainly because of volatility in stock markets (Akerlof & Shiller, 2009; Ang et al., 2006; Bekaert & Wu, 2000; Kim, Morley & Nelson, 2004; Stock & Watson, 2003; Wu, 2001; Zhang, 2006). The theoretical justification is that keeping in view market timing theory firms' determine an optimal capital structure. Their decision relating to dividend declaration as well payment moreover decisions concerning investment are highly influenced by performance of stock market.

Stock market role is significant in meeting corporate financing requirements. In countries where financial markets are developed they can serve two purposes, it not only reduces the financing cost but also gives firms' access to borrow funds. In addition to this, it improves the quality of available information, enhances firms' monitoring and controlling which helps in lowering risk at the same time makes it easier for them in raising funds (Rehman, 2016). In the similar context, Demirguc-Kunt and Maksimovic (1996) found positive relation between stock market development and corporate leverage depicting stock market development led to increase firm leverage level. On the other hand, Sett and Sarkhel (2010) talked about negative connection between them.

Additionally, Baker and Wurgler (2002) highlighted the significance of market timing in relation with corporate leverage decisions. According to them, firms' considers it best to issue equity in peak market timing as during that time cost of equity is low. Moreover, firms' considers it best to issue equity when investors' enthusiasm to buy equity is high and lastly when market valuation of the firms' equity is high. In their investigation comprising almost 69 years (1928-1997) they observed that when overall value of stock market is high, the proportion of new equity issuance is higher (Baker & Wurgler, 2000).

Concerning dividend policy, different dividend behavior exhibition has been noticed in different developed as well in emerging markets. Difference in behavior may be due to the contextual differences like efficiency and management of financial markets. Dividend irrelevancy theory of Miller and Modigliani (1961), based on rational stockholders and perfect and efficient market with no transactional cost and tax.

Proponent of wealth maximization of shareholders' examined and found it as a primary function of firms (Brealey & Myers, 1996; Block & Hirt, 2000). In this line, Block and Hirt (1994) argued that manager only can act in a way to achieve this target rather by direct influence. The work of Woods and Randall (1989) revealed that shareholders' wealth is measured as aggregate market value (dividend and capital gain) of common stock. Dividend can be used to pass the quality signals (Miller & Rock, 1985; Asquith & Mullins, 1986). The signaling theory supports

that dividend payment permit signal about firm earnings. Firms even pay dividend when they have opportunities to invest in positive net present value projects (Baker et al., 1985; Pruitt & Gitman, 1991). All these signals pass through the facilitation of stock markets.

Relating to investment policies, financial markets' development (banking sector and stock market) facilitate firms' investment by accessibility of firms to get external finance (Love, 2003). Well-developed capital market not only helps the firms to meet their financial need through equity capital but also through debt financing. Moreover, well-developed stock market offers liquidity in the trade of stock, diversification to reduce risk of investors, gaining information about overall market, mobilization of resources for corporate investment and economic growth ultimately. Easy and comparatively less costly funds for the firms through equity stock can get from more active and liquid stock markets. In this connection, Grossman (1976) as well Grossman and Stiglitz (1980) highlighted the availability of basic and essential information by the stock market helped the creditors in making less risky investment. Moreover, monitoring costs for both creditors and investors reduce equally as Demirguc-Kunt and Maksimovic (1996) found that free of cost acquisition of information about listed firms for investors is great incentive. As the stock market grow in size, information regarding more liquid stock become easy, this ease external monitoring of firms Demirguc-Kunt and Maksimovic (1999). The vital role of financial market in the mobilization of resources helps economy to grow (Alile, 1984).

The extant literature highlighted that developed economies mobilized resources through two channels-money and capital markets (Samuel, 1996; Demirguc-Kunt & Levine, 1996). Positive relationship reported between economic growth and financial stock market (Levine, 1991). Direct investment in companies creates hindrance at the time of withdrawal so investors prefer to invest indirectly. Furthermore, Demirguc-Kunt and Maksimovic (1999) as well Rajan and Zingales (1998) showed that industrial growth fairly base on financial markets. Dependency of firms' financial decisions related to the performance of financial markets mentioned by the works of (Agarwal & Mohtadi, 2004; Abor & Biekpe, 2006).

## 2.5 Moderating Role of Ownership Concentration in Peer Group Effect-Financial Policies relationship

### 2.5.1 Ownership Concentration

The literature on corporate governance entails that one of the powerful governance mechanism is ownership concentration. In this context, Shleifer and Vishny (1997) marked ownership concentration as an imperative tool for understanding corporate governance structure. It is so as it helps in determining the nature of agency problem by indicating either prevailed problem (conflict) exists between majority shareholders' and minority shareholders' or it exists between shareholders' and management. Ownership concentration can be referred to as the distribution of firm's ownership in the hands of concentrated investors. It consists of both controlling shareholders with all controlling rights and commands over the business as well as minority shareholders (Heugens & Essen, 2008).

There are diverse viewpoints concerning the importance of ownership structure/-concentration. In this vein, Miller, et al., (2007) holds principal-agent theory perspective which suggests that high ownership concentration gives opportunity to controlling shareholders' to exercise power to spot activities which helps in gaining personal profit even at the expense of minority shareholders rights. This distribution of power and control allows controlling shareholders' to exploit firms' resources for their personal gains, whereas, minority shareholders' and other stakeholders bear the costs (La Porta et al., 2000).

Likewise, Claessens, Djankov and Lang, (2000) concluded that highly concentrated ownership threatens minority shareholders' rights. This may challenge non executive directors' abilities which may act as "rubber stamp" (Haniffa & Cooke, 2002). Conversely, Anderson and Reeb (2003) found that firms with concentrated ownership performed better than firms with dispersed ownership. Moreover, Omran, Bolbol, and Fatheldin, (2008) too emphasized that firms with concentrated ownership performed differently from dispersed ownership firms.

In emerging countries, ownership is highly concentrated who holds maximum shares and holds all controlling rights to manage affairs of businesses (Senaratne & Gunaratne, 2007). In such countries, managers' behavior depends on ownership structures of the firms relating to the extent to which they have discretion to take financial decisions. This characteristic of ownership structure becomes more influential when the legal rights of minority shareholders are not guaranteed. Thus controlling shareholders' can directly impact the tendency of the managers' to manage earnings or indirectly by lowering levels of free cash flows.

### 2.5.1.1 Categories of Ownership

#### *Managerial Ownership*

It can be defined as percentage of shared ownership of executive as well as non-executive directors (Short & Keasey, 1999). Keeping in view that non-executive directors are part of management body but are not involved in firms' day-to-day managerial activities. When shares of the firm are held by managers of that firm is said to be managerial ownership. Managerial ownership is the amount of the total shares held by insiders (officers & directors) or block holders (Holderness, 2003: 75-100).

When ownership and control are separate can boost agency problems. Whereas, 100 percent managerial ownership guarantees firm value reach at its fullest (Ruan, Tian & Ma, 2009) as interests are perfectly aligned and this helps in enhancing efficiency as well as profitability. Whereas, as evidenced by researchers' managerial inefficiency, fraud, politics as well as incentives to acquire personal benefits etc are related to managerial ownership (Boycko, Shleifer & Vishny, 1996; Hirshleifer & Thakor, 1998).

#### *State Ownership*

The level of involvement of state (federal, provisional or local) in the business determines state ownership. These firms' can be privatized consisting of shareholders' (majority or minority) from the government.

In emerging countries, mainly for political reasons state invests heavily in listed firms (not fully privatized) and this form of ownership is most influential factor affecting firms' decisions (Laidroo, 2009). Firms with state ownership have their own profit making or not for profit making objectives/goals and least concerned with shareholders' interest fulfillment (Eng & Mak, 2003). This divergence of interests may cause agency problems and costs. Firms with state ownership on one hand can take advantage in raising external funds at preferred rate from local providers and on other hand political interference relating to appointment of corporate directors and managers makes monitoring and control less effective (Elghuweel, 2015).

#### *Institutional Ownership*

Institutional investors are specialized financial institutions who collectively manage savings of other investors' at acceptable risk and return as well as maturity of claims (Davis & Steil, 2001). These are investment cooperation's who adopt a professional approach and manage in reducing transaction costs among investors' (Bjuggren et al., 2007).

Prior studies evidenced that institutional investors monitoring capability compels managerial focus to increase performance of firm rather than being opportunistic are adopting self serving approach (Del Guercio & Hawkins, 1999; Nesbitt, 1994). Healy, (2003) further confirmed greater monitoring by them. Apart from this, institutional ownership often calls incentive conflict between institutional portfolios and managerial portfolios. For instance, management might pursue and serve their own interests which can be a cost to portfolio investors. Despite this they are considered as well regarded as effective monitors and expected to improve organizational efficiency and performance (Dana, 2015).

#### *Foreign Ownership*

When foreign investors own 25% of the shares of the company can be referred to as foreign ownership (Wilkinson, 2013). It also includes an investor from a country who gets long-term ownership in any other country with voting rights as well shares (Contessi & Weinburger, 2013). Foreign owners' target to generate profitability in

countries where there is favorable repatriation rules relating to profitability, and by selling domestic (local) products worldwide can consequently increase output as well as employment in a country.

In a survey carried out by Djankov and Murrell (2002) maximum studies reported in general that foreign ownership effectively works in transition economies relating to restructuring and/or improving productivity of enterprise.

#### *Employee Ownership*

When employees of the company fully own company's ownership directly or indirectly can be said to have employee ownership. This consists of "trust owned businesses" - where trust(s) owns shares of an employee, "co-owned businesses" - employees' ownership with minority stake in the business, "worker cooperatives" - which is a legal entity considering splitting of voting rights as well shares, "employee financial participation" - where employees share profits (Postlethwaite et al., 2005:3-4).

Opponents of employee ownership (Alchian & Demsetz, 1972; Blair, Kruse & Blasi, 2000; Sesil, Kruse & Blasi, 2003) squabbled that employee ownership by provision of incentives can make employees do hard work as well smart work. Moreover by doing so it seeks cooperation from them. Contrarily, proponents advocate that employee ownership can align employees' interests by offering them higher stock price as well as dividends consequently employees voluntarily work harder and smarter (Ellwood et al., 2000).

#### *Family Ownership*

Various researchers defined family ownership in different ways. Family businesses are either owned entirely or majority by a single person or by members' of a given family (James, 1991). When family or founder of the business owns at least 5% of the shares can be said to as family ownership. When initial strings of people of second generation also gets involve in the business it becomes family firm. Basically, the main characteristic of family business is that it is managed as well as controlled by members and generations of family (Kraiczy, 2013: 7).

As reported family firms have long-term orientation thus care about future (Kachaner, Stalk & Bloch, 2012) thus they strive hard for long-term survival and growth. Thus are in position to stabilize their income as well revenues (Lee, 2006). However, their change averse policy restricts growth opportunities (Daily & Dollinger, 1992). Moreover, nepotism and conflicts are major drawbacks of family businesses (Mitchell, Morse & Sharma, 2003).

#### *Dispersed Ownership*

When all shareholders' own less than 5% of the shares without having voting rights and control in the company's affairs, then ownership would be dispersed (Leech & Leahy, 1991). In companies with dispersed ownership owners' wishes to manage profits just to increase short term value (Goldberg, Danko & Kessler, 2016). It can be defined as 100 percent small shareholders' owns the share of the company; their voting shares are about 5 percent or below in the whole company.

As it has been argued that dispersed ownership increases agency problems because of information asymmetry as well as uncertainty ultimately increases agency cost (Jensen & Meckling, 1976). Furthermore, small shareholders' (dispersed ownership) fail to spot contractual mechanism to align managerial interests with shareholders (Laeven & Levine, 2007) which gives boost to agency problems between small shareholders and management team. As management exerts power in taking those decisions which helps them in attaining private gains (Laeven & Levine, 2007).

#### *Concentrated Ownership*

As already discussed ownership concentration means large number of shares are being owned by few shareholders (Senaratne & Gunaratne, 2007). It has been previously argued that those large few shareholders' contributes to increase performance by exercising effective monitoring and controlling (Zheka, 2005). However, researchers' evidenced ownership concentration has certain costs as large few owners' bear excessive risk due to decreased diversification (Demsetz & Lehn, 1985). Moreover, excessive monitoring of managers' decrease managerial morale to take initiative relating to take firm specific investment decisions (Demsetz, 1997).

In general every category of ownership has pros and cons. On one hand when it serves the purpose on the other hand it bears cost as well. However, literature on ownership structures of the firm indicates that both in developed as well in emerging countries there is spread of high ownership concentration (La porta et al., 1999; Sheifler & Vishny, 1997). Particularly talking about Pakistan ownership of firms is concentrated (Chemma, Bari & Saddique, 2003). So, current study focuses on concentrated form of ownership.

### 2.5.1.2 Ownership Concentration Theories

#### *Agency Theory*

The corporate governance issues are theoretically well elaborated in agency theory perspective. It entails that separate ownership and management calls agency problems. Large sized firms hire managers' to act on their shareholders' behalf to run and manage business. Shareholders' intention of their wealth maximization compels them to give powers to their managers' which may be disadvantageous. For instance, managers' strive best to gain their personal benefits instead of maximizing shareholders' wealth. Thus, arise agency problems. In order to resolve these agency problems almost all companies around the world bear agency cost, which is the bonding cost incurred to resolve agency problems inclusive of owners' monitoring cost (Jensen & Meckling, 1976). In addition to this, agency cost may lead to increase when there would be insignificant monitoring by firms'. As per Goergen and Renneboog, (2001) insufficient monitoring mechanism incurs agency costs.

Agency problems are of two types: first managers versus shareholders' and second majority versus minority shareholders'. As already discussed first type of agency problem can be because of the reason that managers' did something what shareholder' did not want or vice versa (Fama & Jensen, 1983). In this case shareholders' concerns regarding something were totally neglected by managers'. What could give benefit to the shareholders' was not adopted hence it led to the opportunity cost of shareholders' wealth. Whilst, the second type of agency problem focuses on the issues/conflicts between majority and minority shareholders'. As

dominant shareholders' holds more power and enjoys better incentive to protect their wealth which leads them to have better corporate monitoring and control as compared to minor shareholders' (Bozec & Bozec, 2007). Minority shareholders' even if succeed in getting support from other shareholders to control voting system still be less effective as the process is much complicated (Shleifer & Vishny, 1986). Ownership concentration is much important in reducing the cost associated with separate shareholders' and managers' which can give firms' property right protection (Barbosa & Louri, 2002). In the same line, Omran (2009) voiced that ownership concentration an important component of corporate governance can act as agency which can compel, encourage and ensure that management's decisions would likely to increase shareholders' wealth and value of business. In doing so ultimately reduces agency problem in this perspective and consequently reduces agency cost.

#### *Stewardship Theory*

Recent decades witnessed that the two contrasting approaches which highly affected the strategic management and business policy of many business organizations are corporate boards' structure like agency theory and stewardship theory. Contrarily to agency theory, stewardship theory as a model of governance had its roots in sociology as well psychology. Basically, there are two psychological mechanisms which help in developing stewardship behaviors (Hernandez, 2012). First is individuals themselves value that behavior which in the long run benefits others and behave in the way to satisfy needs of others. Secondly, affective sense of connection with others compels individuals to engage in such behaviors that are in long run beneficial for the welfare of others.

Unlike agency theory, stewardship theory endorses principal-steward relation. In, stewardship theory perspective directors and managers' act as stewards with principals (shareholders) and have interests aligned with one another. Furthermore, assume that principals' satisfaction bounce back greater organizational success (Christopher, 2010). Here stewards focus more on collective goals instead of individual goals. They believe that alignment of their interests with their principals' enables them to attain organizational objectives and by doing so their personal

needs will also be met (Davis, Schoorman & Donaldson, 1997). Hence, the associated transaction cost in a principal-steward relation lowers overtime (Van Slyke, 2006). In the initial stage, it's high but as soon as the principal and steward understand the motives, signals as well as actions of each other, the cost start to decline.

As per Donaldson and Davis (1991), the effectiveness of a steward's actions depends upon structural situation where in the executive is situated. Thus one can conclude that if steward's motivation suits the model of man-principal (lie beneath stewardship theory) as well as governance structures and mechanisms which authorize the steward appropriateness it would maximize stewards' benefits (Davis, Schoorman & Donaldson, 1997). Hence, ownership structure is much important, as it may enhance principal-steward relationship.

#### *Resource Dependence Theory*

Resource dependence theory provides another perspective relating to corporate governance (ownership concentration) of firms'. This theory was developed in 1978 by Pfeffer and Salancik, who stressed on the external actors' such as government and/or local community which can influence on behavior of the firms (Hillman, Withers & Collins, 2009). This theory has drawn attention towards an important connection that exists between corporate governance and external actors. Keeping in view the connection, firms' needs to respond to external actors demands that have enough resources on which firms depend to operate (Pfeffer & Salancik, 1978). It has been suggested by Barney (1991) that firms resources needs to be rare, valuable as well as inimitable, hence it is difficult to get same substitutes for needed resources. This compels corporate directors to make or adopt such strategies which ensure to control critical resources for firms' survival and growth (Mathews, 2003).

In this perspective, resource dependence theory suggests firms' to adopt the strategy to disclose transparent information regarding corporate governance practices to achieve their own objectives and goals (Branco & Rodrigues, 2006). By doing so, firms can enjoy high competitive advantage (Pfeffer & Salancik, 1978). This may help firms' in building ties with the community by developing reputational capital which advances corporate image thus results in reduction in cost of capital

(Linsley & Shrides, 2006). Furthermore, provision of information may help firms' in generating commitment and involvement in external actors' which in return extend their services relating to provision of resources which increases value of the firm (Ntim, Opong & Danblt, 2012b).

If firms' provides additional information relating to remuneration & nomination committees, firms' board composition it can mitigate external actors' concerns about fair wages, working conditions and ability of directors in making appropriate strategies (Branco & Rodrigues, 2006; Castanias & Helfat, 2001). In summary, compliance and disclosure strategy of owners' can help firms in controlling external actors and obtaining desired resources. On the other hand, failure in providing adequate information may restrict firms' in securing needed resources. Hence, ownership either highly concentrated or low concentrated needs to take all this into account.

### **2.5.1.3 Determinants of Ownership Concentration**

Measures/determinants of ownership concentration ranges from using simple proxies to advanced powerful measures based on game theory (Overland, Mavruk & Sjogren, 2012). In this regard, Berle and Means (1932) holds that shareholders' who holds at least 20 percent of the shares are controlling shareholders'. But no distinction has been made between who owns shares below or above the given threshold. Most corporate governance research studies utilized cut-offs at the levels of 5-20%. These thresholds revealed unclear economic intuition as studies surveyed and documented ambiguity associated with them (Cubbin & Leech, 1983; Larner, 1970; McEachern & Romeo, 1978).

Another way used in prior literature is simply considering largest owners' voting share (Thomsen & Pedersen, 2000) as a measure of ownership concentration. Despite its simplicity researchers' reported that this method also fails to take into account voting weights of other shareholders'. Moreover, as reported in previous studies in case of combined shareholdings of several large owners, any disagreement between them makes it problematic to measure ownership concentration (Demsetz & Villalonga, 2001; De Miguel et al., 2004).

Furthermore, in economic literature existent measures of ownership concentration are Herfindahl index and Gini coefficient (Gini, 1945; Herfindahl, 1950). Particularly, these measures provide reasonable way to include all shareholders in a single concentration measure. Because of certain drawbacks are not applied to analyze ownership concentration as they do not explain relative power of firms' individual shareholders'. For instance, if one shareholder holds more shares and other holds fewer shares it doesn't explain corresponding high power and/or less power respectively.

In the similar line, powerful indices have been developed by Shapley and Shubik (1954) and Banzhaf (1965) such as weighted voting games. For example, if a shareholder own more than 50 percent of voting rights, he/she simply wins majority votes. But larger voting rights would not make much difference from control perspective. As reported by Leech, (2002) shareholders' with less voting rights even though exercised effective monitoring and control of firm. These two above mentioned indices are developed in a game theory perspective where shareholders considered as players, measuring the probability of individual players versus others players' (shareholders') regarding their voting share in decision making.

For the current study, the measurement of ownership concentration has been calculated using firms' top five shareholders'. Furthermore, no distinction has been made between different categories of shareholders. Similarly, no cut-off level has been used to include shareholders' in top five list. Neither the study has utilized any other criteria to exclude them from top five categories. The underlying logic of using top five shareholders' is that larger holding of shares gives them right to monitor and control managerial affairs. In addition to this, they are eligible enough to exercise essential power of them in influencing financial policies of the firms.

### **2.5.2 Peer Effect and Ownership Concentration**

Peer effect is more likely to exist in businesses where there is concentrated ownership. As in concentrated owned businesses, the large shareholders' holds main

positions so they controls and manages business affairs. There can be numerous reasons for mimicking behavior of concentrated owned businesses:

First in reality, large concentrated shareholder's economic stakes in the business compels them to ensure prosperity of the business. Hence they attempt to pursue a strategy which guarantees lifelong survival (Anderson, Mansi & Reeb, 2003). Thus this lifelong concern for business causes them to mimic successful behaviors' of their profitable peers (Haunschild & Miner, 1997; Haveman, 1993).

Second, the influence of large shareholders' on appointments can be another reason for mimicking behavior. As reported by Gomez-Mejia, Nunez-Nickel and Gutierrez, (2001) that managerial and other key positions are filled on the basis of kinships and/or friendships instead of considering merit which causes competitive disadvantage. When important positions are not filled with specialized people with specific desired knowledge the firms' value as well as performance may deteriorate. Therefore, to ensure long term survival and growth of business they need to look for behaviors' and decisions of their successful peers.

Third reason quoted by Rashid and Nadeem (2014) can be that dispersed ownership may have diverse objectives and interests leading them to take different financial decisions. When control is in many hands it can lead towards conflict of interests as different people can have opposing/different perspectives concerning priorities as well as goals. Whereas, control in few hands make sure common goals as well interests thus decisions to imitate who or not may lead towards one direction.

### **2.5.3 Ownership Concentration and Financial Policies**

Since last two decades, the influence of concentrated ownership on corporate financial policies remained the controversial topic. On one hand, authors' support positive impact of concentrated ownership on corporate performance (Casson, 1999; McConaughy, Matthews, & Fialko, 2001; Villalonga & Amit, 2006) and on other hand it was considered detrimental (DeAngelo & DeAngelo, 2000; Faccio, Lang, & Young, 2001; Shleifer & Vishny, 1997). In this context, Demsetz and Lehn (1985)

asserted that concentrated owners have certain economic interests thus they closely monitor managers consequently reduces agency problems that helps in maximizing firms' value. Therefore, they themselves pay attention towards setting optimal financial policies which in turn enhances firms' value.

