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Understanding the Dynamics of Business Groups in Pakistan- A Focus on the Financial Performance and Dividend Policy

by

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Understanding the Dynamics of Business Groups in Pakistan- A Focus on the Financial Performance and Dividend Policy

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I dedicate my work to the Holy Prophet (peace be upon Him) and my parents

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(Waseem Ullah)

List of Publications

It is certified that following publications have been made out of the research work that has been carried out for this thesis.

Journal Papers:

1. Waseemullah, Ali, S., & Mehmood, S. (2017). Impact of excess control, ownership structure and corporate governance on firm performance of diversified group firms in Pakistan. Business & Economic Review, 9(2), 49-72.

2. Waseemullah & Hassan, A. (2018). Investigating the group premium/Discount of business groups in Pakistan. The Pakistan Development Review. Accpeted paper.

3. Waseemullah & Hassan, A. (2017). Family ownership, excess control and firm performance: A focus on the family firms in Pakistan. The Paradigm. Accpeted paper.

Conference Papers:

1. Waseemullah & Hassan, A. (2016). Investigating the group diversification premium and discount in Pakistan. In Ph. D Session. China Pakistan Economic Corridor and Regional Integration. Paper presented at the 32nd Annual General Meeting and Conference of Pakistan Society of Development Economists. Islamabad, Pakistan.

Abstract

This thesis attempts to provide empirical evidence in the field of corporate finance by focusing at two major areas of financial performance and dividend policy in an emerging market. The thesis is divided into three parts. The first part of thesis analyses the performance and risk sharing phenomenon of diversified business groups relative to standalone firms during a time when economic and institutional environment is changing. The performance comparisons are made in three dimensions including Excess value, Excess profitability and Risk. The study employs both univariate analyses and regression analyses. Based on Chop Shop methodology, the study finds that Excess value-sales is significantly lower for group affiliated firms than standalone firms. The results demonstrate that group affiliated firms are trading at discount (underperform) as compared to their counterpart standalone firms. Group diversification discount is present yet it is not homogeneous across all business groups: group discount for firms affiliated with least diversified business groups is relatively higher than firms affiliated with intermediate diversified and most diversified business groups. The results of Excess profitability (operating) clearly indicate that diversified business groups enjoy higher profitability than their corresponding standalone firms in Pakistan. However, there is a continuous decline in Excess profitability (operating) in every subsequent sub-period. Moreover, the findings of Risk-operating profits variability analyses suggest that group affiliated firms exhibit lower level of risk than standalone firms. The study provides an evidence of the risk sharing role of business groups among their group affiliates in Pakistan. The study applies robustness checks of Excess value-EBIT, Excess profitability (net) and Risk-net profits variability that confirm the above results. The study employs a relatively large, contemporary and time varying database of Pakistani firms covering a period of 1993-2012. Despite the historical success in the past, the findings suggest that business groups evolve differently in the post financial reforms and privatization programs era. In the second part of thesis, an effort is made to examine the relationship between ownership structure and firm performance particularly focusing to answer the question whether corporate ownership reasonably explains the difference in performance of group firms

than standalone firms in Pakistan. The findings reveal that Ownership disparity strongly negatively affects the performance of group firms. Institutional ownership and Domestic private institutional ownership positively affect the performance of both standalone firms and group firms and however, the strength of relationship is stronger for group firms. Further, the results indicate that both Relational ownership and Ownership concentration strongly negatively affect group firms' performance whereas these affect positively or insignificantly standalone firms' performance. The findings suggest that as the ownership-control disparity widens, it enhances the potential of the ultimate controller in tunneling firm resources at the expense of minority shareholders. Most importantly, institutional investors particularly, domestic private institutional investors seem strongly influential in the monitoring of ultimate controllers in business groups. Finally, in the third part of thesis, dividend payout behavior of group firms in general and pyramidal firm in particular is investigated in the light of 'agency theory' and 'expropriation hypothesis'. The results propose that diversified group firms and pyramidal firms pay significantly lower dividends than standalone firms consistent with the expropriation hypothesis (La Porta et al., 2000). Ownership disparity strongly negatively affects dividend policy of group firms. Relational ownership and Ownership concentration seem significantly negatively affecting group firms' dividend policy. The findings suggest that institutional investors in general and domestic private institutional investors in particular are influential in affecting dividend policy of group firms. The study provides important insights in an emerging market context.

Key words: Business groups, Market failure theory, Agency theory, Principal-agent conflicts, Principal-principal conflicts, Firm performance, Ownership structure, Ownership disparity, Dividend policy .