In literature, there have been documented conflicting results relating to impact of ownership concentration on capital structure. In this regard, some researchers stressed that reputation as well as long run concentrated ownership presence permits them to enjoy lower cost associated with debt as compared to other firms (Anderson, Mansi & Reeb, 2003). However, their long-term stay in the business encourages equity financing to operate the business. Thus their reliance on equity financing mitigates the cost of debt. In the similar vein, Jensen and Meckling (1976) squabbled that the shareholders' of highly concentrated ownership firms' favor less debt as debt carries more monitoring.

On contrary, Cespedes, Gonzalez and Molina, (2010) showed that higher ownership concentration leads to acquire higher debt proportions thus documented a positive connection between them. However, if issuing equity means losing control, firms prefer debt on equity as shareholders' entrenchment motives compels them to increase leverage beyond optimal point just to inflate their voting power (Harris & Raviv, 1988). In this context, the relation between high ownership concentration and leverage is positive. It means the higher the ownership concentration, the greater probability of shareholders' to issue debt rather than equity, when fund is needed. While, Driffield, Mahambare and Pal, (2007) confirmed negative relation between ownership concentration and capital structure. This can be because of contextual or any other reason.

Regarding dividend policy, the extant literature on corporate theories supports the connection between ownership structure and dividend (Jensen, 1986) which squabble that dividend could serve to give indirect benefits of control to shareholders' where active monitoring by them is weak or missing (Rozef, 1982). As per agency models dividend payments can help in lessening agency problems between managers' and shareholders'. As it would reduce cash flow available to non-owner managers' who can use their discretionary powers to over invest in projects which

may give personal benefits to them (Jensen, 1986). Conversely, majority shareholders' may use their power to extract their own benefits by damaging minority benefits thus could restrict dividend payments causing agency problems (Faccio & Lang, 2001).

However, Mehar (2005) confirmed significant impact of ownership concentration on dividend payment. These findings were further supported and confirmed by Ahmed and Attiya (2009) who found positive association between dividend payout ratio and ownership concentration. In ownership concentrated firms, the major portion of shares are in the hands of few shareholders' which boosts them to give dividend. In addition to this, in Pakistan Ullah et al., (2012) conducted the research to explore same and confirmed negative association between managerial ownership and dividend payments and positive connection between dividend payments and foreign as well institutional ownerships. It means the type of ownership also matters a lot while deciding about dividend policy.

Moreover concerning investment policy, separate ownership and control allows investment decisions of managers to be targeted as to maximize their own benefits instead of maximization of ownership wealth or value (Aggarwal & Samwick, 2006). For example, managerial overinvestment may be targeted to expand company size which in return increases their personal benefits (Hart & Moore, 1995). On contrary, when ownership concentration is high, shareholders' having strong legal protection can serve as effective governance tool to evade decisions pertaining to poor investment (La Porta et al., 1998).

Additionally, concentrated ownership usually focus on long time horizons thus have long-term investment perspective to harvest long-term profits, this helps them in lessening managerial myopia (Stein, 1988; 1989). So, they prefer to postpone short-term earnings. Furthermore, it has been also argued that firms with concentrated ownership actually desires to transcend and pass the business to successive generations, so they invest more efficiently as compared to dispersed owned businesses (Chami, 1999; James, 1999).

### 2.5.4 The Moderating Role of Ownership Concentration

The main objective of this study is to investigate the relations between peer effect and corporate financial policies specifically capital structure, dividend and investment policies. However, these key relations can be influenced by moderating variables so incorporating them is very important. The contradictory results concerning ownership concentration points out the need to explore indirect effects (Kallamu, 2016). This could help in providing the reason relating to inconsistency in findings. The indirect impact of ownership concentration on proposed relationships needs to be explored.

In this concern, Chrisman, Steier and Chua (2008) too confirmed the moderating role of ownership concentration. As concentrated ownership can impact the relation between peer firms' and financial policies (capital structure, dividend and investment policies). Besides this Pearson, Carr and Shaw (2008) noticed that firms with high ownership concentration have greater social ties, close interactions as well as greater information sharing. Thus they may be more inclined to pursue same strategies of those of their successful peers to grow their business.

Furthermore, according to Claessens, Djankov and Lang, (2000), in emerging markets, about two-third of the listed firms are controlled by highly concentrated ownership (single entity). It means significant proportion of highly concentrated ownership wealth is tied with this single investment. Consequently, they are incapable relating to their risk diversification (Maug, 1998). Accordingly non-diversification of risk most likely to reduce wellbeing and wealth of these controlling shareholders' (Crutchley & Hansen, 1989). As a result, they try to adopt such policies and actions which can help in minimizing their non-diversifiable risk (Amihud & Lev, 1981). In this regard, one method by means of which this risk (non-diversifiable) can be reduced is by adopting same financial policy decisions taken by their successful rivals. Hence, ownership concentration can moderate the relationship.

The emerging nation Pakistan is highly attributed with concentrated ownership structures where few strong shareholders' controls and manage business affairs (Ibrahim, 2005). Various studies explored different connections relating ownership

concentration (Ahmad & Attiya, 2009; Ayub, 2005; Din & Javid, 2011; Irshad et al., 2015; Javid & Iqbal, 2008; Mirza & Afza, 2010 etc). However, the moderating role of concentrated ownership is not tested. Thus on the basis of arguments stated above this study assumes to have moderating role of ownership concentration in relation between peer effect and corporate financial policies namely capital structure, dividend policy and investment policy. On the basis of studies and arguments mentioned in this study we may hypothesize the following relations:

$H_5$  : Ownership concentration moderates the relation between peer effect and capital structure of the firm.

$H_6$  : Ownership concentration moderates the relation between peer effect and dividend policy of the firm.

$H_7$  : Ownership concentration moderates the relation between peer effect and investment policy of the firm.

## 2.6 Hypotheses of the Study

$H_1$  : There is impact of peers' on firms' capital structure.

$H_2$  : There is impact of peers' on firms' dividend policy.

$H_3$  : There is impact of peers' on firms' investment policy.

$H_4$  : Mimicking corporate financial policies also captures same financial performance.

$H_5$  : Ownership concentration moderates the relation between peer effect and capital structure of the firm.

$H_6$  : Ownership concentration moderates the relation between peer effect and dividend policy of the firm.

$H_7$  : Ownership concentration moderates the relation between peer effect and investment policy of the firm.

# Chapter 3

## Data Description

### 3.1 Population and Sample of the study

The population of this study is non-financial sector of Pakistan. In this study the corporate accounting data relating to firms' capital structure, dividend as well as investment policies were taken from the published annual audited reports of the firms' for the period from 2005-2015. Karachi Stock Exchange website was a source of market data relating to stock price and market index of the period from 2005-2015. The supervisory guidelines concerning financial sector and government entities had compelled us to exclude them from the current study. Moreover, for maintaining consistency with previously conducted empirical studies the study utilized just non-financial sector. Additionally, the regulatory mechanism as well nature of work/functions of financial firms differs from non-financial firms which may require different treatment thus excluded from the study. However, during analysis to confirm uniformity the study needed non-missing data of each firm on yearly basis. There were 35 sectors including financial sector as defined by Pakistan Standard Industrial Classification (PSIC) Revised 4, 2010 code, represented in our sample.

The sample of this study comprised 28 sectors' (except financial sector which were 7) listed on Karachi Stock Exchange from the period of 2005-2015. The inclusion or exclusion of sectors' as well firms' was subject to the availability of relevant

data. Six sectors out of 28 were excluded from the analysis. The reason for exclusion of these sectors' was that Real Estate sector consist of only one firm, Wollen sector comprised only two firms, Tobacco sector comprised three firms, Jute and Transport sectors' comprised three and five firms' and it also lacked financial data. Moreover, Vanaspati and Allied sector was merged to Food and Personal Care products. So out of 28 sectors, 22 sectors were used for conducting data analysis.

Concerning sampling technique the study utilized non-probability sampling method to select sample. As this study analyzed the impact of peers' on corporate financial policies, so the sampling frame was narrowed to only non-financial industries. All firms were included using convenient sampling. Only those firms were excluded from analysis whose data were not available, who merged with other firms after 2005 or closed their businesses. Moreover, who started their businesses after 2005. Hence, total of 313 firms were considered for data analysis whose data were available from 2005-2015.

### 3.1.1 Population and Sample Characteristics

TABLE 3.1: Sector-wise Frequency Distribution

S/No.	Sectors	Numbers of Firms	Frequency Distribution (%)
1	AUTOMOBILE ASSEMBLER	12	3.83
2	AUTOMOBILE PARTS & ACCESSORIES	7	2.24
3	CABLE & ELECTRICAL GOODS	6	1.92
4	CEMENT	19	6.07
5	CHEMICAL	24	7.67
6	ENGINEERING	8	2.56
7	FERTILIZER	4	1.28
8	FOOD & PERSONAL CARE PRODUCTS	15	4.79
9	GLASS & CERAMICS	8	2.56
10	LEATHER & TANNERIES	5	1.6
11	OIL & GAS EXPLORATION COMPANIES	4	1.28
12	OIL & GAS MARKETING COMPANIES	5	1.6
13	PAPER & BOARD	8	2.56
14	PHARMACEUTICALS	8	2.56
15	POWER GENERATION & DISTRIBUTION	11	3.51
16	REFINERY	4	1.28
17	SUGAR & ALLIED INDUSTRIES	24	7.67
18	SYNTHETIC & RAYON	10	3.19
19	TECHNOLOGY & COMMUNICATION	8	2.56
20	TEXTILE COMPOSITE	41	13.1
21	TEXTILE SPINNING	75	23.96
22	TEXTILE WEAVING	7	2.24

The detail relating to number of firms in each sector and frequency distribution has been given in table no. 3.1 shown above.

As discussed earlier, total of 22 non-financial sectors were considered for data analysis. The Automobile Assembler sector consists of 12 firms which constituted 3.83% from overall 100%. Automobile Parts and Accessories sector comprised 7 firms constituting 2.24% from 100%. The sector Cable and Electrical Goods consists of 6 firms contributed with a percentage of 1.92. The Cement sector includes 19 firms contributed 6.07% in overall 100%. Chemical Sector contains 24 firms contributed with a percentage of 7.67. The Engineering sector consists of 8 firms which constituted 2.56%. Fertilizer sector comprises 4 firms with contribution of 1.28%. The Food and Personal Care Products includes 15 firms which made 4.79% out of 100%. Glass and Ceramics sector contains 8 firms who constituted 2.56%. The Leather and Tanneries sector consists of 5 firms contributed a total of 1.60%.

The Oil and Gas Exploration sector includes 4 firms who made 1.28% contribution. Oil and Gas Marketing Sector contains 5 firms constituting 1.60%. The sector Paper and Board contains 8 firms contributing 2.56%. The Pharmaceuticals sector comprises 8 firms making a percentage of 2.56. Power Generation and Distribution consists of 11 firms constituted 3.51% out of 100%. The Refinery includes 4 firms contributing only 1.28%. Sugar and Allied Industries comprises 24 firms who made 7.67% contribution. The Synthetic and Rayon sector contains 10 firms making a contribution of 3.19%. Technology and Communication sector includes 8 firms thus made contribution of 2.56%. Textile Composite contains 41 firms made a total of 13.10% contribution, Textile Spinning consist 75 firms which made contribution of 23.96% and Textile Weaving sector includes 7 firms with the percentage of 2.24 contributions.

In addition to above discussion concerning number of firms in each sector, the pictorial elaboration relating to each sector comprising number of firms has been shown below via Pie Chart.

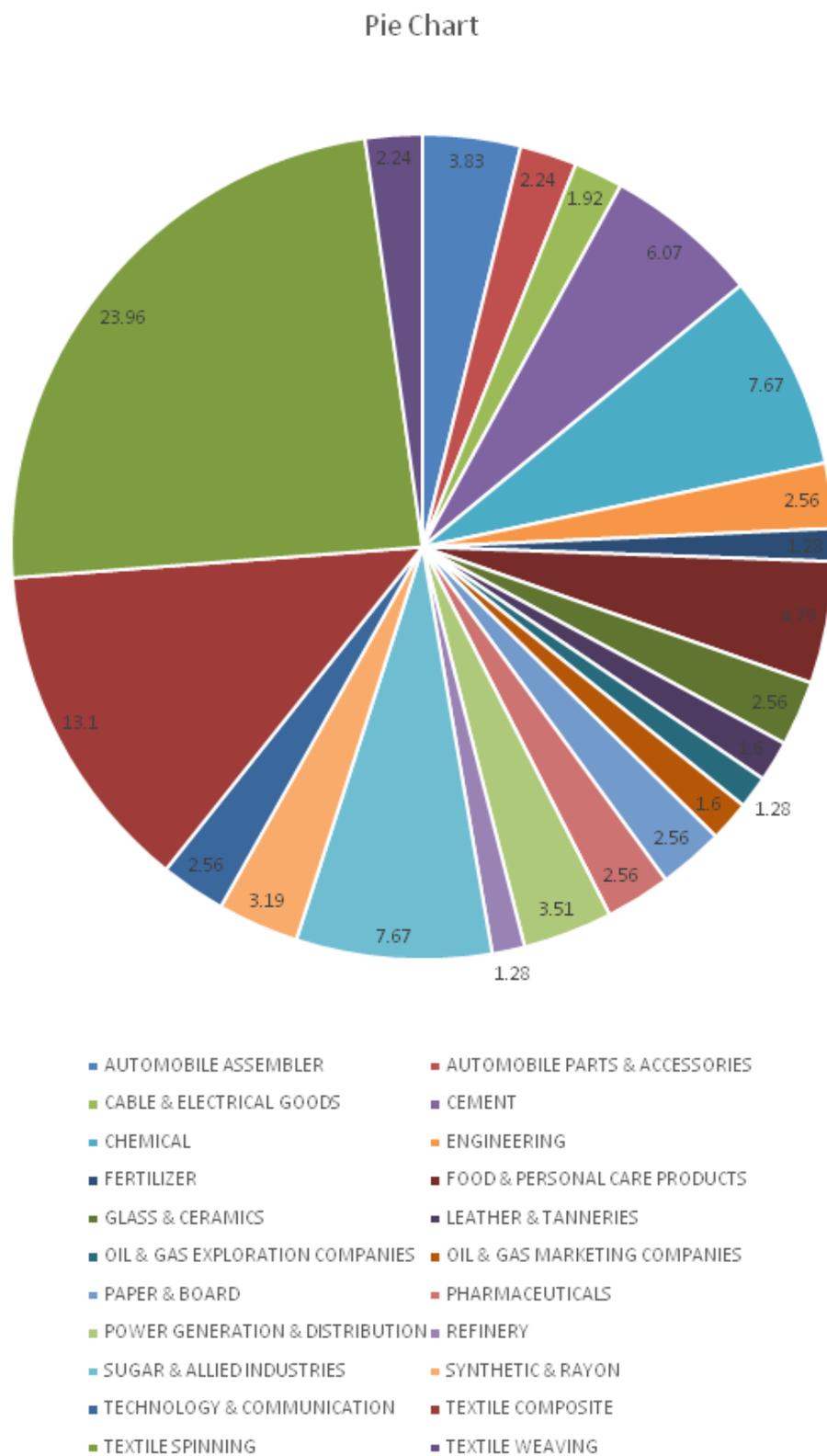


FIGURE 3.1: Population and sample characteristics(pie chart)

## 3.2 Econometric Model Selection

The current study examined the impact of peer firms' on corporate financial policies conducting regression analysis. For this, we have to make choice between pool regression as well as effect models. For effect models, we have to select fixed effect model or random effect model. For current study analysis, the appropriate regression model selection was made conducting the following two tests.

1. Redundant fixed effect-likelihood ratio
2. Hausman Test

### 3.2.1 Redundant fixed Effect-Likelihood ratio

Selection between pool regression and fixed effect model was made utilizing redundant fixed effect-likelihood ratio. We checked null hypothesis that fixed effects are redundant, in contrast to alternative hypothesis that fixed effects are not redundant. Rejection of null hypothesis that is fixed effects are redundant signaled us to proceed using fixed effect.

### 3.2.2 Hausman Test

In order to decide that either fixed effect or random effect was appropriate for current study, we conducted Hausman test to test below mentioned hypothesis:

$H_0$  : *Random effects are consistent and efficient.*

$H_1$  : *Fixed effects are consistence and efficient.*

Use of random effects model or fixed effect model completely depends upon the p-value. The significant p-value at 1% rejected null hypothesis thus fixed effect model was considered good for the analysis.

### 3.3 Treatment of Reverse Causality and Endogeneity

Financial policy (as dependent variable) of a firm was seen as an endogenous outcome of average of financial policy of an industry or the average of characteristics of peer firms. Since, change in financial policy of a firm also change average financial policy as well as average characteristics of peer firms. Moreover, there are numerous factors such as uncertainty, ambiguity, time pressure, competitive pressure, the regulatory framework etc in which the company operates that may affect the proposed relationship.

As far as the characteristics of our sample as well variables of interest are concerned, the independent variable was endogenous as actions and characteristics of the firm to determine peer effect was not exogenous having reverse causality or unobserved heterogeneity which may affect both peer effect (IV) and corporate financial policies (DV). Endogeneity needs to be addressed seriously or else biased as well inconsistent parameters estimates might be produced which can dangerously mislead hypotheses testing.

Numerous estimation techniques are available to capture endogeneity such as, maximum likelihood (ML), 2SLS/3SLS and generalized methods of moments (GMM). Other than GMM utilizing these estimation techniques to investigate peer effect on corporate financial policies has certain stumbling blocks. Econometricians now switched from maximum likelihood to generalized method of moments because ML violates regularity conditions as well time consuming consequently unattractive (Hall, 2005). Despite maximum likelihood usefulness, its application as well as implementation is not easy in rational expectations perspective (Tauchen, 1986).

In the presence of exogenous regressors 2SLS method is not consistent (Lee, 2007) moreover, utilizing 2SLS do not serve to test joint significance of all exogenous regressors (Kelejian & Prucha 1998). Despite this fact that 2SLS is computationally simpler still it is less satisfactory in some of its statistical properties. It can be used when simultaneous equations are to be used. Moreover, if one uses complete set of available instruments and error terms are homoskedastic even then 2SLS is

not asymptotically efficient. In such contexts, GMM is a convenient method to get asymptotically efficient estimators (Bond, 2002).

Additionally, issue of endogeneity can be well addressed using dynamic panel model as it allows utilizing internally generated instruments. The basic as well hidden benefit of this is that it is very important to confirm that instrumental variables should not be correlated with error term. In the similar vein, Roodman (2009) argued that instrumental variables can serve as valid instrument. Hence, it is decided to use dynamic panel model. Thus to set aside issue of dynamic panel bias (Baum, 2006; Bond, 2002), the current study preferred to use GMM to integrate the dynamics of adjustments. Various researchers' confirmed the usage of dynamic panel model for smaller time spans as compared to cross sections (Baum, 2006; Bond, 2002; Roodman, 2008). For this and above mentioned reasons, the current study utilized GMM estimation technique. As GMM allow researchers' to solve problems like serial correlation, heteroscedasticity as well as endogeneity (Leitao, 2010).

### 3.3.1 Generalized Method of Moments (GMM)

Generalized method of moments (GMM) is an instrumental variables procedure which provides computationally suitable method of getting consistent parameter estimates. This method has been used and applied in various areas of economics (Biddle 1984) as well as in finance (Brown & Gibbons 1985; Rotenberg 1984). In empirical finance it was first introduced by Hansen (1982) who presented its basic statistical theory. Later Hansen and Singleton (1982, 1983) specified its estimation through empirical analysis.

The estimation of GMM is based on moment conditions of population and offers the estimation of parameters on the basis of information inferred from supporting financial model. There are certain properties of GMM estimators that these should be consistent, asymptotically normal as well as efficient enough not utilizing any sort of additional information other than contained in the moment conditions.

## 3.4 Baseline Empirical Model for Corporate Financial Policies

### 3.4.1 Baseline Empirical Model Peer Effect on Leverage

The following model of capital structure (Leary & Roberts, 2014) was used to investigate the impact of peer firms on corporate capital structure as well as on other financial policies including dividend and investment policies.

$$\text{Leverage}_{ijt} = \beta_0 + \beta_1 \text{PLev}_{ijt} + \beta_2 \text{Lev}_{t-1} + \beta_3 \text{Firm Specific Factors}_{-ijt-1} + \beta_4 \text{Peer Firm Factors}_{-ijt-1} + \beta_5 \text{MR}_{-1} + \beta_6 \text{IR}_{-1} + \text{Year Fixed Effect}_t + \text{Industry Fixed Effect}_j + \text{Error Term} \quad (1)$$

The above mentioned model depicts baseline model of leverage which entails peer behavior as well as firm specific and industry specific characteristics. This model also captures the correlated effects by examining the effect of stock market and interest rate on leverage of the firm. The definitions of variables and subscripts of peer firm effect model on corporate capital structure has been entailed in table no. 3.2 given below.

#### 3.4.1.1 Corporate Leverage Model

$$\text{Leverage}_{ijt} = \beta_0 + \beta_1 \text{Book Leverage}_{t-1} + \beta_2 \text{Tangibility}_{t-1} + \beta_3 \text{Market to Book Value}_{t-1} + \beta_4 \text{Profitability}_{t-1} + \beta_5 \text{Firm Size}_{t-1} + \text{Year Fixed Effect}_t + \text{Industry Fixed Effect}_j + \text{Error Term} \quad (2)$$

The corporate leverage model explains the corporate characteristics which impacts the leverage policy of a firm. The definitions of variables and subscripts of corporate leverage model has been given in table no. 3.2 given below.

#### 3.4.1.2 Peer Leverage Model

$$\text{Leverage}_{ijt} = \beta_0 + \beta_1 \text{PBook Leverage}_{ijt} + \beta_2 \text{PTangibility}_{ijt-1} + \beta_3 \text{PMarket to Book Value}_{ijt-1} + \beta_4 \text{PProfitability}_{ijt-1} + \beta_5 \text{PFirm Size}_{ijt-1} + \text{Year Fixed Effect}_t + \text{Industry Fixed Effect}_j + \text{Error Term} \quad (3)$$

The peer leverage model describes the characteristics of peer group which influences the firm leverage policy. The definitions of variables and subscripts of peer leverage model have been discussed in below mentioned table no. 3.2.

## Composite Baseline Model for Leverage

$$\begin{aligned} \text{Leverage}_{ijt} = & \beta_0 + \beta_1 \text{PBook Lev}_{-ijt} + \beta_2 \text{Book Leverage}_{t-1} + \beta_3 \text{Market to Book Value}_{t-1} + \beta_4 \\ & \text{Profitability}_{t-1} + \beta_5 \text{Tangibility}_{t-1} + \beta_6 \text{Firm Size}_{t-1} + \beta_7 \text{PMarket to Book Value}_{-ijt-1} + \\ & \beta_8 \text{PProfitability}_{-ijt-1} + \beta_9 \text{PTangibility}_{-ijt-1} + \beta_{10} \text{PFirm Size}_{-ijt-1} + \beta_{11} \text{MR}_{-1} + \beta_{12} \text{IR}_{-1} + \text{Year Fixed} \\ & \text{Effect}_{t-1} + \text{Industry Fixed Effect}_{j-1} + \text{Error Term} \end{aligned} \quad (4)$$

In this model the behavioral affect of peers is captured by  $\beta_1$ . It means single firm makes its leverage related decision in the response of decisions taken by their peer group. This is main focus of the study. While  $\beta_2$  to  $\beta_6$  are firm's specific factors which explain how firm's factors affect firm's leverage policy and  $\beta_7$  to  $\beta_{10}$  explain peer firms' factors affecting firms' leverage policy. Lastly correlated effects are captured by  $\beta_{11}$  and  $\beta_{12}$ .

TABLE 3.2: Definitions of composite baseline model for leverage

Variables	Definitions/ Measurements
Leverage $_{ijt}$	Firm leverage for a current year, measured as the ratio of total debt to total book assets. Where subscripts $ijt$ correspond to firm, industry and year, respectively.
PBook Leverage $_{-ijt}$	Leverage of peer firms, excluding firm $i$ , from industry $j$ , at year $t$ .
Book Leverage $_{t-1}$	Firm leverage for previous year, measured as the ratio of total debt to total book assets
Tangibility $_{t-1}$	Firm tangibility of previous year, measured as net of plant, property and equipment divided by total assets
Market to Book Ratio $_{t-1}$	Firm market to book ratio of previous year, marker value of assets to book value of assets

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Profitability $t-1$	Firm profitability of previous year, calculated as earnings before interest, tax, depreciation, and amortization divided by total assets.
Firm size $t-1$	Firm size of previous year, measured as log of total assets
PTangibility $_{-ijt-1}$	Previous year average tangibility of peer firms, excluding firm $i$ , from industry $j$ , at year $t$ , measured as net of plant, property and equipment divided by total assets
PMarket to Book Ratio $_{-ijt-1}$	Previous year average market to book ratio excluding firm $i$ , from industry $j$ , at year $t$ , measured as market value of assets to book value of assets
PProfitability $_{-ijt-1}$	Previous year average profitability of peer firms excluding firm $i$ , from industry $j$ , at year $t$ , calculated as earnings before interest, tax, depreciation, and amortization divided by total assets.
PFirm size $_{-ijt-1}$	Previous year average size of peer firms excluding firm $i$ , from industry $j$ , at year $t$ , log of total assets
MR $_{-1}$	Stock Market Index of the current year
IR $_{-1}$	Interest Rate of the current year
Year Fixed Effect $t$	Year fixed effects (if fixed effects model were used)
Industry Fixed Effect $j$	Firm-year specific error term that is assumed to be measured to be correlated within firms and heteroskedastic

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### 3.4.2 Baseline Empirical Model Peer Effect on Dividend Policy

$$Dividend_{ijt} = \beta_0 + \beta_1 PDiv_{-ijt} + \beta_2 Div_{t-1} + \beta_3 Firm\ Specific\ Factors_{-ijt-1} + \beta_4 Peer\ Firm\ Factors_{-ijt-1} + \beta_5 MR_{-1} + \beta_6 IR_{-1} + Year\ Fixed\ Effect_t + Industry\ Fixed\ Effect_j + Error\ Term \quad (5)$$

The above written model is baseline model of dividend which describes peer behavior as well as firm specific and industry specific characteristics. This model also captures the correlated effects by examining the effect of stock market and interest rate on dividend of the firm. The definitions of variables and subscripts of peer firm effect model on dividend policy have been provided in table no. 3.3 given below.

#### 3.4.2.1 Corporate Dividend Model

$$Dividend_{ijt} = \beta_0 + \beta_1 Div_{t-1} + \beta_2 Profitability_{t-1} + \beta_3 Growth_{t-1} + \beta_4 Risk_{t-1} + \beta_5 Leverage_{t-1} + \beta_6 Free\ Cash\ Flow_{t-1} + Year\ Fixed\ Effect_t + Industry\ Fixed\ Effect_j + Error\ Term \quad (6)$$

The corporate dividend model explains the corporate characteristics which impacts the dividend policy of a firm. The definitions of variables and subscripts of corporate dividend model have been given in table no. 3.3 given below.

#### 3.4.2.2 Peer Dividend Model

$$Dividend_{ijt} = \beta_0 + \beta_1 PProfitability_{-ijt-1} + \beta_2 PGrowth_{-ijt-1} + \beta_3 PRisk_{-ijt-1} + \beta_4 PLeverage_{-ijt-1} + \beta_5 PFree\ Cash\ Flow_{-ijt-1} + Year\ Fixed\ Effect_t + Industry\ Fixed\ Effect_j + Error\ Term \quad (7)$$

The peer dividend model describes the characteristics of peer group which influences the firm dividend policy. The definitions of variables and subscripts of peer dividend model have been discussed in below mentioned table no.3.3.

## Composite Baseline Model for Dividend

$$\begin{aligned}
 \text{Dividend}_{ijt} = & \beta_0 + \beta_1 \text{PDiv}_{-ijt} + \beta_2 \text{Div}_{t-1} + \beta_3 \text{Profitability}_{t-1} + \beta_4 \text{Growth}_{t-1} + \beta_5 \text{Risk}_{t-1} + \beta_6 \text{Leverage}_{t-1} \\
 & + \beta_7 \text{Free Cash Flow}_{t-1} + \beta_8 \text{PProfitability}_{-ijt-1} + \beta_9 \text{PGrowth}_{-ijt-1} + \beta_{10} \text{PRisk}_{-ijt-1} + \beta_{11} \text{PLeverage}_{-ijt-1} + \\
 & \beta_{12} \text{PFree Cash Flow}_{-ijt-1} + \beta_{13} \text{MR}_{-1} + \beta_{14} \text{IR}_{-1} + \text{Year Fixed Effect}_t + \text{Industry Fixed Effect}_j + \text{Error} \\
 & \text{Term}
 \end{aligned} \tag{8}$$

In this model the behavioral effect of peers is captured by  $\beta_1$ . It means single firm makes its dividend decisions keeping in view decisions taken by their peer group. This is main focus of the study. While  $\beta_2$  to  $\beta_7$  are firm's specific factors which explain how firm's factors affect firm's dividend policy and  $\beta_8$  to  $\beta_{12}$  explain peer firms' factors affecting firms' dividend policy. Lastly correlated effects are captured by  $\beta_{13}$  and  $\beta_{14}$ .

TABLE 3.3: Definitions of variables and subscripts of composite baseline model for Dividend

Variables	Definitions/ Measurements
Dividend $_{ijt}$	Firm's dividend for a current year, measured as Dividend Payout Ratio. Where subscripts $ijt$ correspond to firm, industry and year, respectively.
PDiv $_{-ijt}$	Average of peer firms' dividend, excluding firm $i$ , from industry $j$ , at year $t$ .
Div $_{t-1}$	Previous year dividend of firm, calculated as dividend payout ratio
Profitability $_{t-1}$	Firm's profitability of previous year, calculated as earnings before interest, tax, depreciation, and amortization divided by total assets
Growth $_{t-1}$	Firm's growth of previous year, measured as sales growth
Risk $_{t-1}$	Firm's risk of previous year, calculated from standard deviation.

Leverage <sub>t-1</sub>		Firm's leverage of previous year, measured as the ratio of total debt to total book assets
Free Cash Flow <sub>t-1</sub>		Firm's operating income of previous year, measured as operating income minus capital expenditure
PProfitability <sub>-ijt-1</sub>		Previous year average profitability of peer firms, calculated as earnings before interest, tax, depreciation, and amortization divided by total assets
PGrowth <sub>-ijt-1</sub>		Previous year average growth of peer firms, measured as sales growth
PRisk <sub>-ijt-1</sub>		Previous year average risk of peer firms, calculated from standard deviation.
PLeverage <sub>-ijt-1</sub>		Previous year average leverage of peer firms, measured as the ratio of total debt to total book assets.
PFree Cash Flow <sub>-ijt-1</sub>	Cash	Previous year average free cash flow of peer firms, measured as operating income minus capital expenditure

---

The definitions of variables MR, IR, Year fixed effect t and Industry fixed effect j has been discussed in table no. 3.2.

### 3.4.3 Baseline Empirical Model Peer Effect on Investment

$$Investment_{ijt} = \beta_0 + \beta_1 PInv_{-ijt} + \beta_2 Inv_{t-1} + \beta_3 Firm\ Specific\ Factors_{ijt} + \beta_4 Peer\ Firm\ Factors_{-ijt-1} + \beta_5 MR_{-1} + \beta_6 IR_{-1} + Year\ Fixed\ Effect_t + Industry\ Fixed\ Effect_j + Error\ Term \quad (9)$$

The above written model is baseline model of investment policy which includes peer behavior, firm specific as well as industry specific characteristics. This model also captures the correlated effects by examining the impact of two important macroeconomic variables: stock market and interest rate on investment policy of the firm. The definitions of variables and subscripts of peer firm effect model on investment policy have been given in below shown table no. 3.4.

### 3.4.3.1 Corporate Investment Model

$$Investment_{ijt} = \beta_0 + \beta_1 Inv_{t-1} + \beta_2 Growth_{t-1} + \beta_3 Leverage_{t-1} + \beta_4 Free\ Cash\ Flow_{t-1} + \beta_5 Stock\ Return_{t-1} + Year\ Fixed\ Effect_t + Industry\ Fixed\ Effect_j + Error\ Term \quad (10)$$

This model is corporate investment model which explains the corporate characteristics having impact on investment policy of a firm. The definitions of variables and subscripts of corporate investment model have been discussed in table no. 3.4 given below.

### 3.4.3.2 Peer Investment Model

$$Investment_{ijt} = \beta_0 + \beta_1 PGrowth_{-ijt-1} + \beta_2 PLeverage_{-ijt-1} + \beta_3 PFree\ Cash\ Flow_{-ijt-1} + \beta_4 PStock\ Return_{-ijt-1} + Year\ Fixed\ Effect_t + Industry\ Fixed\ Effect_j + Error\ Term \quad (11)$$

Peer investment model describes the characteristics of peer group which impacts the firm investment policy. The definitions of variables and subscripts of peer investment model have been given in below stated table no. 3.4.

## Composite Baseline Model for Investment

$$Investment_{ijt} = \beta_0 + \beta_1 PInv_{-ijt} + \beta_2 Inv_{t-1} + \beta_3 Growth_{t-1} + \beta_4 Leverage_{t-1} + \beta_5 Free\ Cash\ Flow_{t-1} + \beta_6 Stock\ Return_{t-1} + \beta_7 PGrowth_{-ijt-1} + \beta_8 PLeverage_{-ijt-1} + \beta_9 PFree\ Cash\ Flow_{-ijt-1} + \beta_{10} PStock\ Return_{-ijt-1} + \beta_{11} MR_{-1} + \beta_{12} IR_{-1} + Year\ Fixed\ Effect_t + Industry\ Fixed\ Effect_j + Error\ Term \quad (12)$$

In this model the behavioral effect of peers is captured by  $\beta_1$ . It means single firm makes its investment decision taking into account decisions taken by their peer group. This is main focus of the study. While  $\beta_2$  to  $\beta_6$  are firm's specific factors which explain how firm's factors affect firm's investment policy and  $\beta_7$  to  $\beta_{10}$  explain peer firms' factors affecting firms' investment policy. Lastly correlated effects are captured by  $\beta_{11}$  and  $\beta_{12}$ .

TABLE 3.4: Definitions of variables and subscripsts of composite baseline model for Investment

Variables	Definitions/ Measurements
Investment $_{ijt}$	Firm's Investment for a current year, measured as the ratio of capital expenditure over total assets. Where subscripsts $ijt$ correspond to firm, industry and year, respectively
PInv $_{-ijt}$	Average of peer firms' investment excluding firm $i$ , outcomes from industry $j$ , at year $t$  Previous year investment of firm, calculated as the ratio of capital expenditure over total assets
Inv $_{t-1}$	
Growth $_{t-1}$	Firm's growth of previous year , sales growth
Leverage $_{t-1}$	Firm's leverage of previous year, measured as the ratio of total debt to total book assets
Free Cash Flow $_{t-1}$	Firm's free cash flow of previous year, calculated as Operating income minus capital expenditure
Stock Return $_{t-1}$	Firm's stock return of previous year, measured as current price minus previous price divided by previous price
PGrowth $_{-ijt-1}$	Previous year average growth of peer firms excluding firm $i$ , from industry $j$ , at year $t$ . Measured as sales growth
PLeverage $_{-ijt-1}$	Previous year average leverage of peer firms excluding firm $i$ , from industry $j$ , at year $t$ . Measured as the ratio of total debt to total book assets
PFree Flow $_{-ijt-1}$	Cash Previous year average free cash flow of peer firms excluding firm $i$ , from industry $j$ , at year $t$ . Calculated as Operating income minus capital expenditure

PStock Return <sub>-ijt-1</sub>	Previous year average stock return of peer firms excluding firm <i>i</i> , from industry <i>j</i> , at year <i>t</i> . Measured as current price minus previous price divided by previous price
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The definitions of variables MR, IR, Year fixed effect *t* and Industry fixed effect *j* has been discussed in table no. 3.2

### 3.5 Macro-economic Factors and Financial Policies

In recent past researchers' investigated the impact of certain external factors on corporate decision making. These researchers' jointly developed consensus that not only internal factors' but external factors' determines financing decisions of firms. There are certain macro-economic factors which impacts corporate financial decision making. Numerous past studies confirmed vital role of macro-economic factors in determining firms' capital structure, dividend policy as well as investment policy (Bas, Muradoglu & Phylaktis, 2009; Chen et al., 2005; Eldomiaty & Tarek, 2007; Giannetti, 2003; Mahmud et al., 2009; Ofori-Sasu et al., 2017).

Among several macro-economic factors, two key indicators which have been chosen were: Interest rate and Stock market performance. Results aforementioned studies found significant relationship between above stated macro-economic factors and financial policies of the firms. Hence, these macro-economic factors were considered. Empirical evidences provided by researchers' confirmed the impact of interest rate on financial decisions of firms (Bokpin, 2009; Drobetz, Pensa & Wanzenried, 2007; Henderson, Jegadeesh & Weisbach, 2006; Rahman & Rashid, 2009; Tokuoka, 2012; Wang & Yu, 2007). Hence, it is confirmed that rise or fall in the interest rate can change financial decisions pertaining to corporate leverage, dividend and investment.

Relating to stock market, market timing theory provides theoretical justification concerning when and why firms' adjust/change their financial decisions as per market situation. Past literature pertaining to volatility in stock market revealed

important implications for corporate managers' in amending their financial policies decisions (Akerlof & Shiller, 2009; Kim, Morley & Nelson, 2004; Stock & Watson, 2003; Zhang, 2006). The underlying theoretical justification confirms that corporate managers' determine optimal leverage policy, dividend declaration as well as payment and investment decisions keeping in view performance of stock market.

## **3.6 Does mimicking behavior also generate same financial performance?**

The current study confirmed the impact of peer firms' on corporate financial policies this compelled us to examine either firms' who mimic financial policies also intends to generates same financial performance or not. To empirically analyze this relationship, Propensity Score Model was used (PSM).

### **3.6.1 Propensity Score Matching**

Rosenbaum and Rubin (1983) were the first who developed the methodology for Propensity Matching Score (PSM). Since its inception it had caught attention of many researchers' who had applied it in numerous disciplines. The PSM was basically developed to investigate casual effects in such situations where experimental designs or implementation of random assignment is impossible because of nature of problem, cost and/or for ethical reasons. It has been widely applied in areas of economics (Dehejia & Wahba, 1999), medicine (Wolfe & Michaud, 2004), education (Bryson, Dorsett & Purdon, 2002). Lately, sociologists' (Grotsky, 2007), as well financial scholars (Campello, Graham, & Harvey, 2010; Karwarski & Grzybowska, 2016) have also utilized PSM.

PSM is a statistical matching technique that uses to estimate the outcome of a behavior, policy, or other interference by explaining the independent variable that predicts receiving the treatment. For this purpose, the logistic regression was utilized where the outcome was measured with a dichotomous variable (in which there were only two possible outcomes). The aim of current study was to apply

PSM methodology to determine either small sized firms mimic larger firms as well as either less profitable firms mimic their successful more profitable firms'. For the current study, the selection of firms in both groups was different keeping in view their characteristics. As it is really difficult to match both groups on separate characteristics, each participating as well non-participating firms' was assigned a score that is a propensity score. The following steps were carried out to implement PSM (Heinrich, Maffioli & Vazquez, 2010).

- Calculating propensity score via logit/probit regression
- Choosing an appropriate algorithm to proceed for matching propensity score
- Estimating casual effects by comparing matched groups on the outcome

Prior research studies confirmed that firms who are larger in size as well profitable are more likely to be imitated by firms' who are smaller in size (Haunschild & Miner, 1997; Haveman, 1993). Such as small firms may think that their larger rivals' are equipped with better information consequently like to follow them. Thus, the study recognized two major sets on the basis of literature. First are small firms as they facsimile large firms in financial decisions presented as one. Second are large firms or control set in this study remains equal to zero. On the basis of propensity score treatment set is then matched with control set.

$$P(x_i) = \text{Pr ob}(T_i = 1 \mid x_i), \text{ with } (0 < P(x_i) < 1)$$

Concerning financial performance of both groups (small versus large i.e. control group) it was done by analyzing their Return on Assets (ROA), Return on Equity (ROE) and Stock Return (SR).

## 3.7 Moderating Role of Ownership Concentration

### 3.7.1 Calculation of Ownership Concentration

The measurement of ownership concentration for the current study has been made utilizing top five shareholders' of the firms.

It was calculated via dividing total number of shares held by top five shareholders' by total number of shares.

The mathematical formula used for this purpose mentioned below

$$\text{Ownership Concentration} = \frac{\text{Total number of shares held by top five shareholders'}}{\text{Total number of shares}}$$

To add this, no distinction relating to categories of shareholders' has been made in the current study. For including in or excluding out shareholders' in/from top five category, no cut-off level or any other criteria was used.

The basic purpose of considering top five shareholders was that their large shareholding enables them to exercise more monitoring and controlling as well as power to influence corporate financial decisions.

However, the **moderating role of ownership concentration** between peer effect and firms financial policies was traced out with the help of the following equations.

### 3.7.2 The moderating role of ownership concentration in relation between peer effect and firm leverage policy

#### Firm Specific Moderation Model for Leverage

$$\begin{aligned} \text{Leverage}_{ijt} = & \beta_0 + \beta_1 \text{PBook Lev}_{ijt} + \beta_2 \text{Book Leverage}_{t-1} + \beta_3 \text{Tangibility}_{t-1} + \beta_4 \text{Market to Book} \\ & \text{Value}_{t-1} + \beta_5 \text{Profitability}_{t-1} + \beta_6 \text{Firm Size}_{t-1} + \beta_7 \text{OC}_{-1} + \beta_8 \text{POC}_{-ijt} + \beta_9 \text{PBook Lev}_{ijt} * \text{POC}_{-ijt} + \beta_{10} \\ & \text{Book Leverage}_{t-1} * \text{OC}_{-1} + \beta_{11} \text{Tangibility}_{t-1} * \text{OC}_{-1} + \beta_{12} \text{Market to Book Value}_{t-1} * \text{OC}_{-1} + \beta_{13} \text{Profitability} \\ & \text{t-1} * \text{OC}_{-1} + \beta_{14} \text{Firm Size}_{t-1} * \text{OC}_{-1} + \text{Year Fixed Effect}_t + \text{Industry Fixed Effect}_j + \text{Error Term} \end{aligned} \quad (13)$$

Definitions of variables and subscripts of firm specific moderation model for leverage specifically of Tangibility  $t-1$ , Market to Book Value  $t-1$ , Profitability  $t-1$ , and Firm Size  $t-1$  are given in table no. 3.2 and description relating to  $\text{OC}_{-1}$ ,  $\text{POC}_{-ijt}$ ,  $\text{PBook Lev}_{ijt} * \text{POC}_{-ijt}$ ,  $\text{Book Leverage}_{t-1} * \text{OC}_{-1}$  has been provided in table no. 3.5. Whereas,  $\text{Tangibility}_{t-1} * \text{OC}_{-1}$ ,  $\text{Market to Book Value}_{t-1} * \text{OC}_{-1}$ ,  $\text{Profitability}_{t-1} * \text{OC}_{-1}$  and  $\text{Firm Size}_{t-1} * \text{OC}_{-1}$  all are interaction terms of given firm specific variables with previous year ownership concentration of firm.

#### Peer Firm Specific Moderation Model for Leverage

$$\begin{aligned} \text{Leverage}_{ijt} = & \beta_0 + \beta_1 \text{PBook Lev}_{ijt} + \beta_2 \text{PTangibility}_{ijt-1} + \beta_3 \text{PMarket to Book Value}_{ijt-1} + \\ & \beta_4 \text{PProfitability}_{ijt-1} + \beta_5 \text{PFirm Size}_{ijt-1} + \beta_6 \text{POC}_{-ijt} + \beta_7 \text{PBook Lev}_{ijt} * \text{POC}_{-ijt} + \beta_8 \text{PTangibility}_{ijt-1} \\ & * \text{POC}_{-ijt-1} + \beta_9 \text{PMarket to Book Value}_{ijt-1} * \text{POC}_{-ijt-1} + \beta_{10} \text{PProfitability}_{ijt-1} * \text{POC}_{-ijt-1} + \beta_{11} \text{PFirm} \\ & \text{Size}_{ijt-1} * \text{POC}_{-ijt-1} + \text{Year Fixed Effect}_t + \text{Industry Fixed Effect}_j + \text{Error Term} \end{aligned} \quad (14)$$

Definitions of variables and subscripts of peer firm specific moderation model for leverage specifically Leverage  $ijt$ ,  $\text{PBook Lev}_{ijt}$ ,  $\text{PTangibility}_{ijt-1}$ ,  $\text{PMarket to Book Value}_{ijt-1}$ ,  $\text{PProfitability}_{ijt-1}$ ,  $\text{PFirm Size}_{ijt-1}$  are given in table no. 3.2 and  $\text{POC}_{-ijt}$ ,  $\text{PBook Lev}_{ijt} * \text{POC}_{-ijt}$  detail is provided in table no. 3.5. Whereas,  $\text{PTangibility}_{ijt-1} * \text{POC}_{-ijt-1}$ ,  $\text{PMarket to Book Value}_{ijt-1} * \text{POC}_{-ijt-1}$ ,  $\text{PProfitability}_{ijt-1} * \text{POC}_{-ijt-1}$  and  $\text{PFirm Size}_{ijt-1} * \text{POC}_{-ijt-1}$  all are interaction terms of peer firm specific variables with peers' ownership concentration excluding specific company from  $j$  industry of previous year.