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Chapter 1

Introduction

1.1 Introduction

Research in business groups is one of the most extensively investigated area fascinated the researchers in the field of strategy, organization and corporate finance that helps in unfolding numerous dynamic characteristics of business operations and firm performance (Khanna and Palepu, 2000b; Chang and Hong, 2000; Kumar et al., 2008; Estrin et al., 2009; He et al., 2013). Business group can be defined as collection of legally independent firms that are linked to each other by a constellation of formal (ownership) and informal (social) ties and these are accustomed to taking coordinated actions (Granovetter, 1995; Khanna and Rivkin, 2001).

Numerous researchers argue theoretical perspectives for the emergence and prevalence of business groups in emerging economies (Lee et al., 2008). A prevalent argument is that the predominance of BGs in emerging markets is a strategic response of firms to market failure and associated transaction costs those characterize these markets (Leff, 1978). In advanced countries, institutional environment has developed with well functioning capital, labor and product markets. On the other hand, in other emerging countries including South Korea, China, India and Pakistan; certain market failures exist like information and contracting problems, weak regulatory and governance system and poor law enforcement (Khanna and Palepu, 2000b). BGs serve as a substitute of missing institutional environment

that supports business activities in the country (Peng et al., 2008; Khanna and Palepu, 1997; Hovakimian, 2011). These are well diversified across various industries that enable affiliates internalizing market transactions and creating value enhancing internal networks by providing access to scarce group's resources and capabilities like capital, markets, brand names, skills and information. Resources sharing within group affiliated firms minimize transaction costs and reduce risk (Estrin et al., 2009; Mahmood et al., 2011; Lamin and Dunlap, 2011). BGs enable affiliates sharing risk by smoothing income flows and by re-allocating funds from one group firm to another during the periods of financial suffering (Khanna and Yafeh, 2005). They serve an insurance function in underdeveloped markets (Strachan, 1976). Resource based view proposes that recurring transactions among group affiliates may lead to richer flows of information and hence improve resources allocation (Guillen, 2000). Necessarily, those advantages are not available to unaffiliated firm in emerging markets.

The institutional environment plays an important role pertained to group affiliation and group diversification-performance relationships. As the institutional setting changes, the impact of group affiliation and diversification strategy on firm performance are expected to evolve differently (George and Kabir, 2008; Lee et al., 2008). The financial reforms and privatization programs having started in early 1990s and those altered the economic landscape that historically facilitated large BGs structuring their diversification strategies owing to market failure in Pakistan. Having enjoyed highly privileged licenses' and quota systems, the large BGs had dominated the corporate sectors. These BGs faced much needed stiff market competition and the BGs thrived on rent seeking and economic inefficiencies in pre-financial reforms and liberalization era might have suffered in the post-finanical reforms period.

An alternate strand of thinking contends that BGs' structure could engender agency conflicts. The unique context of emerging economies often suitable for

firms arrange themselves in the form of diversified BGs through complex pyramidal ownership structures in order to cope the problems of missing efficient institutions needed to accomplish various business needs (Porta et al., 2002; MULLAINATHAN, 2002). The focus of corporate governance system shifts away from traditional 'principal-agent' conflicts to 'principal-principal' conflicts e.g., conflicts among controlling shareholders and minority shareholders (Joh, 2003; Djankov et al., 2008; Claessens et al., 2000). The ultimate controllers attempt gaining personal gains that detriments minority shareholders' value particularly in the emerging countries with weak regulatory system (Faccio et al., 2001; Holmén and Hogfeldt, 2005). Tunneling is prevalent although it is not universal in the family-controlled BGs in emerging countries (Khanna and Yafeh, 2007; Ikram et al., 2005). Obviously, this activity destroys firm value (Dow and McGuire, 2009).

This thesis consists of three parts. In the first part of thesis, the study examines the impact of group affiliation on firm performance. It also investigates the performance impacts of group diversification in the lights of 'market failure theory' and 'agency theory' in Pakistan. The study is conducted in an emerging country that characterizes shortage of capital and information problems. BGs are prone to such environment as they can alleviate these problems. BGs provide value enhancing internal markets to their affiliates. Although, group affiliates in Pakistan are usually focused, however, large BGs are well diversified having multiple firms across many industries. Group affiliates may get benefits from diversification but it can harm firm value if the ultimate controller uses the diversification as a device of expropriation of firms' resources at the expense of minority shareholders (Lan and Wang, 2004; Omran, 2009). The aim of the study is to examine if group affiliation and group diversification create or destroy firm value? Also an effort is made to examine the comparative performance of firms affiliated with BGs diversified across different levels (least, intermediate and most diversified) relative to standalone firms. Further, the study examines if these these relationships hold or change over the longer periods?