## Composite Moderation Model for Leverage

$$\begin{aligned} \text{Leverage}_{ijt} = & \beta_0 + \beta_1 \text{PBook Lev}_{ijt} + \beta_2 \text{Book Leverage}_{t-1} + \beta_3 \text{OC}_{-1} + \beta_4 \text{POC}_{-ijt} + \beta_5 \text{PBook Lev}_{ijt} * \text{POC}_{-ijt} \\ & + \beta_6 \text{Book Leverage}_{t-1} * \text{OC}_{-1} + \beta_7 \text{SM}_{-1} + \beta_8 \text{IR}_{-1} + \text{Year Fixed Effect}_t + \text{Industry Fixed Effect}_j + \text{Error Term} \end{aligned} \quad (15)$$

Here,  $\beta_5$  captures the moderation effect of ownership concentration in relation between firm's leverage policy and peer firms' leverage policy.

TABLE 3.5: Definitions of variables and subscripts of composite moderation model for leverage

Variables	Definitions/ Measurements
Leverage $_{ijt}$	Firm leverage, measured as the ratio of total debt to total book assets. Where subscripts $ijt$ correspond to firm, industry and year, respectively
PBook Lev $_{ijt}$	Average of peer firms' leverage, excluding firm $i$ , from industry $j$ , at year $t$
Book Leverage $_{t-1}$	Firm leverage for previous year, measured as the ratio of total debt to total book assets
OC $_{-1}$	Firm specific ownership concentration of previous year
POC $_{-ijt}$	Average of peer firms' ownership concentration excluding firm $i$ , from industry $j$ , at year $t$
PBook Lev*POC $_{-ijt}$	Peer leverage multiplied by peer ownership concentration excluding firm $i$ , from industry $j$ , at time $t$
Book Leverage $_{t-1}$ *OC $_{-1}$	Firm leverage for previous year multiplied by firm specific ownership concentration of previous year

### 3.7.3 The moderating role of ownership concentration in relation between peer effect and firm dividend policy

#### Firm Specific Moderation Model for Dividend

$$\begin{aligned}
 Dividend_{ijt} = & \beta_0 + \beta_1 PDiv_{-ijt} + \beta_2 Div_{t-1} + \beta_3 Profitability_{t-1} + \beta_4 Growth_{t-1} + \beta_5 Risk_{t-1} + \beta_6 Leverage_{t-1} + \\
 & \beta_7 Free\ Cash\ Flow_{t-1} + \beta_8 OC_{-1} + \beta_9 POC_{-ijt} + \beta_{10} PDiv_{-ijt} * POC_{-ijt} + \beta_{11} Div_{t-1} * OC_{-1} + \\
 & \beta_{12} Profitability_{t-1} * OC_{-1} + \beta_{13} Growth_{t-1} * OC_{-1} + \beta_{14} Risk_{t-1} * OC_{-1} + \beta_{15} Leverage_{t-1} * OC_{-1} + \beta_{16} Free \\
 & Cash\ Flow_{t-1} * OC_{-1} + Year\ Fixed\ Effect_t + Industry\ Fixed\ Effect_j + Error\ Term
 \end{aligned} \tag{16}$$

Definitions of variables and subscripts of firm specific moderation model for dividend specifically of Profitability<sub>t-1</sub>, Growth<sub>t-1</sub>, Risk<sub>t-1</sub>, Leverage<sub>t-1</sub> and Free Cash Flow<sub>t-1</sub> are given in table no. 3.3 and description relating to OC<sub>-1</sub>, POC<sub>-ijt</sub>, PDiv<sub>-ijt</sub>\*POC<sub>-ijt</sub>, Div<sub>t-1</sub>\*OC<sub>-1</sub> has been provided in table no. 3.6. Whereas, Profitability<sub>t-1</sub>\*OC<sub>-1</sub>, Growth<sub>t-1</sub>\*OC<sub>-1</sub>, Risk<sub>t-1</sub>\*OC<sub>-1</sub>, Leverage<sub>t-1</sub>\*OC<sub>-1</sub> and Free Cash Flow<sub>t-1</sub>\*OC<sub>-1</sub> all are interaction terms of given firm specific variables of dividend with previous year ownership concentration of firm.

#### Peer Firm Specific Moderation Model for Dividend

$$\begin{aligned}
 Dividend_{ijt} = & \beta_0 + \beta_1 PDiv_{-ijt} + \beta_2 PProfitability_{-ijt-1} + \beta_3 PGrowth_{-ijt-1} + \beta_4 PRisk_{-ijt-1} + \beta_5 PLeverage_{-ijt-1} + \\
 & \beta_6 PFree\ Cash\ Flow_{-ijt-1} + \beta_7 POC_{-ijt} + \beta_8 PDiv_{-ijt} * POC_{-ijt} + \beta_9 PProfitability_{-ijt-1} * POC_{-ijt-1} + \\
 & \beta_{10} PGrowth_{-ijt-1} * POC_{-ijt-1} + \beta_{11} PRisk_{-ijt-1} * POC_{-ijt-1} + \beta_{12} PLeverage_{-ijt-1} * POC_{-ijt-1} + \beta_{13} PFree\ Cash \\
 & Flow_{-ijt-1} * POC_{-ijt-1} + Year\ Fixed\ Effect_t + Industry\ Fixed\ Effect_j + Error\ Term
 \end{aligned} \tag{17}$$

Definitions of variables and subscripts of peer firm specific moderation model for dividend specifically Dividend<sub>ijt</sub>, PDiv<sub>-ijt</sub>, PProfitability<sub>-ijt-1</sub>, PGrowth<sub>-ijt-1</sub>, PRisk<sub>-ijt-1</sub>, PLeverage<sub>-ijt-1</sub> and PFree Cash Flow<sub>-ijt-1</sub> are given in table no. 3.3 and POC<sub>-ijt</sub>, PDiv<sub>-ijt</sub>\*POC<sub>-ijt</sub> detail is provided in table no. 3.6. Whereas, PProfitability<sub>-ijt-1</sub>\*POC<sub>-ijt-1</sub>, PGrowth<sub>-ijt-1</sub>\*POC<sub>-ijt-1</sub>, PRisk<sub>-ijt-1</sub>\*POC<sub>-ijt-1</sub>, PLeverage<sub>-ijt-1</sub>\*POC<sub>-ijt-1</sub> and PFree Cash Flow<sub>-ijt-1</sub>\*POC<sub>-ijt-1</sub> all are interaction terms of peer firm specific variables of dividend with peers' ownership concentration excluding specific company from j industry of previous year.

## Composite Moderation Model for Dividend

$$Dividend_{ijt} = \beta_0 + \beta_1 PDiv_{-ijt} + \beta_2 Div_{t-1} + \beta_3 OC_{-1} + \beta_4 POC_{-ijt} + \beta_5 PDiv_{-ijt} * POC_{-ijt} + \beta_6 Div_{t-1} * OC_{-1} + \beta_7 SM_{-1} + \beta_8 IR_{-1} + Year\ Fixed\ Effect_t + Industry\ Fixed\ Effect_j + Error\ Term \quad (18)$$

Here,  $\beta_5$  captures the moderation effect of ownership concentration in relation between firm's dividend policy and peer firms' dividend policy.

TABLE 3.6: Definitions of variables and subscripsts of composite moderation model for dividend

Variables	Definitions
Dividend $_{ijt}$	Firm's dividend for a current year, measured as Dividend Payout Ratio. Where subscripsts $ijt$ correspond to firm, industry and year, respectively.
$PDiv_{-ijt}$	Average of peer firms' dividend, excluding firm $i$ , from industry $j$ , at year $t$
$Div_{t-1}$	Previous year dividend of firm, calculated as dividend payout ratio
$OC_{-1}$	Firm specific ownership concentration of previous year
$POC_{-ijt}$	Average of peer firms' ownership concentration excluding firm $i$ , from industry $j$ , at year $t$
$PDiv * POC_{-ijt}$	Peer average dividend multiplied by peer ownership concentration excluding firm $i$ , from industry $j$ , at time $t$
$Div_{t-1} * OC_{-1}$	Previous year dividend of the firm multiplied by ownership concentration of previous year

The definitions of variables MR, IR, Year fixed effect  $t$  and Industry fixed effect  $j$  has been discussed in table no. 3.2.

### 3.7.4 The moderating role of ownership concentration in relation between peer effect and firm investment policy

#### Firm Specific Moderation Model for Investment

$$\begin{aligned}
 Investment_{ijt} = & \beta_0 + \beta_1 PInv_{-ijt} + \beta_2 Inv_{t-1} + \beta_3 Growth_{t-1} + \beta_4 Leverage_{t-1} + \beta_5 Free\ Cash\ Flow_{t-1} + \beta_6 \\
 & Stock\ Return_{t-1} + \beta_7 OC_{-1} + \beta_8 POC_{-ijt} + \beta_9 PInv_{-ijt} * POC_{-ijt} + \beta_{10} Inv_{t-1} * OC_{-1} + \beta_{11} Growth_{t-1} * OC_{-1} + \\
 & \beta_{12} Leverage_{t-1} * OC_{-1} + \beta_{13} Free\ Cash\ Flow_{t-1} * OC_{-1} + \beta_{14} Stock\ Return_{t-1} * OC_{-1} + Year\ Fixed \\
 & Effect_t + Industry\ Fixed\ Effect_j + Error\ Term
 \end{aligned} \tag{19}$$

Definitions of variables and subscripts of firm specific moderation model for investment specifically of  $Investment_{ijt}$ ,  $PInv_{-ijt}$ ,  $Inv_{t-1}$ ,  $Growth_{t-1}$ ,  $Leverage_{t-1}$ ,  $Free\ Cash\ Flow_{t-1}$ , and  $Stock\ Return_{t-1}$  are given in table no. 3.4 and description relating to  $OC_{-1}$ ,  $POC_{-ijt}$ ,  $PInv_{-ijt} * POC_{-ijt}$ ,  $Inv_{t-1} * OC_{-1}$  has been provided in table no. 3.7. Whereas,  $Growth_{t-1} * OC_{-1}$ ,  $Leverage_{t-1} * OC_{-1}$ ,  $Free\ Cash\ Flow_{t-1} * OC_{-1}$  and  $Stock\ Return_{t-1} * OC_{-1}$  all are interaction terms of given firm specific variables of investment with previous year ownership concentration of firm.

#### Peer Firm Specific Moderation Model for Investment

$$\begin{aligned}
 Investment_{ijt} = & \beta_0 + \beta_1 PInv_{-ijt} + \beta_2 PGrowth_{-ijt-1} + \beta_3 PLeverage_{-ijt-1} + \beta_4 PFree\ Cash\ Flow_{-ijt-1} + \\
 & \beta_5 PStock\ Return_{-ijt-1} + \beta_6 POC_{-ijt} + \beta_7 PInv_{-ijt} * POC_{-ijt} + \beta_8 PGrowth_{-ijt-1} * POC_{-ijt-1} + \beta_9 PLeverage_{-ijt-1} \\
 & * POC_{-ijt-1} + \beta_{10} PFree\ Cash\ Flow_{-ijt-1} * POC_{-ijt-1} + \beta_{11} PStock\ Return_{-ijt-1} * POC_{-ijt-1} + Year\ Fixed \\
 & Effect_t + Industry\ Fixed\ Effect_j + Error\ Term
 \end{aligned} \tag{20}$$

Definitions of variables and subscripts of peer firm specific moderation model for investment specifically  $Investment_{ijt}$ ,  $PInv_{-ijt}$ ,  $PGrowth_{-ijt-1}$ ,  $PLeverage_{-ijt-1}$ ,  $PFree\ Cash\ Flow_{-ijt-1}$  and  $PStock\ Return_{-ijt-1}$  are given in table no. 3.4 and  $POC_{-ijt}$ ,  $PInv_{-ijt} * POC_{-ijt}$  detail is provided in table no. 3.7.

Whereas,  $PGrowth_{-ijt-1} * POC_{-ijt-1}$ ,  $PLeverage_{-ijt-1} * POC_{-ijt-1}$ ,  $PFree\ Cash\ Flow_{-ijt-1} * POC_{-ijt-1}$  and  $PStock\ Return_{-ijt-1} * POC_{-ijt-1}$  all are interaction terms of peer firm specific variables of investment with peers' ownership concentration excluding specific company from j industry of previous year.

## Composite Moderation Model for Investment

$$Investment_{ijt} = \beta_0 + \beta_1 PInv_{-ijt} + \beta_2 Inv_{t-1} + \beta_3 OC_{-1} + \beta_4 POC_{-ijt} + \beta_5 PInv_{-ijt} * POC_{-ijt} + \beta_6 Inv_{t-1} * OC_{-1} + \beta_7 SM_{-1} + \beta_8 IR_{-1} + Year\ Fixed\ Effect_t + Industry\ Fixed\ Effect_j + Error\ Term \quad (21)$$

TABLE 3.7: Definitions of variables and subscripts of composite moderation model for Investment

Variables	Definitions
Investment $_{ijt}$	Firm's Investment for a current year measured as the ratio of capital expenditure over total assets. Where subscripts $_{ijt}$ correspond to firm industry and year respectively
$PInv_{-ijt}$	Average of peer firms' investment excluding firm i from industry j at year t
$Inv_{t-1}$	Previous year investment of firm calculated as the ratio of capital expenditure over total assets
$OC_{-1}$	Firm specific ownership concentration of previous year
$POC_{-ijt}$	Average of peer firms' ownership concentration excluding firm i from industry j at year t
$PInv * POC_{-ijt}$	Peer average investment multiplied by peer ownership concentration excluding firm i from industry j at time t
$Inv_{t-1} * OC_{-1}$	Previous year investment of firm multiplied by ownership concentration of previous year

The definitions of variables MR, IR, Year fixed effect t and Industry fixed effect j has been discussed in table no. 3.2.

In model No. 21,  $\beta_5$  captures the moderation effect of ownership concentration in relation between firm's investment policy and peer firms' investment policy.

### 3.8 Summary of Empirical Estimation of Models

The data analysis of the current study was performed in four steps. Panel data can be analyzed via E-Views (Van den Bossche, 2011). This statistical software was user friendly as built in functions helped in producing data analysis relating to descriptive statistics (mean, median, standard deviation, minimum, maximum ranges) and correlation analysis. Hence, first step was performed using Eviews 8 to calculate descriptive statistics of variables used. Moreover, to find out relation among variables correlation analysis was also carried out. In this regard as per Kline (2005), the correlation among variables needs not be greater than 0.85. However, Hair et al., (1998) gave some relaxation by entailing that if variables are distinct from one another on strong theoretical grounds then greater than 0.85 correlations are acceptable.

In the second step, the association/connection between peer effect and corporate financial policies (capital structure, dividend policy & investment policy) was tested using generalized method of moments (fixed effect). GMM is a convenient method to get asymptotically efficient estimators (Bond, 2002). Moreover, to set aside issue of dynamic panel bias (Baum, 2006; Bond, 2002), the current study preferred to use GMM to integrate the dynamics of adjustments. Finally, GMM allow researchers' to solve problems like serial correlation, heteroscedasticity as well as endogeneity (Leitao, 2010).

In the third step, Propensity Matching Score (PSM) was performed to check either mimicked financial policies also intends to capture same financial returns or not. PSM is a statistical technique to match the differences in outcomes for both groups who got treatment versus who didn't get any treatment. For the current study the propensity score was calculated utilizing binary choice model i.e. logit. Then, matching procedure was performed as common support of propensity scores subsists in both groups. Lastly, average effect was calculated via difference of outcomes for matched groups.

Lastly, the moderating role of peers' ownership concentration were examined in relation between peers' capital structure, dividend and investment policy and firm's

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capital structure, dividend and investment policy. To check moderating effect the  $\beta$  of interaction term (peers' leverage  $\times$  peers' ownership concentration, peers' dividend  $\times$  peers' ownership concentration, peers' investment  $\times$  peers' ownership concentration) needs to be significant.

# Chapter 4

## Results

The current study data was analyzed using Generalized Method of Moments (GMM), Matching Propensity Score or Propensity Matching Score (PSM), and moderation. Descriptive statistics of the variables has been calculated moreover to check relation & direction among variables correlation analysis was conducted. In order to check the impact of peer effect on corporate financial policies (leverage, dividend and investment), the current study utilized GMM, to check either mimicking these firms also brings same financial performance or not PSM was carried out and lastly to check moderating role of ownership concentration moderation analysis was conducted.

### 4.1 Descriptive Statistics

#### 4.1.1 Descriptive Statistics of Leverage

The sample of current study was 313 firms comprised data from 2005-2015 periods. Data is winsorized at the 5% level. The descriptive statistics of leverage has been shown in below table no. 4.1. There are two distinct categories: firm-specific characteristics and peer-firm specific characteristics.

The mean of corporate leverage policy is 0.5774 and mean of peer firm leverage policy is 0.5796 respectively. Relating to firm-specific characteristics, the mean of

market to book ratio (MBR) is 1.0603, profitability (PROF) is 0.0449, tangibility (TANG) is 0.4567 and size (SIZE) is 14.7713. Relating to peer firm-specific characteristics the mean of market to book ratio (PMBR) is 1.2409, profitability (PPROF) is 0.0477, tangibility (PTANG) is 0.4608 and size (PSIZE) is 14.7721. The means of macro-economic variables stock market return (MR) and interest rate (IR) used in the study are 0.0495 and 0.0789 respectively.

TABLE 4.1: Descriptive Statistics of Leverage

Variable	N	Mean	SD	Min	Max
Lev	3130	0.5774	0.2058	0.124	0.9346
PLev	3130	0.5796	0.1041	0.2372	0.7353
Firm-specific characteristics					
MBR	3130	1.0603	0.6940	0.4186	4.1320
PROF	3130	0.0449	0.1071	-0.1726	0.3286
TANG	3130	0.4567	0.2313	0.027	0.9146
SIZE	3130	14.7713	1.6241	11.4404	18.3826
Peer firm-specific characteristics					
PMBR	3130	1.2409	0.8513	0.6039	3.8227
PPROF	3130	0.0477	0.0746	-0.3012	0.5385
PTANG	3130	0.4608	0.1283	0.0518	0.8414
PSIZE	3130	14.7721	1.0288	12.9527	19.2389
Macroeconomic Variables					
MR	3130	0.0495	0.0744	-0.0596	0.1670
IR	3130	0.0789	0.0202	0.0480	0.1080

*Lev=Leverage, PLev = Peer firm leverage, MBR= Market to book ratio, PROF= Profitability, TANG= Tangibility, PMBR= Peer Market to book ratio, PPROF= Peer Profitability, PTANG= Peer Tangibility, MR= Stock market return and IR= Interest rate*

#### 4.1.2 Descriptive Statistics of Dividend Policy

The descriptive statistics of firm-specific characteristics as well peer-firm specific characteristics and macro-economic factors are shown in below table no 4.2. The mean value of corporate dividend policy is 0.1920 and the mean value of peer firm dividend policy is 0.3993. The mean values of firm-specific characteristics for

profitability (PROF), growth (GRO), risk (RISK), leverage (LEV), and free cash flow (FCF) are 0.0449, 0.1296, 0.0627, 0.5774 and -0.0174. The mean values of peer firm-specific factors for peers' profitability (PPROF), peers' growth (PGRO), peers' risk (PRISK), peers' leverage (PLEV), and peers' free cash flow (PFCF) are -0.0477, 0.9697, 0.0577, 0.5796 and -0.0141. The mean values of macro-economic factors for stock market return (MR) is 0.0495 and for interest rate (IR) is 0.0789.

TABLE 4.2: Descriptive Statistics of Dividend

Variable	N	Mean	SD	Min	Max
DIV	3130	0.192	0.3122	0.0000	1.3065
PDIV	3130	0.3993	6.2662	0.1796	0.7031
Firm-specific characteristics					
PROF	3130	0.0449	0.1071	-0.1726	0.3286
GRO	3130	0.1296	0.4096	-0.7228	1.6230
RISK	3130	0.0627	0.5699	-1.3645	1.5046
LEV	3130	0.5774	0.2058	0.124	0.9346
FCF	3130	-0.0174	0.1384	-0.4373	0.2837
Peer firm-specific characteristics					
PPROF	3130	-0.0477	0.0746	-0.3012	0.5385
PGRO	3130	0.9697	4.8628	-0.3481	47.0248
PRISK	3130	0.0577	0.3121	-1.2261	1.7701
PLEV	3130	0.5796	0.1041	-0.2372	1.5353
PFCF	3130	-0.0141	0.0771	-0.4507	0.5316
Macroeconomic Variables					
MR	3130	0.0495	0.0744	-0.0596	0.1670
IR	3130	0.0789	0.0202	0.0480	0.1080

*DIV= dividend, PROF= profitability, GRO= growth, Risk= risk, LEV= leverage, FCF= free cash flow, PGRO peer growth, PDIV= peer dividend, PPROF= peer profitability, PGRO= peer growth, PRISK= peer risk, PLEV= peer leverage and PFCF= peer free cash flow, MR= stock market return and IR= interest rate*

### 4.1.3 Descriptive Statistics of Investment Policy

Descriptive statistics are shown in below table no 4.3. Like above there are two distinct categories: firm-specific characteristics and peer-firm specific characteristics. The mean of corporate investment policy is 0.0671 and mean of peer firm

investment policy is 0.0639 respectively. Relating to firm-specific characteristics, the mean of growth (GRO) is 0.1296, leverage (LEV) is 0.5774, free cash flow (FCF) is -0.0174 and return (RET) is 0.1981. Regarding peer firm-specific characteristics, the mean of peer growth (PGRO) is 0.9697, peer leverage (PLEV) is 0.5796, peer free cash flow (PFCF) is -0.0141 and peer return (PRET) is 0.2600. Relating to macro-economic variables the mean of stock market return (MR) is 0.0495 and interest rate (IR) is 0.0789 respectively.

TABLE 4.3: Descriptive Statistics of Investment

Variable	N	Mean	SD	Min	Max
INV	3130	0.0671	0.1013	-0.0667	0.4188
PINV	3130	0.0639	0.066	-0.5092	0.5483
Firm-specific characteristics					
GRO	3130	0.1296	0.4096	-0.7228	1.6230
LEV	3130	0.5774	0.2058	0.124	0.9346
FCF	3130	-0.0174	0.1384	-0.4373	0.2837
RET	3130	0.1981	0.7433	-0.7228	2.8083
Peer firm-specific characteristics					
PGRO	3130	0.9697	4.8628	-0.3481	47.0248
PLEV	3130	0.5796	0.1041	-0.2372	1.5353
PFCF	3130	-0.0141	0.0771	-0.4507	0.5316
PRET	3130	0.26	0.5726	-0.7829	2.8369
Macroeconomic Variables					
MR	3130	0.0495	0.0744	-0.0596	0.1670
IR	3130	0.0789	0.0202	0.0480	0.1080

*INV= investment, PINV= peer investment, GRO= growth, LEV= leverage, FCF= free cash flow, RET= return, PGRO peer growth, PLEV= peer leverage, PFCF= peer free cash flow, PRET= peer return, MR= stock market return and IR= interest rate*

## 4.2 Correlation Analysis

The correlation analysis shows the relation as well as the direction of relationship among variables.

### 4.2.1 Correlation Analysis of Leverage

Table 4.4 depicts correlation analysis. The leverage of the firm (LEV) is positively correlated with the average of peer firm leverage (PLEV) that is 0.216. Similarly, the current leverage of the firm (LEV) is also positively correlated with lag value of leverage of the firm (LEV<sub>-1</sub>) which is 0.856. Though the value of correlation is too high in this case but to address the issue of multicollinearity the current study used the formula:

$$\text{VIF} = 1 / (1 - R^2)$$

$$\text{VIF} = 1 / (1 - 0.8522)$$

$$\text{VIF} = 1 / 0.1478$$

$$\text{VIF} = 6.76$$

The value of VIF is 6.76 which is less than 10. Hence, this value is not causing multicollinearity having no impact on others.

Relating to firm specific factors, the correlation coefficient of current value of leverage with the lag value of tangibility (TANG<sub>-1</sub>), lag value of market to book ratio (MB<sub>-1</sub>) and lag value of size (SIZE<sub>-1</sub>) is positively correlated which is 0.187, 0.113 and 0.038 respectively. The correlation coefficient of current value of leverage with lag value of firm's profitability (PRO<sub>-1</sub>) is negatively correlated that is -0.409.

Relating to peer firm-specific characteristics the current value of leverage with the lag value of peer tangibility (PTANG<sub>-1</sub>), lag value of peer market to book ratio (PMB<sub>-1</sub>), lag value of peer profitability (PPRO<sub>-1</sub>), and lag value of peer size (PSIZE<sub>-1</sub>) is negatively correlated which is -0.104, -0.166, -0.115, and -0.028.

Relating to macro-economic factors the correlation of stock market return (MR) with current value of leverage (LEV) is negatively correlated (-0.020) and interest

rate (IR) with the current value of leverage (LEV) is also negatively correlated that is -0.099. The stock market return (MR) with peer leverage (PLEV) is negatively correlated with the value of -0.023 and positively correlated with the lag value of firm's leverage ( $LEV_{-1}$ ) that is 0.034. The lag value of firm's tangibility ( $TANG_{-1}$ ), lag value of firm's market to book ratio ( $MB_{-1}$ ), and the lag value of firm's profitability (PRO-1) is having positive correlation with stock market return with the values of 0.011, 0.006 and 0.034. And lag value of firm's size ( $SIZE_{-1}$ ) is having negative correlation with the value of -0.008 (Firm-specific factors).

The coefficient correlation of stock market return (MR) with lag value of peer firm's tangibility ( $PTANG_{-1}$ ), lag value of peer firm's market to book ratio ( $PMB_{-1}$ ) and lag value of peer firm's profitability ( $PPRO_{-1}$ ) are positively correlated that is 0.020, 0.019 and 0.017. Whereas, the correlation between stock market return (MR) and the lag value of peer firm's size ( $PSIZE_{-1}$ ) are negative that is -0.016 (Peer firm-specific factors).

The correlation of interest rate (IR) with the peer leverage (PLEV) is negative which -0.193 is, and positive with lag value of firm's leverage ( $LEV_{-1}$ ) that is 0.110. The correlation between interest rate (IR) and the lag value of firm's tangibility ( $TANG_{-1}$ ) is positive that is 0.063 whereas, with the lag value of firm's market to book ratio ( $MB_{-1}$ ), lag value of firm's profitability ( $PRO_{-1}$ ), and lag value of firm's size ( $SIZE_{-1}$ ) is negative that is -0.087, -0.48 and -0.069 (Firm-specific factors).

Similarly, the correlation between interest rate and the lag value of peer firm's tangibility ( $PTANG_{-1}$ ) is positive 0.117 while negative with the lag value of peer firm's market to book ratio ( $PMB_{-1}$ ), lag value of peer firm's profitability ( $PPRO_{-1}$ ) and lag value of peer firm's size ( $PSIZE_{-1}$ ) that is -0.189, -0.074, and -0.117 respectively (Peer firm-specific factors).

TABLE 4.4: Correlation Analysis of Leverage

	Firm Specific Factors							Peer Firm Specific Factors				Macroeconomic Variables	
	LEV	PLEV	LEV(-1)	TANG(-1)	MB(-1)	PRO(-1)	SIZE(-1)	PTANG(-1)	PMB(-1)	PPRO(-1)	PSIZE(-1)	MR	IR
LEV	1												
PLEV	0.216	1											
LEV(-1)	0.856	0.212	1										
TANG(-1)	0.187	0.115	0.218	1									
MB(-1)	0.113	0.234	-0.1	-0.163	1								
PRO(-1)	-0.409	-0.181	-0.429	-0.261	0.405	1							
SIZE(-1)	0.038	-0.04	0.022	-0.056	0.07	0.209	1						
PTANG(-1)	-0.104	0.245	0.104	0.433	-0.217	-0.232	-0.171	1					
PMB(-1)	-0.166	-0.365	-0.189	-0.141	0.418	0.254	0.056	-0.295	1				
PPRO(-1)	-0.115	-0.302	-0.13	-0.167	0.298	0.321	0.091	-0.321	0.456	1			
PSIZE(-1)	-0.028	-0.052	-0.037	-0.154	0.123	0.132	0.509	-0.271	0.08	0.176	1		
MR	-0.02	-0.023	0.034	0.011	0.006	0.034	-0.008	0.02	0.019	0.017	-0.016	1	
IR	-0.099	-0.193	0.11	0.063	-0.087	-0.048	-0.069	0.117	-0.189	-0.074	-0.117	0.077	1

*Lev=Leverage, (-1) = Lag value, PLev = Peer firm leverage, LEV = Leverage, TANG= Tangibility, MB= Market to book ratio, PRO= Profitability, SIZE= Size, PTANG= Peer Tangibility, PMB= Peer Market to book ratio, PPRO= Peer Profitability, PSIZE= Peer Size, MR= Stock market return and IR= Interest rate*

### 4.2.2 Correlation Analysis of Dividend

The correlation analysis of dividend policy is shown below in table no. 4.5.

Firm's dividend (DIV) is positively correlated with the average of peer firm dividend (PDIV) that is 0.059. Similarly, the current dividend of firm (DIV) is also positively correlated with lag value of dividend of the firm ( $DIV_{-1}$ ) which is 0.603.

Concerning firm specific factors, the correlation coefficient of firm's current dividend with the lag value of firm's profitability ( $PRO_{-1}$ ), the lag value of firm's growth ( $GRO_{-1}$ ), and lag value of firm's free cash flow ( $FCF_{-1}$ ) are positively correlated depicting values of 0.426, 0.044, and 0.180. Whereas, it is negatively correlated with lag value of firm's risk ( $RISK_{-1}$ ) and lag value of firm's leverage ( $LEV_{-1}$ ), the values are -0.060 and -0.220.

As far as peer firm specific factors are concerned, the correlation coefficient of firm's current dividend is having positive correlation with lag value of peer firm's profitability ( $PPRO_{-1}$ ), the lag value of peer firm's growth ( $PGRO_{-1}$ ) and lag value of peer firm's free cash flow ( $PFCF_{-1}$ ) with the values of 0.192, 0.022, and 0.106. While, it has negative correlation with lag value of firm's risk ( $RISK_{-1}$ ) as well as lag value of firm's leverage ( $LEV_{-1}$ ) that is -0.085 and -0.164 respectively.

The macro-economic factors including stock market return and interest rate, the correlation coefficient of stock market return (MR) with current value of firm's dividend (DIV) is positively correlated (0.025) and interest rate (IR) with the current value of dividend (DIV) is negatively correlated that is -0.067.

The correlation coefficient of stock market return (MR) with peer dividend (PLEV) is positive with the value of 0.009 and negative with the lag value of firm's dividend ( $LEV_{-1}$ ) that is -0.016. The correlation between stock market return (MR) and the lag value of firm's profitability ( $PRO_{-1}$ ), and the lag value of firm's growth ( $GRO_{-1}$ ), and lag value of firm's free cash flow ( $FCF_{-1}$ ) is positive 0.034, 0.019, 0.034 and 0.062 while negative with the lag value of firm's risk ( $RISK_{-1}$ ) that is -0.019 (Firm-specific factors).

The correlation coefficient of stock market return (IR) with the lag value of peer firm's profitability ( $PPRO_{-1}$ ), the lag value of peer firm's growth ( $PGRO_{-1}$ ), lag

value of firm's peer free cash flow ( $FCF_{-1}$ ) is positively reported as 0.017, 0.109, 0.093 and 0.135. The correlation of stock market return and lag value of peer firm's risk ( $PRISK_{-1}$ ) is negatively reported that is -0.047 (Peer firm-specific factors).

The correlation coefficient of interest rate (IR) with peer dividend (PLEV) and with the lag value of firm's dividend ( $LEV_{-1}$ ) is negatively correlated that is -0.048 and -0.047 respectively. The correlation between interest rate (IR) and the lag value of firm's growth ( $GRO_{-1}$ ), lag value of firm's risk ( $RISK_{-1}$ ) 0.019 and 0.172. However it is negatively correlated with the lag value of firm's profitability ( $PRO_{-1}$ ), lag value of firm's leverage ( $LEV_{-1}$ ) and lag value of firms' free cash flow ( $FCF_{-1}$ ) that is -0.048, -0.110 and -0.028 (Firm-specific factors).

The stock market return (IR) correlation with the lag value of peer firm's profitability ( $PPRO_{-1}$ ), the lag value of firms' leverage ( $LEV_{-1}$ ) and with the lag value of firm's peer free cash flow ( $FCF_{-1}$ ) is negative -0.074, -0.226 and -0.058 (Peer firm-specific factors). While its correlation with the lag value of peer firm's growth ( $PGRO_{-1}$ ) and with lag value of peer firm's risk ( $PRISK_{-1}$ ) is positive with the values of 0.167 and 0.403 respectively.

TABLE 4.5: Correlation Analysis of Dividend

	textFirm Specific Factor							Peer Firm Specific Factors					Macroeconomic Variables		
	DIV	PDIV	DIV(-1)	PRO(-1)	GRO(-1)	RISK(-1)	LEV(-1)	FCF(-1)	PPRO(-1)	PGRO(-1)	PRISK(-1)	PLEV(-1)	PFCF(-1)	MR	IR
DIV	1														
PDIV	0.059	1													
DIV(-1)	0.603	0.033	1												
PRO(-1)	0.426	0.013	0.398	1											
GRO(-1)	0.044	-0.01	0.019	0.194	1										
RISK(-1)	-0.06	0.021	0.064	0.134	0.025	1									
LEV(-1)	-0.22	0.032	-0.201	-0.429	0.02	-0.072	1								
FCF(-1)	0.18	-0.013	0.128	0.39	-0.015	0.032	-0.209	1							
PPRO(-1)	0.192	0.014	0.183	0.321	0.083	0.081	-0.13	0.09	1						
PGRO(-1)	0.022	-0.009	-0.012	0	-0.006	-0.02	-0.031	0.016	0.007	1					
PRISK(-1)	-0.085	0.035	0.088	0.1	0.018	0.315	-0.041	-0.02	0.189	-0.049	1				
PLEV(-1)	-0.164	0.068	-0.158	-0.21	0.007	-0.046	0.228	-0.088	-0.344	-0.044	-0.101	1			
PFCF(-1)	0.106	-0.021	0.085	0.115	0.01	-0.024	-0.052	0.127	0.301	0.097	-0.034	-0.199	1		
MR	0.025	0.009	-0.016	0.034	0.019	-0.019	0.034	0.062	0.017	0.109	-0.047	0.093	0.135	1	
IR	-0.067	-0.048	-0.047	-0.048	0.019	0.172	-0.11	-0.028	-0.074	0.167	0.403	-0.226	-0.058	0.077	1

*DIV= Dividend, PDIV= Peer Dividend, (-1) = Lag value, PRO= Profitability, GRO= Growth, RISK= Risk, LEV= Leverage, FCF= Free Cash flow, PPRO = Peer Profitability, PGRO Peer Growth, PRISK= Peer Risk, PLEV= Peer Leverage, PFCF= Peer Free Cash flow, MR= stock market return and IR= Interest rate*

### 4.2.3 Correlation Analysis of Investment Policy

The correlation analysis of investment policy has been shown in below table no. 4.6.

The firm's investment (INV) is positively correlated with the average of peer firm investment (PINV) that is 0.214. But, the current investment of the firm (INV) is having negative correlation with lag value of investment of the firm ( $INV_{-1}$ ) which is -0.069. The correlation coefficient of firm's current investment (INV) regarding firm specific factors having positive correlation with the lag value of firm's growth ( $GRO_{-1}$ ), lag value of firm's leverage ( $LEV_{-1}$ ), lag value of firm's free cash flow ( $FCF_{-1}$ ) and lag value of firm's return ( $RET_{-1}$ ) respectively. The correlation values are 0.031, 0.010, 0.016 and 0.014 respectively. The correlation coefficient of firm's current investment (INV) concerning peer firm specific factors having positive correlation with the lag value of peer firm's growth ( $PGRO_{-1}$ ) and lag value of peer firm's return ( $PRET_{-1}$ ) which is 0.078 and 0.003. Whereas, results confirmed its negative correlation with lag value of peer firm's leverage ( $PLEV_{-1}$ ) and lag value of peer firm's free cash flow ( $PFDCF_{-1}$ ), the values are -0.064 and -0.052.

Relating to macroeconomic factors, the correlation coefficient of firm's current investment (INV) is having positive correlation with stock market return (MR) that is 0.070. And it is having negative correlation with interest rate (IR) which is -0.146. The correlation coefficient of stock market return (MR) with peer investment (PINV) and lag value of firm's investment ( $INV_{-1}$ ) is positive with the values of 0.187 and 0.009. The correlation coefficient of stock market return with the lag value of firm's growth ( $GRO_{-1}$ ), lag value of firm's leverage ( $LEV_{-1}$ ), lag value of firm's free cash flow ( $FCF_{-1}$ ) is positive with the values of 0.019, 0.034 and 0.062. Whereas, there is negative correlation between stock market return (MR) and the lag value of firm's return ( $RET_{-1}$ ) that is -0.261 (Firm-specific factors).

Similarly, the correlation coefficient of stock market return (MR) is positive with the lag value of peer firm's growth ( $PGRO_{-1}$ ), with the lag value of peer firm's leverage ( $PLEV_{-1}$ ) as well with the lag value of peer firm's free cash flow ( $PFDCF_{-1}$ )

that is 0.109, 0.093 and 0.135. However, the correlation between stock market return (MR) and lag value of peer firm's return ( $PRET_{-1}$ ) is negative that is -0.437 (Firm-specific factors).

The correlation coefficient of interest rate (IR) with peer investment (PINV) is negative -0.363 and positive with the lag value of firm's investment ( $INV_{-1}$ ) 0.006. The correlation between the interest rate with the lag value of firm's growth ( $GRO_{-1}$ ) is positive that is 0.019. Whereas, it is found to be negative with the lag value of firm's leverage ( $LEV_{-1}$ ), lag value of firm's free cash flow ( $FCF_{-1}$ ) and lag value of firm's return ( $RET_{-1}$ ) is -0.110, -0.028 and -0.189 (Firm-specific factors).

Similarly, the correlation coefficient of interest rate (IR) with the lag value of peer firm's growth ( $PGRO_{-1}$ ) is positive that is 0.167. On the other hand, the correlation between interest rate (IR) and the lag value of peer firm's leverage ( $PLEV_{-1}$ ), the lag value of peer firm's free cash flow ( $PFCF_{-1}$ ) and lag value of peer firm's return ( $PRET_{-1}$ ) is found to be negative that is -0.226, -0.058 and -0.279 respectively (Firm-specific factors).

On the whole, in all three correlation tables 4.4, 4.5 and 4.6, the direction of relation among variables means they are moving in one direction or in opposite direction. The positive sign between them indicates that increase or decrease in the value of one variable cause an increase or decrease in the value of other variable. Conversely, opposite sign means increase in the value of one variable decreases the value of other variable or vice versa.

TABLE 4.6: Correlation Analysis of Investment

	Firm Specific Factors							Peer Firm Specific Factors				Macroeconomic Variables	
	INV	PINV	INV(-1)	GRO(-1)	LEV(-1)	FCF(-1)	RET(-1)	PGRO(-1)	PLEV(-1)	PFCF(-1)	PRET(-1)	MR	IR
INV	1												
PINV	0.214	1											
INV(-1)	-0.069	0.073	1										
GRO(-1)	0.031	0.025	0.126	1									
LEV(-1)	0.01	-0.069	0.026	0.02	1								
FCF(-1)	0.016	-0.014	-0.673	-0.015	-0.209	1							
RET(-1)	0.014	-0.011	-0.015	-0.005	-0.073	0.101	1						
PGRO(-1)	0.078	0.192	-0.002	-0.006	-0.031	0.016	0.017	1					
PLEV(-1)	-0.064	-0.124	-0.014	0.007	0.227	-0.088	-0.106	-0.044	1				
PFCF(-1)	-0.052	-0.06	-0.077	0.011	-0.052	0.127	0.098	0.097	-0.199	1			
PRET(-1)	0.003	-0.036	-0.037	-0.104	-0.074	0.068	0.498	0.025	-0.155	0.172	1		
MR	0.07	0.187	0.009	0.019	0.034	0.062	-0.261	0.109	0.093	0.135	-0.437	1	
IR	-0.146	-0.363	0.006	0.019	-0.11	-0.028	-0.189	0.167	-0.226	-0.058	-0.279	0.077	1

*INV= Investment, PINV= Peer Investment, (-1) = Lag value, GRO= Growth, LEV= Leverage, FCF= Free Cash flow, RET= Return, PGRO Peer Growth, PLEV= Peer Leverage, PFCF= Peer Free Cash flow, PRET= Peer Return, MR= Stock Market Return and IR= Interest rate*

## 4.3 Hypothesis Testing

### 4.3.1 Hypothesis Testing H<sub>1</sub>-H<sub>3</sub>

$H_1$  : There is impact of peers' on firms' capital structure.

$H_2$  : There is impact of peers' on firms' dividend policy.

$H_3$  : There is impact of peers' on firms' investment policy.

#### 4.3.1.1 Empirical Results of the GMM (fixed effect) for Capital Structure

Table 4.7 shows impact of peer firms' on corporate capital structure. The coefficient of PLEV is 0.8860 which is significant at 1% level (0.0000) which depicts that firms' corporate capital structure policy is significantly influenced by those of its peers. This finding of the study confirms that firm leverage policy is set keeping in view peer firms' leverage policy. Moreover, results reveals that the coefficient of PLEV (0.8860) is higher than any other firm specific or peer firm specific characteristics' coefficients. This further supports this version that behavior (actions) of peers matters a lot as compared to characteristics while setting optimal capital structure for them.

Relating to firm specific factors, it can be apparently seen that the lag value of firm leverage ( $LEV_{-1}$ ) and lag value of firm's profitability ( $PRO_{-1}$ ) are highly significant at 1percent (0.0000) with the values of 0.3610 and -0.1215 respectively. The positive connection with lag value of firm's leverage ( $LEV_{-1}$ ) indicates that firm's current leverage policy is set keeping in view its previous policy. This result affirm that firms' make their financial policy consistent (to large extent) with past practice of them. Whereas, the negative relation with the lag value of firm's profitability ( $PRO_{-1}$ ) depicts that firms' utilize their internal resources on priority basis to meet financial needs of them. As the higher the profitability of firms, lesser is the probability of acquiring debts. This finding is consistent with the theme of pecking order theory.

TABLE 4.7: Empirical results of the GMM (fixed effect) for Capital Structure

$$\begin{aligned} \text{Leverage}_{ijt} = & \beta_0 + \beta_1 \text{PBook Lev}_{ijt} + \beta_2 \text{Book Leverage}_{t-1} + \beta_3 \text{Market to Book Value}_{t-1} + \beta_4 \\ & \text{Profitability}_{t-1} + \beta_5 \text{Tangibility}_{t-1} + \beta_6 \text{Firm Size}_{t-1} + \beta_7 \text{PMarket to Book Value}_{ijt-1} + \\ & \beta_8 \text{PProfitability}_{ijt-1} + \beta_9 \text{PTangibility}_{ijt-1} + \beta_{10} \text{PFirm Size}_{ijt-1} + \beta_{11} \text{MR}_{-1} + \beta_{12} \text{IR}_{-1} + \text{Year Fixed} \\ & \text{Effect}_{t} + \text{Industry Fixed Effect}_{j} + \text{Error Term} \end{aligned} \quad (4)$$

Variable	Coefficient	S.E	Prob.
PLEV	0.886	0.1952	0.0000***
Firm Specific Factors			
LEV (-1)	0.361	0.0218	0.0000***
MBR (-1)	0.0107	0.0048	0.0268**
PRO(-1)	-0.1215	0.0263	0.0000***
TANG (-1)	0.0061	0.0187	0.7435
SIZE (-1)	0.0159	0.0098	0.1048*
Peer Firm Specific Factors			
PMBR (-1)	-0.0061	0.0035	0.0782*
PPRO(-1)	-0.0119	0.0413	0.7727
PTANG (-1)	-0.1338	0.1176	0.2555
PSIZE (-1)	-0.2561	0.0753	0.0007***
Macroeconomic Variables			
MR	-0.0174	0.0143	0.2221
IR	-1.852	0.5489	0.0008***
R-squared	0.8522		
J-statistic	1.7703		
Prob(J-statistic)	0.1833		

Market to book ratio, PRO= Profitability, TANG= Tangibility, SIZE= Size, PMBR= Peer Market to book ratio, PPRO= Peer Profitability, PTANG= Peer Tangibility, PSIZE= Peer Size, MR= Stock market return and IR= Interest rate. Moreover, \* significance at a 10% level (two-tailed test), \*\* significance at a 5% level (two-tailed test), and \*\*\* significance at a 1% level (two-tailed test).

Relating to firm specific factors, the results of the study revealed significant connection between leverage policy and lag value of market to book ratio of firms (MBR<sub>-1</sub>) which is significant at 5 percent (0.0268). The coefficient value is 0.0107, which shows that change in the value of market to book ratio by 1 unit brings

0.0107 units in firms' leverage. This is the indication that higher market value of shares than the book value of shares allows firms to get more loan at easy terms from the market. In addition to this, firms' leverage connection with the lag value of firms size ( $SIZE_{-1}$ ) found significant at 1%. The value (0.0159) depicts firms' who are large in size meet their financial requirements with the debts. The firm specific factor lag value of tangibility ( $TANG_{-1}$ ) showed no impact in determining firms' leverage policy. As it revealed insignificant connection which can be because of the reason that firm can borrow without or with low collaterals. Furthermore, availability of high free cash flow allow firms to utilize their internal resources to avail investment opportunities rather than to finance through leverage. Additionally, mature firms with less growth opportunities depends lesser on leverage although the portion of tangible assets gets higher with respect to total assets (Deesomsak, Paudyal & Pescetto, 2004) causing insignificant impact on firms' leverage policy. The current study result is consistent with Witwattanakantang (1999).

Concerning peer firm specific factors, the results showed no impact of lag value of peers' profitability ( $PPRO_{-1}$ ) as well as lag value of peers' tangibility ( $PTANG_{-1}$ ). Their insignificance indicates that firms do not consider peers profitability and tangibility while devising their own capital structure. Whereas, lag value of market to book ratio of peers' ( $PMB_{-1}$ ) and lag value of peers size ( $PSIZE_{-1}$ ) are significant at 10% and 1%. The coefficient values are -0.0061 and -0.2561 respectively. The negative sign indicate that the firms' leverage is having inverse relation with the market to book ratio as well as size of peer firms.

To address correlated effects stock market return (MR) and interest rate (IR) were used. The coefficient of stock market return is -0.0174 which is insignificant having no impact. While the coefficient of interest rate (IR) is  $_{-1}.8520$  significant at 1% level (0.000). This reveals that increase and decrease in the interest rate inversely affect the corporate leverage policy. Increase in cost of debt restricts firms' to utilize equity while decrease in rate of interest can compel them to acquire more debts.

$H_1$  : There is impact of peers' on firms' capital structure.

The results of current study confirmed the significant impact of peer group on corporate leverage policy of the firm ( $\beta = 0.8860$ ,  $p < 0.0000$ ). Thus, hypothesis H1 that there is impact of peers' on firms' capital structure is accepted.

#### 4.3.1.2 Empirical Results of the GMM (fixed effect) for Dividend Policy

In table 4.8 the impact of peer firm on dividend policy of the firm is shown. The coefficient of peer dividend (PDIV) is 0.0063 which is insignificant. This finding of the current study reveals that firms' while declaring and paying dividend do not consider peers' dividend policy. In the context of Pakistan, the overall dividend paying trend is inconsistent as the current study depicts that out of 3130 observations only 1383 observations paid dividend which is just 44 % of total 100%. Moreover, firm's current dividend policy is positively associated with the lag value of firms own dividend payout ratio  $PDIV_{(-1)}$  which is 0.0913 significant at 1 % (0.0000) which reveals that the current dividend payout of a firm respond according to firms' own lag value of dividend payout ratio.

The relation of firms' dividend with respect to firm specific factors entails following findings. The connection between dividend policy and lag values of firms' profitability ( $PRO_{-1}$ ) and lag value of firms' leverage ( $LEV_{-1}$ ) is highly significant which is at 1% (0.0002 & 0.0010). However, lag value of firms' profitability ( $PRO_{-1}$ ) is positively associated (0.0339) and lag value of firms' leverage ( $LEV_{-1}$ ) is negatively associated (-0.0164). This shows that the more profitable a firm the more likely they are in paying dividends. While, a more leveraged a firm, the lower chances of paying dividend. As leveraged firms' have to meet their financial obligations. Moreover, the association between firms dividend policy and lag value of firms' free cash flow ( $FCF_{-1}$ ) is positive (0.0121) significant at 5% (0.0424) shows that the more cash available to firm facilitates dividend payments. In contrast, the connection between dividend policy and lag value of firms' growth ( $GRO_{-1}$ ) and lag value of firms' risk ( $RISK_{-1}$ ) remained insignificant indicating no impact, thus do not contribute in determining firms' dividend policy.

TABLE 4.8: Empirical results of the GMM (fixed effect) for dividend

$$\begin{aligned}
\text{Dividend}_{ijt} = & \beta_0 + \beta_1 \text{PDiv}_{-ijt} + \beta_2 \text{Div}_{t-1} + \beta_3 \text{Profitability}_{t-1} + \beta_4 \text{Growth}_{t-1} + \beta_5 \text{Risk}_{t-1} + \beta_6 \text{Leverage}_{t-1} \\
& + \beta_7 \text{Free Cash Flow}_{t-1} + \beta_8 \text{PProfitability}_{-ijt-1} + \beta_9 \text{PGrowth}_{-ijt-1} + \beta_{10} \text{PRisk}_{-ijt-1} + \beta_{11} \text{PLeverage}_{-ijt-1} \\
& + \beta_{12} \text{PFree Cash Flow}_{-ijt-1} + \beta_{13} \text{MR}_{-1} + \beta_{14} \text{IR}_{-1} + \text{Year Fixed Effect}_t + \text{Industry Fixed Effect}_j + \text{Error Term}
\end{aligned}
\tag{8}$$

Variable	Coefficient	S.E	Prob.
PDIV	0.0063	0.0076	0.4069
Firm Specific Factors			
DIV (-1)	0.0913	0.0188	0.0000***
PRO (-1)	0.0339	0.0092	0.0002***
GRO (-1)	0.0003	0.0011	0.7932
RISK (-1)	0.0003	0.0009	0.7735
LEV(-1)	-0.0164	0.005	0.0010***
FCF (-1)	0.0121	0.006	0.0424**
Peer Firm Specific Factors			
PPRO (-1)	0.009	0.0121	0.458
PGRO (-1)	0.0004	0.0002	0.0064***
PRISK (-1)	0.0021	0.0029	0.4575
PLEV(-1)	-0.0113	0.0112	0.3151
PFCF (-1)	0.0326	0.0089	0.0003***
Macroeconomic Variables			
MR	0.0138	0.0075	0.0653*
IR	-0.148	0.0419	0.0004***
R-squared	0.5952		
J-statistic	0.0058		
Prob(J-statistic)	0.9391		

DIV= dividend, PROF= profitability, GRO= growth, Risk= risk, LEV= leverage, FCF= free cash flow, PGRO peer growth, PDIV= peer dividend, PPROF= peer profitability, PGRO= peer growth, PRISK= peer risk, PLEV= peer leverage and PFCF= peer free cash flow, MR= stock market return and IR= interest rate. Moreover, \* significance at a 10% level (two-tailed test), \*\* significance at a 5% level (two-tailed test), and \*\*\* significance at a 1% level (two-tailed test).

The connection between firms dividend policy and peer firm specific factors are

shown in table 4.8. It can be apparently seen that while deciding about one's own dividend policy, firms' do not care about peer firms' profitability (PPRO<sub>-1</sub>), peer firms' risk (PRISK<sub>-1</sub>) as well as peers' leverage (PLEV<sub>-1</sub>). As the lag values of all these factors have been shown having insignificant impact. General wisdom can help in understanding that the more or less profitability of peer firms, the higher or lower peers' risk and the more or less leveraged peer firms' cannot impact firms' belonging to that group in any respect. However, the association between firms' dividend policy with peers' growth (PGRO<sub>-1</sub>) and peers' free cash flow (PFCF<sub>-1</sub>) is highly significant at 1% with values 0.0004 and 0.0326. This means they have impact but contributes little as coefficient values having much less magnitude. In short, it can be said that firms consider their own characteristics (PRO<sub>-1</sub>, LEV<sub>-1</sub> & FCF<sub>-1</sub>) as well as industry's characteristics (PGRO<sub>-1</sub> & PFCF<sub>-1</sub>).

In order to check correlated effects macro-economic factors were utilized. Where the coefficient of stock market return (MR) is significant at 10% (0.0653) having coefficient value of 0.0138. This indicates that performance of stock market return contributes in determining dividend policy of the firm. On the other hand, interest rate (IR) is highly significant at 1% (0.0000) having negative connection with the coefficient value of -0.1480. This shows higher the rate of interest results in lowering the availability of free cash flow consequently lowers the dividend payout ratio.

$H_2$  : There is impact of peers' on firms' dividend policy.

The results of current study indicated that peer group has insignificant impact on corporate dividend policy of the firm ( $\beta = 0.0063$ ,  $p > 0.10$ ). Thus, hypothesis  $H_2$  that there is impact of peers' on firms' dividend policy is rejected.

#### **4.3.1.3 Empirical Results of the GMM (fixed effect) for Investment Policy**

Empirical results for corporate investment policy are shown below in table no. 4.9. The coefficient of peer investment (PINV) is 0.1419 significant at 1% level (0.000) which indicates that one unit change in the value of peer investment policy change firms' investment policy by 0.1419 units. This result of the study confirms

the impact of peers' on investment policies of the firms. As far as the connection between firms' investment policy with its lag value ( $INV_{-1}$ ) is concerned, it is negatively (-0.1203) yet significantly related at 1% level (0.0000). This exposes that firms' invest in fixed assets, ever year they don't have tendency to invest in fixed assets again so do not rely on their past practice regarding investment.

Concerning firm-specific characteristics the significant value of lag value of firms' leverage ( $LEV_{-1}$ ) which is (0.0157) significant at 10% level (0.0657) reveals that firms' while deciding about investment decisions firms' may consider debt options. Rest of the firm specific factors including lag value of firms' growth ( $GRO_{-1}$ ), lag value of firms' free cash flow ( $FCF_{-1}$ ) and lag value of firms' return ( $RET_{-1}$ ) revealed insignificant having no impact.

Peer firm-specific characteristics which are lag value of peer growth ( $PGRO_{-1}$ ), lag value of peer free cash flow ( $PFCF_{-1}$ ) and lag value of peer return ( $PRET_{-1}$ ) depicts significant impact. The peer growth ( $PGRO_{-1}$ ) and peer return ( $PRET_{-1}$ ) significantly positively impacts corporate investment policy at 1% level (0.0009 & 0.0047) respectively whereas; lag value of peer free cash flow ( $PFCF_{-1}$ ) is significant at 10% level (-0.0274). The negative relation can be because of the reason that if peer firms' holds excess cash with them , imitating them compels firms to hold cash too which may restrict investment. And the lag value of peer leverage ( $PLEV_{-1}$ ) insignificantly impacts corporate investment policy. On the whole, it can be concluded that change in the peer group characteristics compels individual firms to adjust their investment policy decisions accordingly.

To inspect correlated effect, two macro-economic indicators specifically stock market return (MR) and interest rate (IR) too depicted a highly significant impact 0.0320 and -0.2593 at 1% level (0.0000). These findings of the study affirm the significant impact of these macroeconomic factors on corporate investment policy decisions. This confirms that stock market performance as well as market timing guides firms concerning investment. On the other hand, change in interest rate inversely impact.

$H_3$  : There is impact of peers' on firms' investment policy.

TABLE 4.9: Empirical results of the GMM (fixed effect) for investment

$$Investment_{ijt} = \beta_0 + \beta_1 PINV_{-ijt} + \beta_2 Inv_{t-1} + \beta_3 Growth_{t-1} + \beta_4 Leverage_{t-1} + \beta_5 Free\ Cash\ Flow_{t-1} + \beta_6 Stock\ Return_{t-1} + \beta_7 PGrowth_{-ijt-1} + \beta_8 PLeverage_{-ijt-1} + \beta_9 PFree\ Cash\ Flow_{-ijt-1} + \beta_{10} PStock\ Return_{-ijt-1} + \beta_{11} MR_{-1} + \beta_{12} IR_{-1} + Year\ Fixed\ Effect_t + Industry\ Fixed\ Effect_j + Error\ Term \quad (12)$$

Variable	Coefficient	S.E	Prob.
PINV	0.1419	0.0175	0.0000***
Firm Specific Factors			
INV (-1)	-0.1203	-0.0245	0.0000***
GRO (-1)	0.0001	0.0021	0.9499
LEV (-1)	0.0157	0.0085	0.0657**
FCF (-1)	0.0071	0.0101	0.4832
RET (-1)	0.0015	0.0012	0.1894
Peer Firm Specific Factors			
PGRO (-1)	0.0009	0.0002	0.0000***
PLEV (-1)	-0.0114	0.014	0.4149
PFCF (-1)	-0.0274	0.0153	0.0730*
PRET (-1)	0.0047	0.0017	0.0064***
Macroeconomic Variables			
MR	0.032	0.0118	0.0068***
IR	-0.2593	0.0534	0.0000***
R-squared	0.4118		
J-statistic	5.8676		
Prob(J-statistic)	0.154		

INV= investment, PINV= peer investment, GRO= growth, LEV= leverage, FCF= free cash flow, RET= return, PGRO peer growth, PLEV= peer leverage, PFCF= peer free cash flow, PRET= peer return, MR= stock market return and IR= interest rate. Moreover, \* significance at a 10% level (two-tailed test), \*\* significance at a 5% level (two-tailed test), and \*\*\* significance at a 1% level (two-tailed test).

The study results showed the significant impact of peer effect on corporate investment policy ( $\beta = 0.1419$ ,  $p < 0.0000$ ). Hence, hypothesis H3 that there is impact of peers' on firms' investment policy is accepted.

### 4.3.2 Hypothesis Testing $H_4$

$H_4$  : Mimicking corporate financial policies also captures same financial performance.

#### 4.3.2.1 Empirical Results of Propensity Matching Score (PSM)

The current study results revealed the impact of peers' while deciding about corporate financial policies (leverage and investment). This compelled us to further explore the underlying motive of this mimicking behavior of them that is to restrain same financial performance or not. In this regard, whether firms' (small sized) who mimic financial policies of their large successful rivals intends to bring same financial performance or not, PSM was performed. The results of PSM are shown below in table no. 4.10.

On the basis of information provided in the above table no. 4.10 stated that small firms mimic their large firms in the industry. It can be apparently seen that three matching methods (Nearest Neighbour, Kernel & Radius) has been employed to analyze either smaller firms' also restrains same financial performance of those of their peers or not. The PSM scores revealed that smaller firms mimic their larger firms to capture same financial performance. As all the after treatment (ATT) t-ratios are  $>$  than 2.

In case of Nearest Neighbor method the after treatment (ATT) t-ratios for Return on assets (ROA), Return on Equity (ROE) and Stock Return (SR) are 15.42, 11.49 and 29.61 which remained significant. The difference between treated and control group which is for ROA, ROE and SR is very low (see table no. 4.10) which signifies that the difference between profitability of small sized and large sized firms is very low. This confirms that by mimicking financial policies they restrain same performance.

In case of Kernel method the ATT t-ratios of ROA, ROE and SR are 16.68, 12.55 and 30.04 respectively which are greater than 2 depicting minor difference (see table no. 4.10 ) in terms of performance for both groups (small versus large).

Hence, confirmed that smaller firms who adopted the behavior or who mimicked the larger firms' financial policies brings same financial performance.

In case of Radius method the after treatment (ATT) t-ratios are greater than 2. For instance, for ROA, ROE, and SR the t-ratios are significant i.e. 44.33, 61.18 and 33.15. In terms of performance, the difference between treated and non-treated control group is very low (see table no. 4.10). Again this method too confirms small sized firms mimic financial performance of their larger successful rivals.

TABLE 4.10: Empirical results of PSM

Nearest Neighbor						
Variable	Sample	Treated	Control	Difference	Std. Error	T-Stat
ROA	Unmatched	0.82379009	-0.015522005	0.097901013	0.003000802	32.62
	ATT	0.08237909	0.02407815	0.058308194	0.003781652	15.42
ROE	Unmatched	0.124407835	-0.227012491	0.351420326	0.012936785	27.16
	ATT	0.124407835	-0.110809256	0.23521709	0.020463591	11.49
SR	Unmatched	0.685880063	-0.122047118	0.807927181	0.02300644	35.12
	ATT	0.685880063	-0.111894967	0.79777503	0.026941097	29.61
Kernel						
Variable	Sample	Treated	Control	Difference	Std. Error	T-Stat
ROA	Unmatched	0.082379009	-0.015522005	0.097901013	0.003000802	32.62
	ATT	0.082379009	0.022611294	0.059767715	0.003583815	16.68
ROE	Unmatched	0.124407835	-0.227012491	0.351430626	0.01236785	27.16
	ATT	0.124407835	-0.110524819	0.234932654	0.018718308	12.55
SR	Unmatched	0.685880063	-0.122047118	0.807927181	0.0230644	35.12
	ATT	0.685880063	-0.104787326	0.790157639	0.02699755	30.04
Radius						
Variable	Sample	Treated	Control	Difference	Std. Error	T-Stat
ROA	Unmatched	0.082370009	-0.015522005	0.97901013	0.003000802	32.62
	ATT	0.082370009	-0.015522005	0.97901013	0.002208337	44.33
ROE	Unmatched	0.124407835	-0.227012491	0.351420326	0.012936785	27.16
	ATT	0.124407835	-0.227012491	0.351420326	0.005743987	61.18
SR	Unmatched	0.685880063	-0.122047118	0.807927181	0.02300644	35.12
	ATT	0.685880063	-0.122047118	0.807927181	0.024371296	33.15

$H_4$  : Mimicking corporate financial policies also captures same financial performance.

The study results showed that t-ratios for ROA, ROE and SR (after treatment) are significantly greater than 2 and in terms of performance both groups difference is very less as shown and discussed above. So, hypothesis no.4 that firms' who mimic corporate financial policies also captures same financial performance accepted.

### 4.3.3 Hypothesis Testing H<sub>5</sub>-H<sub>7</sub>

**H<sub>5</sub>:** Ownership concentration moderates the relation between peer effect and capital structure of the firm.

**H<sub>6</sub>:** Ownership concentration moderates the relation between peer effect and dividend policy of the firm.

**H<sub>7</sub>:** Ownership concentration moderates the relation between peer effect and investment policy of the firm.

### Empirical Results of Moderation Analysis

#### 4.3.3.1 Empirical Results of moderating role of peers' ownership concentration in relation between peers' capital structure and firm's capital structure

The moderating results of the ownership concentration in relation between peer effect and corporate leverage policy has been shown in table no. 4.11. The finding of the study depicted positive but insignificant ( $\beta = 0.0290$ ,  $p = 0.5706$ ) connection of ownership concentration. It indicates that in Pakistan the ownership concentration does not play any moderating role between proposed relation.

**H<sub>5</sub>:** Ownership concentration moderates the relation between peer effect and capital structure of the firm.

The moderating role of ownership concentration was not confirmed in relation between peer effect and corporate capital structure policy ( $\beta = 0.0290$ ,  $p > 0.10$ ). As the interaction term that is firm's leverage  $\times$  firm's ownership concentration did not moderate the proposed relation. Thus H<sub>5</sub> is rejected.

TABLE 4.11: Ownership concentration moderation in relation between peer firms' leverage and firms' leverage policy

$$\begin{aligned} \text{Leverage}_{ijt} = & \beta_0 + \beta_1 \text{PBook Lev}_{-ijt} + \beta_2 \text{Book Leverage}_{t-1} + \beta_3 \text{OC}_{-1} + \beta_4 \text{POC}_{-ijt} + \beta_5 \text{PBook Lev}_{-ijt} * \text{POC}_{-ijt} \\ & + \beta_6 \text{Book Leverage}_{t-1} * \text{OC}_{-1} + \beta_7 \text{SM}_{-1} + \beta_8 \text{IR}_{-1} + \text{Year Fixed Effect}_t + \text{Industry Fixed Effect}_j + \text{Error Term} \end{aligned} \quad (15)$$

---

Ownership Concentration Moderation in relation  
between Peer Firms' Leverage and Firms' Leverage Policy

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Variable	Coefficient	Std. Error	Prob.
C	-0.1683	0.1001	0.0930
PLEV	0.8252	0.1583	0.0000
LEV <sub>(-1)</sub>	0.4971	0.0356	0.0000
POC	0.5311	0.1571	0.0007
OC <sub>(-1)</sub>	0.0448	0.0307	0.1442
PLEV*POC	-0.9414	0.2543	0.0002
LEV <sub>(-1)</sub> *OC <sub>(-1)</sub>	0.029	0.0510	0.5706
R-squared	0.8119		
Adjusted R <sup>2</sup>	0.7921		
J-statistic	0.8558		
Prob(J-statistic)	0.3549		

---

PLEV= Peer Leverage, LEV (-1) = Lag value of firms' Leverage, POC= Peer firm Ownership Concentration, OC= Ownership concentration of firm, PLEV\*POC= Interaction term of Peer Leverage with Peer Ownership Concentration and LEV(-1)\*OC(-1)= Interaction term of lag value of firms' Leverage with Firms' Ownership Concentration.

#### 4.3.3.2 Empirical Results of moderating role of peers' ownership concentration in relation between peers' dividend policy and firm's dividend policy

The Moderating role of ownership concentration in relation between firms' dividend and peer firms' dividend policy is provided in table no. 4.12. The results of the current study confirmed negative as well as significant ( $\beta = -0.2463$ ,  $p = 0.00651$ ) connection of ownership concentration in relation between peer effect and corporate dividend policy.

TABLE 4.12: Ownership concentration moderation in relation between peer firms' dividend and firms' dividend policy

$$Dividend_{ijt} = \beta_0 + \beta_1 PDiv_{-ijt} + \beta_2 Div_{t-1} + \beta_3 OC_{-1} + \beta_4 POC_{-ijt} + \beta_5 PDiv_{-ijt} * POC_{-ijt} + \beta_6 Div_{t-1} * OC_{-1} + \beta_7 SM_{-1} + \beta_8 IR_{-1} + Year\ Fixed\ Effect_t + Industry\ Fixed\ Effect_j + Error\ Term \quad (18)$$

Ownership Concentration Moderation in relation  
between Firms' Dividend and Peer Firms' Dividend Policy

Variable	Coefficient	Std. Error	Prob.
C	0.1698	0.0515	0.0010
PDIV	0.0104	0.0144	0.4694
DIV <sub>(-1)</sub>	0.2557	0.0979	0.0091
POC	0.0789	0.0921	0.3917
OC <sub>(-1)</sub>	-0.0620	0.0207	0.0028
PDIV*POC	-0.0190	0.0223	0.3932
DIV <sub>(-1)</sub> *OC <sub>(-1)</sub>	-0.2463	0.1335	0.0651
R-squared	0.6012		
Adjusted R <sup>2</sup>	0.5899		
J-statistic	0.2928		
Prob(J-statistic)	0.5883		

PDIV= Peer Dividend, DIV<sub>(-1)</sub>= Lag value of firms' Dividend, POC= Peer firm Ownership Cocentration, OC= Ownership concentration of firm, PDIV\*POC= Interaction term of Peer Dividend with Peer Ownership Concentration and DIV<sub>(-1)</sub>\*OC<sub>(-1)</sub>= Interaction term of lag value of firms' Dividend with Firms' Ownership Concentration..

The results of the regression equation suggest that firms do not consider dividend policy of their peer, as PDIV is insignificant. While the lag value of dividend DIV<sub>(-1)</sub> is significant at 1% level that is ( $\beta = 0.2557$ ,  $p = 0.0091$ ). That shows that firms current dividend policy highly influenced by its previous year dividend payment. Direct effect of ownership concentration is negatively correlated with dividend payout ratio. Negative signs of ownership concentration depicts that highly ownership concentrated firms pay less dividend to their shareholders. The moderating effect of ownership concentration weekend the proposed relationship as the interaction term has the inverse relation (see table no. 4.12). This significant effect indicates that role of ownership concentration negatively moderates peer

effect and corporate dividend policy relation.

$H_6$  : Ownership concentration moderates the relation between peer effect and dividend policy of the firm.

The results of the study confirmed the moderating role of ownership concentration in relation between peer effect and corporate dividend policy. The results indicated significant P-value of firm's dividend  $\times$  firm's ownership concentration ( $\beta = -0.2463$ ,  $p < 0.10$ ). Thus  $H_6$  is accepted.

#### **4.3.3.3 Empirical Results of moderating role of peers' ownership concentration in relation between peers' investment policy and firm's investment policy**

The Moderating role of ownership concentration in relation between firms' investment and peer firms' investment policy is provided in table no. 4.13. The results of the current study confirmed positive as well insignificant ( $\beta = 0.2105$ ,  $p = 0.1243$ ) connection of ownership concentration in relation between peer effect and corporate investment policy. It shows that ownership concentration of Pakistani firms' do not play moderating role in above mentioned relation.

$H_7$  : Ownership concentration moderates the relation between peer effect and investment policy of the firm.

Peers' ownership concentration did not moderate the above mentioned relationship. The results of study confirmed the insignificant role of peers' ownership concentration in relation between peers' investment  $\times$  peers' ownership concentration ( $\beta = 0.2105$ ,  $p > 0.10$ ). As it did not moderate proposed relation hence,  $H_7$  is rejected.

TABLE 4.13: Ownership concentration moderation in relation between peer firms' investment and firms' investment policy

$$Investment_{ijt} = \beta_0 + \beta_1 PINV_{-ijt} + \beta_2 Inv_{t-1} + \beta_3 OC_{-1} + \beta_4 POC_{-ijt} + \beta_5 PINV_{-ijt} * POC_{-ijt} + \beta_6 Inv_{t-1} * OC_{-1} + \beta_7 SM_{-1} + \beta_8 IR_{-1} + Year\ Fixed\ Effect_t + Industry\ Fixed\ Effect_j + Error\ Term \quad (21)$$

Ownership Concentration Moderation in relation  
between Peer Firms' Investment and Firms' Investment Policy

Variable	Coefficient	Std. Error	Prob.
C	0.0451	0.0294	0.1249
PINV	1.2576	0.0796	0.0000
INV <sub>(-1)</sub>	-0.2563	0.0875	0.0034
POC	0.1115	0.0299	0.0002
OC <sub>(-1)</sub>	0.0911	0.0547	0.0963
PINV*POC	-1.7269	0.1288	0.0000
INV <sub>(-1)</sub> *OC <sub>(-1)</sub>	0.2105	0.1369	0.1243
R-squared	0.4929		
Adjusted $R^2$	0.4068		
J-statistic	1.5137		
Prob(J-statistic)	0.2185		

PINV= Peer Investment, INV<sub>(-1)</sub>= Lag value of firms' Investment, POC= Peer firm Ownership Concentration, OC= Ownership concentration of firm, PINV\*POC= Interaction term of Peer Investment with Peer Ownership Concentration and INV<sub>(-1)</sub>\*OC<sub>(-1)</sub>= Interaction term of lag value of firms' Investment with Firms' Ownership Concentration.

## 4.4 Summary of Accepted/Rejected Hypotheses

TABLE 4.14: Summary of Accepted/Rejected Hypotheses

S/No.	Hypotheses	Results
$H_1$ :	There is impact of peers' on firms' capital structure.	Accepted
$H_2$ :	There is impact of peers' on firms' dividend policy.	Rejected
$H_3$ :	There is impact of peers' on firms' investment policy.	Accepted
$H_4$ :	Mimicking corporate financial policies also captures same financial performance.	Accepted
$H_5$ :	Ownership concentration moderates the relation between peer effect and capital structure of the firm.	Rejected
$H_6$ :	Ownership concentration moderates the relation between peer effect and dividend policy of the firm.	Accepted
$H_7$ :	Ownership concentration moderates the relation between peer effect and investment policy of the firm.	Rejected

# Chapter 5

## Summary, Conclusion and Recommendations

### 5.1 Summary and Discussion

#### 5.1.1 Summary & Discussion of Research Question 1

##### *Does peer group influences corporate financial decision making?*

To answer above mentioned research question that is to find out the connection between peer group effect and corporate financial decision making three hypotheses have been formulated  $H_1$ ,  $H_2$  and  $H_3$ . The results of the current study confirmed the impact of peer group on two financial policies (capital structure & investment) thus hypotheses  $H_1$  and  $H_3$  are accepted. However, the current study could not find significant impact of peers in order to determine firms' dividend policy, so hypothesis  $H_2$  rejected.

##### *Discussion of Corporate Leverage and Investment Policy*

The results of the study confirmed peers' as an important determinant for devising capital structure as well as investment policy of the firm. The coefficient of peer firm leverage ratio ( $\beta = 0.8860$ ,  $p < 0.00$ ) is greater than any other firm specific or industry specific coefficients of factors (see table no 4.7). This concludes that behavior of peers' significantly impacts more as compared to any firm or industry

specific factors. Similarly, the greater coefficient of peer firm investment policy that is  $\beta = 0.1419$ ,  $p < 0.0000$  significant at 1% level is also greater than any other firm specific or industry specific coefficient (see table no. 4.9) further affirm peer behavior's significant impact. The results of the study also confirm Shleifer and Vishny (1992) argument relating to industry equilibrium.

These findings of the current study are consistent with the results of previous studies. Various researchers' addressed this phenomenon in different perspectives and found effect of peer group on corporate financial decision making. In this regard, Leary and Roberts (2014) suggested that peer effect plays a very significant role in determining the financial policies of firms specifically leverage policy. In addition to these studies other empirical evidences too suggest important role played by peers' concerning making financial decisions of firms (Graham & Harvey, 2001). Furthermore, it was confirmed that average leverage ratios of industry are important determinant of firms' capital structure (Mackay & Phillips, 2005).

The extant literature of corporate finance endorses peer effect. For instance, Leary and Roberts (2014) argued and confirmed the significant role of peers' who greatly effect corporate leverage policies. In the similar vein, Chen and Ma (2017) suggested the great impact of peers' while taking corporate decisions pertaining to investment. Adding more, Foucault and Fresard (2014) suggested that firms' investment policy greatly set keeping an eye on stock prices of their peers. Similarly, Patnam (2011) determined that firms' decisions relating to compensation, investment as well expenditure are greatly influenced by corporate network peers. In the context of Pakistan, the current study findings suggest corporate leverage as well as investment managers' also rely on the peers' decisions and actions in order to make their own leverage and investment policies.

Numerous compelling reasons support the findings of the current study. To make it clear and more convincing, mimicking behavior actually initiate from designs of rational herding (Devenow & Welch, 1996). Related to this, Zeckhauser, Patel and Hendricks (1991) suggested that free-riding concept relating to information acquisition may engage corporate managers in herding behaviors to set financial policies. It has been theoretically proven by past researchers (Banerjee, 1992;

Conlisk, 1980). Several other studies conducted in the past support this version that firms do not devise policies in isolation; they rely on financial information and decisions of their peers' in order to make their own financial decisions (Clark & Loheac, 2007; Guilding, 1999; Moon & Bates, 1993). Furthermore, it is also confirmed recently that managers' look for information possessed by their peers in the industry to make their own decisions (Chen & Ma, 2017; Leary & Roberts, 2014). Thus utilization of peers' information in setting one's own capital structure as well as investment decision confirms existence of peer effect. Further supported and added that diverse economic forces require firms to behave in accordance with their peers (Popadak, 2012) and these forces might include peer effect as an addition to other forces.

As discussed earlier, this mimicking behavior can be an attempt to avoid destructive cost associated with intense competition. When firms' perceive that cost associated with these destructive actions is bitter enough to taste, then highly levered firms try to mimic the leverage policy of less levered rivals (Bolton & Scharfstein, 1990). Similarly, high levered firms' in periods of industry decline might under invest as a result loses market shares to less levered opponents (Chevalier & Scharfstein, 1996). This loss may push firms' to imitate peers' conventional guidelines. Furthermore, when there are greater network ties and social connection among firms they are better informed about each other which assist in imitation (Gulati, Nohria, & Zaheer, 2000). Along with this, it has been also found that interlocking directors are too source of imitation among firms (Davis, 1991; Haunschild, 1993). Besides this, managers attempts to enjoy reputational image. This can be another reason for this mimicking behavior. As per Scharfstein and Stein (1990) model connected signals concerning investment opportunities are received by investment managers' who are of high quality whereas low quality investment managers' receives independent signals. Thus, low quality managers' in order to be perceived as high quality manager mimic the choices of others' investment. In other words, managers' imitate the actions/decisions of others' as an attempt to avoid negative reputation. By doing this they may signal others' about their own quality

as superior. For example, to enhance managers' status and in order to get favorable evaluation of themselves from others', they may go against personal/private misleading information so imitate others' (Palley, 1995).

Lastly, the results of our study depicted that macro-economic factor such as interest rate ( $\beta = -1.8520$ ,  $p < 0.0000$ ) impacts firms' leverage policy. These correlated effects significantly influenced leverage policy of the firms. These results are consistent with previous studies (Bas, Muradoglu & Phylaktis, 2009; Chen et al., 2005; Eldomiaty & Tarek, 2007; Giannetti, 2003). This reveals that increase and decrease in the interest rate inversely effect the corporate leverage policy. Increase in cost of debt restricts firms' to utilize equity while decrease in rate of interest can compel them to acquire more debts. Whereas, macro-economic factor that is stock market return (MR) found to be insignificant having no impact.

### ***Discussion of Corporate Dividend Policy***

The findings of current study provide evidence that in case of dividend policy peer effect does not operate. The results revealed positive but insignificant connection between firms' dividend and peer firms dividend policy ( $\beta = 0.0063$ ,  $p > 0.10$ ). It signifies that in Pakistan, the dividend declaration as well payment decisions are not connected and aligned with peers' dividend declaration and payment decisions. These results are opposing to the results of Popadak (2012), Leary and Robert (2014) and Chen and Ma (2017) who argued and found that firms' financial decisions moves in accordance with industry financial decisions.

These findings can be because of many different reasons. Firstly, in Pakistan the overall dividend paying trend is inconsistent. From total of 3130 observations of current study, only 1383 observations paid dividend which contributes very less in the total percentage. As it has been also reported by Ahmad and Javid (2009) that firms' listed on Karachi Stock Exchange are not smooth enough to pay dividend, only few firms pay dividend consistently. Moreover, they affirmed that dividend paying firms' target payout ratio lie between 25%-38.5% which is very low.

Secondly, other most important reasons for getting insignificant results can be proxy measure used to determine dividend that is dividend payout ratio (Dividend/EAIT). Since, many firms in the chosen sample reflected negative earnings

after interest and tax (EAIT) values which may cause to yield insignificant impact. In addition to this, during data analysis the firms' whose earnings were negative and/or whose dividend payment ratio was not consistent were too not excluded from the analysis, thus contributed insignificant results. It was also suggested by other researchers to exclude them from study, for example Ahmed and Javid, (2009). Furthermore, the current study analysis was carried out on the data periods 2005-2015. In 2011 the Government of Pakistan imposed tax on capital gain. It means two periods one before imposition of capital gain tax period and after imposition of capital gain tax period which was not segregated during analysis, hence attributed insignificant results.

Moreover, Pakistani market is inefficient which contributes in yielding this type of results. In this connection Pakistani market has been declared as "weak form inefficient" (Sultan, Madah & Khalid (2013) where only historical prices or trends are being considered to set the prices of securities. Therefore, Random Walk Hypothesis does not prevail in Pakistani stock exchange. Moreover, Sultan, Madah and Khalid (2013) made comparison of Pakistan stock exchange with Kuwait stock exchange and found that both countries markets are weak form inefficient who just rely on historical data.

Furthermore, Pakistan is an emerging country; its bond market is still underdeveloped. Firms do not move towards stock market for the debt financing which is essential component for firms' to meet their financial needs eventually firms' heavily rely on their internal source of financing thus do not pay dividend. In this regard, Khalid (2006) identified micro-economic as well as macro-economic prerequisites for market to develop. Regrettably, Pakistan is deficient in both micro as well macro-economic conditions. Thus its market is still not comparatively developed.

In addition to these, the current study utilized traditional measures of dividend which are profitability, growth, risk, leverage and free cash flow. After more than fifty years of seminal work of Modigliani and Miller as well hundreds of published research papers on dividend policy, yet the relation of these determinants with dividend is unclear. This can be another reason of getting contradictory results.

Provided “theories are conditionally not general” (Myers, 2003) means that they give better results in some conditions as compared to others. To augment this, these theories do not serve as standard accounting definitions (Frank & Goyal, 2009) thus there remains room for difference, contradiction in some cases.

Finally, the current study utilized two macro-economic variables to inspect correlated effects such as stock market return as well interest rate which impact all the firms revealing that correlated effects significantly determined firms’ dividend policy. These results are consistent with the studies of Chen et al., 2005 and Ofori-Sasu et al., 2017 which too confirms that macro-economic variables impact dividend policy. For instance, the study results revealed negative significant relation ( $\beta = -0.1480$ ,  $p < 0.0000$ ) between interest rate and dividend. This indicates that higher the interest rate lesser will be the dividend payout ratio. As this decreases free cash flow which ultimately restricts firms to pay more dividend.

Relating to positive as well as significant connection ( $\beta = 0.0653$ ,  $p < 0.10$ ) with stock market return, dividend payment itself signals to the market that firm has enough free cash flow to meet their obligations as well returns to their shareholders’. This might attract potential as well existing shareholders’ by gaining their trust which ultimately increases the demand of shares into the market and consequently stock market return. Conversely, not paying dividend signals that firms have growth opportunities so they do not pay or pay very little dividend. This increases the market price of the firms into the market. Thus, stock market return has positive impact.

So, it can be concluded that in Pakistan, peer effect with respect to dividend policy is not present. Here corporate managers’ make dividend decisions independently which is equivalent to having no peer effect. In Pakistan, dividend policy does not vary with the peer group characteristics having no contextual effect as well. In addition to this, the study also found no evidence regarding the existence of common effect as corporate managers’ independently alters their dividend policies irrespective of this concern that when and why peers’ alters their dividend policies.

### 5.1.2 Summary & Discussion of Research Question 2

*Do firms' mimic financial policies to generate same financial performance?*

To investigate and find out answer of aforesaid research question, one hypothesis i.e.  $H_4$  has been developed. The results of the study confirmed that firms' underlying motive to mimic others (peers) is also to bring same financial performance of those of their peers. Hence,  $H_4$  accepted.

On the basis of information contained in the above table stated that small firms mimic their large firms in the industry. As the study made a hypothesis that small firms follow their peer firms and by adopting the same financial policies they achieve their goals by maximizing their profits. In all of the measurements of performance taken in this study have been proven that through mimicking small firms achieve their goals. To support this, as imitating others can help firms to tackle bounded rationality problem of their managers, meanwhile it helps in making complex decisions, taking prompt strategic actions by enhancing its access to resources consequently boosts performance (Meyer & Rowan, 1977; Peteraf & Shanley, 1997). These results contributed in understanding the underlying motive of smaller firms' imitation. These small firms rather than following their other small rivals, imitate large established firms (Haunschild & Miner, 1997). Their social prominence, visibility and high success rates compels smaller firms to imitate them. Doing so firms' try to seek legitimizing effect associated with imitating larger profitable firms (Haveman, 1993) who makes high returns on equity (Haunschild & Miner, 1997).

Here, difference is taken as the coefficient and value of t-stat has been calculated by dividing the value of difference with standard errors. Return on assets (ROA), Return on Equity (ROE) and Stock Return (SR) in case of nearest neighbor, kernel and radius remain significant and difference between treated and control group remain very less which signify that in terms of performance there is no major difference between the small and large firms or firms which adopted the behavior

and mimic the financial policies of large firms. These findings of the study contributed much in understanding studies that inspected performance implications of imitation. For example, current study findings are consistent with previous research that imitation also captures same financial performance of peers. In the similar line, researchers' confirmed that as imitation reduces cost, competitive risk and increases acceptability of firms' actions hence advantageous for performance (Miller & Chen, 1996).

As far as minimal difference in the financial performance of small firms with large firms are concerned, small firms can have different advantages associated with designing significant performance incentives for their employees. These firms can afford to recognize and reward individual contributions as it is less costly for them as compared to large firms (Garen, 1985; Zenger, 1994). Small firms are better able in linking pay with performance (Bishop, 1987; Rasmusen & Zenger, 1990); these powerful incentives motivate employees' to exert high efforts (Holmstrom, 1989) which in turn enhance performance as well profitability.

However, current study results did not support certain studies conducted in the past that argued and confirmed negative impact of imitation. According to them imitation causes to increase competition among firms' this led average performance (Baum & Mezias, 1992; Peteraf, 1993). This might be because of environmental factors as firms are more likely to be influenced by them (Gnyawali & Fogel, 1994).

### 5.1.3 Summary & Discussion of Research Question 3

*Does ownership concentration moderate the relation between peer effect and corporate financial policies decisions?*

Various hypotheses were formulated to check the moderating role of ownership concentration and to answer above stated research question such as  $H_5$ ,  $H_6$  and  $H_7$ . The results revealed insignificant P value depicting no moderating role of ownership concentration in relation between all three financial policies (capital structure, dividend and investment), hence  $H_5$ ,  $H_6$  and  $H_7$  are rejected.

*Discussion of Moderating role of Ownership Concentration in relation between Peer effect and Corporate Leverage and Investment Policies*

Contrary to expectations all moderation hypotheses rejected confirming no moderating role of ownership concentration in proposed relation. There can be a lot of reasons for rejection of moderation hypotheses. First most important reason of rejection is difference in the context. Differences in the context or contextual setting are very much important to consider while analyzing/interpreting the results. Ownership concentration studies have been conducted in different contexts/countries which can have different results and implications. For example, the studies that have been conducted in United Kingdom (UK) probably differ wholly or partly from studies conducted in United States (US) and from Japan (Gedajlovic & Shapiro, 2002; Leech & Leahy, 1991). As data gathered for investigation makes the difference. Hence, it would not be wise to assume that "one size would be fit for all" as cultural/contextual dissimilarities exist throughout the world (Hofstede, 1984). So apparently it seems underlying reason for hypotheses rejection.

In addition to this in countries, where legal system protects and discipline corporate managers' (Overland, Mavruk & Sjogren, 2012-), they can excel their duties to strengthen the relation between peer effect and corporate financial policies to add value to the firms. In contrast, where legal protection is low high ownership concentration would not help in adding value to firm as gains from better monitoring over weigh private benefits extraction (Overland, Mavruk & Sjogren, 2012), so cannot help in moderating the proposed relation, neither attempts to strengthen it nor weaken it.

Furthermore, choice of measures of ownership concentration also makes difference to large extent. Different researchers used different proxy measures for ownership concentration. For example, some researchers took shares held by largest shareholders' (Thomsen & Pedersen, 2000) as a proxy measure for ownership concentration. Some utilized number of largest shareholders who held combined shares (Demsetz & Villalonga, 2001). Few researchers took shareholders who own at least 5% of total number of common stock of a firm (Nguyen, Locke & Reddy,

2015). Some used other concentration ownership measures for example, Herfindahl indices (Leech & Leahy, 1991) etc. The findings of these studies who utilized different proxy measures also differ. In accordance with this, the current study utilized the combined shares held by top five shareholders' which is another proxy measure. Hence, it can be one more reason if current study got results contrary to expectations. For better analysis, evaluation as well as interpretation of moderating role of ownership concentration, the extant measures in-depth understanding is required.

High OC leads to conflict among shareholders which do not allow getting the desired benefits of concentrated ownership. As mostly firms of Pakistan industry are closely netted and these major shareholders' holds all the discretionary powers, they prefer to take all those decisions which personally benefit them not other minority shareholders. This further boosts to conflicts among them thus bother less to decide about either to mimic or not to mimic peers' financial decisions. Consequently neither moderates positively nor negatively in the aforementioned relations.

#### ***Discussion of Moderating role of Ownership Concentration in relation between Peer effect and Corporate Dividend Policy***

The findings of the study suggested negative as well as significant role played by ownership concentration of Pakistani firms. The reason of this negative moderation of ownership concentration can be because of the following reasons. First, a company dividend policy as well as its financial position decides about the dividend declaration. Dividend declaration is entirely the discretion of board of directors (Bushra, 2012), as it is not the obligation of company to pay dividend at any cost and in every condition. Discretionary decision regarding dividend policy may cause the agency problems as managers are often evaluated by outsiders on the base of annual sales growth (Bushra, 2012). So, they prefer to avoid dividend payment and invest that amount in low-cost capital projects. Thus ownership concentration negatively moderates the proposed relation.

Secondly, the corporate governance issues due to ownership structure in Pakistan, creates agency problems, which ultimately disturb financial market. Mostly Pakistani firms have closely netted ownership, cause to serve major shareholders and ignore the rights of minority shareholders. Findings of Mirza and Afza (2010) concluded that family owned firms and firms where large portion of shares held by management, usually, has negative relation with dividend payout ratio. Thus this composition of owners' in Pakistani firms' negatively moderates the relation. Furthermore, insider owners remunerate themselves with heavy pays, bonuses, incentives, which lead to lower the earnings to pay dividend (Afza & Mirza, 2011). Like Jensen (1986), highlighted another reason that managers prefer to keep cash in reserve to meet the investment requirement. This element of ownership concentration disturbs dividend payment behavior in Pakistani capital market. Results of the study are similar with finding of Ahmad and Javid (2010) and Mirza and Afza (2010). Therefore, these all studies support the negative moderating role of ownership concentration.

## **5.2 Conclusion**

A certain change in an individuals' behavior majorly because of its peers is referred to as peer effect. Exploring and accepting this observable fact from corporate world's standpoint was really important as corporate world is appropriate area for investigating such effects. In general corporate financial decisions directly effect the development of an economy thus keeping in view its significance the role of peers' cannot be ignored. As corporate financial policy decisions depend upon the behavior (actions) of peer group. In other words peer firms play a significant role in shaping the corporate financial policies. Thus previous literature presents evidence that peer firms' behavior matters a lot in determining financial policies for firms (Bradshaw et al., 2010; Chen & Ma, 2017; Foucault & Fresard, 2014; Leary & Roberts, 2014; Tom & Walter, 2011).

The extant literature of corporate finance endorsed the significant role of peers', however theoretically it is really hard to spot peer effect because of reflection

problem (Manski, 1993). Because of this endogeneity it is hard to know whether peers' actions or characteristics contributed to change firms' actions or decisions. Besides the problems associated with peer identification as well selection who imitates whom remained the matter of greater concern. This compelled researchers' of various fields of finance and economics to investigate the impact of peer group on corporate finance decisions. The current thesis was majorly inspired from the research work of Chen and Ma (2017), Leary and Roberts (2014) and Popadak (2012). The thesis utilized almost same methodology as well as characteristics of peer group despite using equity shocks to address endogeneity. To address endogeneity instead of equity shocks, the study used generalized method of moments (GMM). However, the findings of current study to a limited extent (dividend policy) are different.

The findings of the current study depict ample support for greater part of hypotheses. It confirms impact of peer firms' on corporate leverage. This signifies that firm leverage policy is set keeping in view peer firms' leverage policy. Empirical results relating to relation between peer group effect and corporate investment policy indicates significantly positive which implies that corporate investment policies are also determined in accordance with the peers' investment policies. These results are consistent with the findings of past studies (Chen & Ma, 2017, Leary & Roberts, 2014 etc) where researchers' addressed and explored this connection from different perspectives. The current study results signify that in the context of Pakistan corporate managers' do not make decisions pertaining to leverage and investment policy in isolation. They rely on the information and decisions of their peer group.

Relating to dividend policy of the firm is concerned. The results revealed insignificant relation between peers' dividend policy and firms' dividend policy decisions. In this scenario it indicates non-existence of peer effect in Pakistan where dividend declaration and payment decisions are not aligned with those of their peers. The results are not as per the expectations and found to be inconsistent with the previously conducted research by Popadak (2012). In Pakistan, general trend relating to dividend payment is inconsistent. Since it has been concluded that only few

listed firms on the Karachi Stock Exchange (KSE) pay dividend on consistent basis and target payout ratio is very low as it ranges from 25% to 38% approximately (Ahmad & Javid, 2009).

After confirming the impact of peers' on corporate financial policies specifically on leverage and investment, the study captured the underlying motive of this mimicking behavior. The study results affirmed that firms (small) who mimic their peers (large) also bring same financial performance for them. The measurement of performance taken in current study proved this mimicking goal of small firms. It mean that small firms of Pakistan mimic their larger rivals (peers) to restrain almost same financial performance as there is minor difference resulted in terms of performance for smaller and larger firms. Seeing that imitation reduces cost as well competitive pressure (Miller & Chen, 1996) so Pakistani firms' too find it advantageous for enhancing performance. Moreover, small firms comparatively affords to reward individual contributions (Zenger, 1994) which is powerful inducement for workers' to utilize their fullest potential (Holmstrom, 1989) as a result boosts performance.

Relating to moderation role of ownership concentration in relation between peer effect and financial policies (capital structure, dividend and investment), contrary to expectations ownership concentration did not moderate the peer effect-leverage policy as well as peer effect-investment policy relation. It signifies that Pakistan is an emerging country; the study conducted in the context of Pakistan can have different findings as well as implications from studies that have been conducted in developed nations. Since, cultural dissimilarities exist all the way through the world (Hofstede, 1984). Hence it seems apparent reason for contradictory results. Additionally, Pakistan industry firms' are closely netted where major shareholders' caught up in conflict with minority shareholders' (Bushra, 2012) while extracting personal benefits which give rise to conflicts. Thus ownership concentration neither positively nor negatively moderates aforesaid relations.

Lastly, analogous to expectations, the moderating role of ownership concentration has been confirmed in relation between peer effect and dividend policy. Theoretically, it was assumed that higher the ownership concentration in Pakistani firms'

the greater are the chances that ownership decisions' pertaining to leverage, dividend and investment would lean towards one side that is positive. On strong theoretical grounds it was assumed that ownership concentration facilitates the mimicking behavior of firms while devising their own financial policy decisions which turns false. The negative moderating role was confirmed in case of dividend policy only. Large shareholders' discretionary powers (Bushra, 2012) may compel them to ignore dividend payment practices of their peers' thus weaken proposed relation.

## **5.3 Theoretical and Practical Implications**

### **5.3.1 Theoretical Implications**

In emerging countries like Pakistan, only little number of studies theoretically as well as empirically explored the role of peer group on corporate financial policies. The findings of current study contribute to the extant literature about peer effect in the industry of Pakistan where there is lack of knowledge as well understanding regarding this phenomenon. The results of current study will facilitate industrial management to enhance positive impact of mimicking behavior at the same time reducing its negative impact for overall expansion and growth of Pakistan economy. Moreover, to large extent the current study provides significant implications for Pakistan industry. The important finding of the study is that peer effect not only exists in developed countries its existence to great extent are also present in emerging country like Pakistan. Therefore, managers' of corporate sector can adopt a universal approach in handling issues confronted by them. Moreover, corporate managers' of Pakistan can get advantage associated with the best prevailed practices which are being followed by others in the world.

### **5.3.2 Practical Implications**

The current study highlighted the underlying objective of mimicking behavior of Pakistani small sized firms. These firms' set their financial policies keeping in view

the decisions and actions of their peers' which brought favorable outcomes for them in terms of financial performance. These results can help corporate managers in understanding whom it is beneficial to imitate and which decisions and/or actions to imitate to get favorable results.

Furthermore, the useful results of the current study laid the foundations for corporate managers in understanding underlying mechanism of this mimicking behavior in the context of Pakistan. This can assist them in practically advancing their operations to cash associated benefits.

## **5.4 Limitations & Future Directions**

### **5.4.1 Limitations**

Despite fruitful findings of the study there exist few limitations as well. First is issue of generalizability. The results of the study could not be generalized for financial sector of Pakistan as study utilized data relating to non-financial sector of Pakistani firms. Moreover, the study has been conducted in Pakistani context; hence results could not be generalized to non-Pakistani contexts. Moreover, non-financial sector of Pakistani firms' were taken to explore behavior of peer firms'. Other sectors including financial sector of Pakistan needs to be considered also as it may have different mechanism, findings as well managerial implications.

The current study encountered different data related issues, measures problems. For instance, measurement of dividend has been taken as dividend to payout ratio which was calculated as dividend divided by earning after interest and tax (DIV/EAIT). Some firms' were with negative earning after interest and tax which effected proposed relations. Moreover, the current study included all observations (dividend paying as well as non-paying observations) to check the impact of peers on dividend policy which seems problematic. Additionally, the study also could not segregate "before and after capital gain imposition tax" periods, as both periods have differential impact, which were ignored.

In addition to this, the current study relied on secondary data to inspect the behavior of peer firms'. Determining today's behavior on the basis of past information seems irrational. Since, the study did not intend to measure past trend of peer effect on corporate financial policies of Pakistan.

#### **5.4.2 Future Directions**

- To deal with the issue of generalizability, the scope of study needs to be widened. For example, future researchers' by incorporating other sectors' including financial sector of Pakistan can comprehensively analyze peer effect and doing so would make the study more worth full. In addition to this, researchers' can conduct comparative analysis of studies conducted in developed countries and emerging countries to explore the similarities and differences in relation to role of peer group to get more useful insights.
- Relating to proxy measure of dividend, the researchers' might use dividend yields (DPS/Price per Share) instead of using dividend payout ratio to get better results. Moreover, firms with negative earnings and firms that do not have consistent dividend payments during the sample period can be excluded to find better results. Additionally, researchers should segregate two periods that is "before capital gain tax imposition" and "after imposition of capital gain tax" period to appropriately examine the behavior of dividend in Pakistan.
- Similarly, the study utilized the percentage of shares held by top five shareholders of total shares as a measure of ownership concentration which contributed to yield useful results in the context of Pakistan. So, researchers' need to use other proxy measures (multiple) of ownership concentration to actually know differences captured by using different measures in Pakistani context.
- The behavioral component could be dealt more appropriately by utilizing primary data; the future researchers' can enrich their studies by using both

primary as well as secondary data. In short, for greater inspection & understanding of peers' behavior the use of primary data could be more helpful. Doing this will enable them in capturing real differences that might be left by relying on only secondary data.

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# Appendix

## Nearest Neighbor 5

```
.psmatch2 road1 tang size gro fcf inve, n(5) out (roa)
```

Probit regression

Number of obs = 3130

LR chi2 (5) = 487.19

Prob > chi2 = 0.0000

Pseudo R2 = 0.1124

Log likelihood = -1924.4816

road1	Coef.	Std. Err.	z	P>  z	[95% Conf	Interval]
tang	-0.643	0.1101	-5.84	0.0000	-0.8589532	-0.428
size	0.1073	0.0149	7.2	0.0000	0.0780776	0.1365
gro	0.1987	0.0584	3.4	0.0010	0.0841928	0.3133
fcf	4.4467	0.2688	16.54	0.0000	3.919881	6.0161
inve	5.2989	0.3659	14.48	0.0000	4.581794	6.0161
_cons	-1.639	0.2267	-7.23	0.0000	-2.083198	-1.194

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
roa	Unmatched	0.0824	-0.015	0.0979	0.0030008	32.62
	ATT	0.0824	0.0241	0.0583	0.00378165	15.42

Note: S.E. does not take into account that the propensity score is estimated.

```
.psmatch2 roed1 tang size gro fcf inve, n(5) out (roe)
Probit regression
Number of obs = 3130
LR chi2 (5) = 305.40
Prob > chi2 = 0.0000
Pseudo R2 = 0.0734
Log likelihood = -1927.0906
```

roed1	Coef.	Std. Err.	z	P >  z	[95% Conf	Interval]
tang	-0.27831	0.107346	-2.59	0.01	-0.04887249	-0.0679154
size	0.067615	0.014789	4.57	0.000	0.0386298	0.0966
gro	0.161385	0.057327	2.82	0.005	0.0490251	0.2737439
fcf	3.767872	0.265475	14.19	0.000	3.247551	4.288193
inve	4.197029	0.359327	11.68	0.000	3.492761	4.901297
cons	-0.77865	0.223836	-3.48	0.001	-1.217362	-0.3399397

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
Roe	Unmatched	0.124408	-0.22701	0.35142	0.012936785	27.16
	ATT	0.124408	-0.11081	0.235217	0.020463591	11.49

Note: S.E. does not take into account that the propensity score is estimated.

```
.psmatch2 srd1 tang size gro fcf inve, n(5) out (sr)
Probit regression
Number of obs = 3130
LR chi2 (5) = 41.30
Prob > chi2 = 0.0000
Pseudo R2 = 0.0098
Log likelihood = -2080.913
```

srd1	Coef.	Std. Err.	z	P >  z	[95% Conf	Interval]
tang	-0.007	0.1054	-0.07	0.944	-0.2140777	0.1991739
size	0.0169	0.0143	1.18	0.238	-0.0111808	0.0450329
gro	0.2235	0.0563	4.18	0	0.1248921	0.3454928
fcf	0.946	0.233	4.06	0	0.4893787	1.402679
inve	0.7745	0.3303	2.35	0.019	0.1271655	1.421794
_cons	-0.578	0.8187	-2.64	0.008	-1.007195	-0.1497309

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
Sr	Unmatched	0.6859	-0.122	0.8079	0.02300644	35.12
	ATT	0.6859	-0.112	0.7978	0.026941097	29.61

Note: S.E. does not take into account that the propensity score is estimated.

**Kernel Matching**

```
.psmatch2 road1 tang mb size gro risk fcf inve oc, kernel out (roa)
Probit regression                               Number of obs = 3130
                                                LR chi2 (5) = 489.03
                                                Prob > chi2 = 0.0000
Log likelihood = -2923.5656                    Pseudo R2 = 0.1128
```

road1	Coef.	Std. Err.	z	P>  z	[95% Conf	Interval]
tang	-0.653	0.1123	-5.81	0	-0.873	-0.432809
mb	-0.02	0.0374	-0.52	0.601	-0.093	0.0536833
size	0.1078	0.0149	7.23	0	0.0786	0.1370131
gro	0.1985	0.0585	3.39	0.001	0.0838	0.31318
risk	0.0274	0.0415	0.66	0.509	-0.054	0.1086822
fcf	4.4669	0.2753	16.23	0	3.9274	5.006381
inve	5.3321	0.375	14.22	0	4.5971	6.067213
oc	-0.12	0.1194	-1	0.319	-0.354	0.1153855
_cons	-1.551	0.2401	-6.46	0	-2.022	-1.080652

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
roa	Unmatched	0.0824	-0.155	0.0979	0.003	32.62
	ATT	0.0824	0.0226	0.0598	0.0036	16.68

Note: S.E. does not take into account that the propensity score is estimated.

.psmatch2 roed1 tang mb size gro risk fcf inve oc, kernel out (roe)

Probit regression

Number of obs = 3130

LR chi2 (5) = 311.53

Prob > chi2 = 0.0000

Log likelihood = -1924.0244

Pseudo R2 = 0.0749

roed1	Coef.	Std. Err.	z	P>  z	[95% Conf	Interval]
tang	-0.32	0.1094	-2.92	0.003	-0.534	-0.1052473
mb	-0.088	0.0368	-2.4	0.016	-0.16	-0.0163276
size	0.068	0.0148	4.6	0	0.039	0.0969907
gro	0.1608	0.0574	2.8	0.005	0.0482	0.273325
risk	0.0161	0.0413	0.39	0.697	-0.065	0.0971471
fcf	3.8876	0.2713	14.33	0	3.3558	4.419325
inve	4.3631	0.3672	11.88	0	3.6433	5.082817
oc	-0.024	0.1201	-0.2	0.84	-0.26	0.2112088
_cons	-0.668	0.2381	-2.8	0.0005	-1.134	-0.2008539

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
Roe	Unmatched	0.1244	-0.227	0.3514	0.0129	27.16
	ATT	0.1244	-0.111	0.2349	0.0187	12.55

Note: S.E. does not take into account that the propensity score is estimated.

.psmatch2 srd1 tang mb size gro risk fcf inve oc, kernel out (sr)

Probit regression

Number of obs = 3130

LR chi2 (5) = 86.46

Prob > chi2 = 0.0000

Log likelihood = -2058.3345

Pseudo R2 = 0.0206

srd1	Coef.	Std. Err.	z	P>  z	[95% Conf	Interval]
tang	0.1168	0.1077	1.08	0.278	-0.094	0.3279443
mb	0.2274	0.0346	6.58	0	0.1596	0.2951284
size	0.0148	0.0144	1.03	0.305	-0.013	0.0430719
gro	0.2417	0.0565	4.28	0	0.1308	0.352421
risk	0.0126	0.0403	0.31	0.754	-0.066	0.0916187
fcf	0.6088	0.2391	2.55	0.011	0.1402	1.077352
inve	0.302	0.3385	0.89	0.372	-0.361	-9655336
oc	0.0217	0.1168	0.19	0.853	-0.207	0.2506098
_cons	-0.836	0.2333	-3.58	0	-1.293	-0.37854

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
sr	Unmatched	0.6859	-0.122	0.8079	0.023	35.12
	ATT	0.6854	-0.105	0.7902	0.0263	30.04

Note: S.E. does not take into account that the propensity score is estimated.

**Radious Matching**

```
.psmatch2 road1 tang mb size gro risk fcf inve oc, kernel out (roa)
```

Probit regression

Number of obs = 3130

LR chi2 (5) = 489.03

Prob > chi2 = 0.0000

Log likelihood = -1923.5656

Pseudo R2 = 0.1128

road1	Coef.	Std. Err.	z	P>  z	[95% Conf	Interval]
tang	-0.653	0.1123	-5.81	0	-0.873	-0.432809
mb	-0.02	0.0374	-0.52	0.601	-0.093	0.0536833
size	0.1078	0.0149	7.23	0	0.0786	0.1370131
gro	0.1985	0.0585	3.39	0.001	0.0838	0.31318
risk	0.0274	0.0415	0.66	0.509	-0.054	0.1086822
fcf	4.4669	0.2753	16.23	0	3.9274	5.006381
inve	5.3321	0.375	14.22	0	4.5971	6.067213
oc	-0.12	0.1198	-1	0.319	-0.354	0.1153855
_cons	-1.551	0.2401	-6.46	0	-2.022	-1.080652

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
roa	Unmatched	0.0824	-0.016	0.0979	0.003	32.62
	ATT	0.0824	-0.016	0.0979	0.0022	44.33

Note: S.E. does not take into account that the propensity score is estimated.

.psmatch2 roed1 tang mb size gro risk fcf inve oc, kernel out (roe)

Probit regression

Number of obs = 3130

LR chi2 (5) = 311.53

Prob > chi2 = 0.0000

Log likelihood = -1924.0244

Pseudo R2 = 0.0749

roed1	Coef.	Std. Err.	z	P>  z	[95% Conf	Interval]
tang	-0.32	0.1094	-2.92	0.003	-0.534	-0.1052473
mb	-0.088	0.0368	-2.4	0.016	-0.16	-0.0163276
size	0.068	0.0148	4.6	0	0.039	0.0969907
gro	0.1608	0.0574	2.8	0.005	0.0482	0.273325
risk	0.0161	0.0413	0.39	0.697	-0.065	0.0971471
fcf	3.8876	0.2713	14.33	0	3.3558	4.419325
inve	4.3631	0.3672	11.88	0	3.6433	5.082817
oc	-0.024	0.1201	-0.2	0.84	-0.26	0.2112088
_cons	-0.668	0.2381	-2.8	0.0005	-1.134	-0.2008539

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
Roe	Unmatched	0.1244	-0.227	0.3514	0.0129	27.16
	ATT	0.1244	-0.227	0.3514	0.0057	61.18

Note: S.E. does not take into account that the propensity score is estimated.

.psmatch2 srd1 tang mb size gro risk fcf inve oc, kernel out (sr)

Probit regression

Number of obs = 3130

LR chi2 (5) = 86.46

Prob > chi2 = 0.0000

Log likelihood = -2058.3345

Pseudo R2 = 0.0206

srd1	Coef.	Std. Err.	z	P>  z	[95% Conf	Interval]
tang	0.1168	0.1077	1.08	0.278	-0.094	0.3279443
mb	0.2274	0.0346	6.58	0	0.1596	0.2951284
size	0.0148	0.0144	1.03	0.305	-0.013	0.0430719
gro	0.2417	0.0565	4.28	0	0.1308	0.352421
risk	0.0126	0.0403	0.31	0.754	-0.066	0.0916187
fcf	0.6088	0.2391	2.55	0.011	0.1402	1.077352
inve	0.302	0.3385	0.89	0.372	-0.361	-9655336
oc	0.0217	0.1168	0.19	0.853	-0.207	0.2506098
_cons	-0.836	0.2333	-3.58	0	-1.293	-0.37854

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
sr	Unmatched	0.6859	-0.122	0.8079	0.023	35.12
	ATT	0.6859	-0.122	0.8079	0.0244	33.15

Note: S.E. does not take into account that the propensity score is estimated.

.pstest tang mb size gro risk fcf inve oc

Variable	Mean			T	t-test		V(T)/ V(C)
	Treated	Control	%bias			p>t	
Tang	0.45342	0.45818	-2.1	-0.51	0.607	1.04	
Mb	1.1739	1.1242	7.1	1.58	0.113	0.97	
size	14.843	14.879	-2.2	-0.55	0.585	1.01	
gro	0.16989	0.18112	-2.7	-0.67	0.503	0.94	
risk	0.07177	0.0689	0.5	0.12	0.901	1.16*	
fcf	-0.00733	-0.01015	2.0	0.5	0.614	1.1	
inve	0.06726	0.06879	-1.5	-0.38	0.704	1.01	
Oc	0.62888	0.62687	1.0	0.25	0.800	0.94	

\* if variance ratio outside [0.89; 1.12]

Ps R2	LR chi2	p>chi2	MeanBias	MedBias	B	R	%Var
0.001	3.45	0.903	2.4	2	7.5	0.99	13

\* if B>25%, R outside [0.5; 2]





. teffects nnmatch (roe tang mb size gro risk fcf inve oc) (roed1)

Treatment -effects estimation                      Number of obs = 3130  
 Estimator : nearest-neighbor matching      Matches: requested = 1  
 Outcome model : matching    min = 1  
 Treatment model : logit    max = 1

		AI Robust				
roe		Coef	Std. Err.	Z	P > Z	[95% Conf. Interval]
ATE	roed1					
	(1 vs 0)	0.2428	0.0144	16.91	0	0.2147 0.2709

. teffects nnmatch (sr tang mb size gro risk fcf inve oc) (srd1)

Treatment -effects estimation                      Number of obs = 3130  
 Estimator : nearest-neighbor matching      Matches: requested = 1  
 Outcome model : matching    min = 1  
 Treatment model : logit    max = 1

		AI Robust				
sr		Coef	Std. Err.	Z	P > Z	[95% Conf. Interval]
ATE	srd1					
	(1 vs 0)	0.7719	0.0291	26.5	0	0.7149 0.829