In the second part, the study investigates the impact of ownership structure on

firm performance. Agency theorists propose that ultimate controllers are motivated in diversion of firms' resources to themselves at the expense of external shareholders in group firms. These ultimate controllers extend their control over many other firms with least cash flow investments through cross ownership inter-locking, cross directorate-ship inter-locking, pyramidal ownership structures and dual class share structures. Such control enhancing mechanism leads to disparity between ownership and control. This ownership pattern is termed as 'Controlling minority structure' (CMS) and it is well documented as an important corporate governance problem in the finance literature. CMS motivates the ultimate controllers to be engaged in tunneling firm's resources for their private benefits. The institutional investors possess the ability and motivation in monitoring the activities of entrenched ultimate controllers. These may be very influential in restricing the tunneling potential and thus helpful in mitigating the agency conflicts between controlling shareholders and external shareholders in the group firms. The study investigates the potential performance effects of ownership disparity as well as other ownership identities like inside, relational, institutional, domestic private institutional and government institutional ownerships. Further, the study examines the strength of these ownership identities in affecting group firms' performance relative to standalone firms in Pakistan.

In the third part of thesis, the study investigates dividend policy of group affiliates in general and pyramidal firms in particular in Pakistan. The focus on dividend policy is motivated by disagreement in finance literature on the role of ultimate controllers in affecting dividend policy. La Porta et al. (2000b) introduce 'expropriation hypothesis' which suggests that ultimate controllers of group affiliates may have plenty of opportunities of diverting firms' resources to themself. Instead of paying dividends, they are warmly motivated in retaining cash within firm at their disposal to extend their tunnelling potential. They face a little monitoring from the internal governance system as well as external governance system in those countries with weak investors' protection like Pakistan. Pyramidal group firms are prone to such entrenched behaviour of the ultimate controllers. The ultimate controllers are fully entrenched with least cash flow rights and any

discount in share price by minority shareholders cost them least. Further, group firms are able to meet their financial needs through inernal markets. These transfer surplus funds from one firm to another firm with shortage of funds. Therfore, these firms are not subject to the strong monitoring of financial institutions and stock markets' pressure. The ultimate controllers don't like issuing new equity to avoid dilution of control. They attempt maintaining their ultimate control without investing further cash in the firms. The study analyzes dividend policies of the diversified group firms and pyramidal firms relative to their counterpart standalone firms in Pakistan. Further, it examines the impacts of ownership disparity and other ownership identities (like inside, relational, institututional, domestic private institutional, government institutional and concentrated ownerships) in affecting dividend policy of group firms relative to standalone firms Pakistan.

The study is very important in Pakistani context in several ways. Firstly, this research is conducted in an emerging country where BGs are a common feature of business environment. On one hand, BGs can facilitate their member firms by sharing resources. On the other hand, diversification may harm firm value as it may extend the potential of ultimate controller in tunneling firm resources to make private benefits at the cost of minority shareholders. A little work [for instance Ghani et al. (2010) and Gohar and Karacaer (2009)] has been done to examine the financial performance of group affiliates and standalone firms in Pakistan. However, the results of both studies are mixed and there is no conclusive evidence that group firms perform better or worse in Pakistani context. Secondly, while BGs are well pronounced in corporate sectors but group affiliates usually belong to one BG only. Therefore, sample size of group affiliates will be larger having no ambiguity regarding group affiliation.

Thirdly, although firms are typically focused in Pakistan but the BGs are well diversified across broad range of industries indicating a worthful investigation of group diversification-performance relationship and group diversification-dividend policy relationship. Fourthly, linkages among group affiliates are usually represented by blocks of shareholdings of the group members. Further, cross ownership inter-locking and pyramidal structures and cross directorate-ship inter-lockings are

more common mechanisms used by ultimate group controllers to extend their control. Hence, study of the relationship between ownership structure (particularly focusing ownership disparity) and firm performance is also important in Pakistani context.

This chapter primarily provides theoretically background of the study. The comparative performance of diversified group firms relative to standalone firms is discussed. The association between corporate ownership (including ownership identities and ownership disparity particularly focusing the agency theory) and firm performance is investigated. Also, it gives information about the dividend policy of group firms. Further, problem identification is done and problem definition is explicity given. Then specific research questions and objectives of study are stated. Moreover, study's significance is highlighted. In the end of chapter, research design of study is stated.

1.2 Background of the Study

Business groups are ubiquitous organizational form in most of the emerging countries. They play an important, yet poorly understood role in the economies like South Korea, China, Indonesia, Chile, India, and Pakistan (Khanna and Yafeh, 2007). BG is a set of legally separate entities connected with each other through formal and informal ties that bound them taking coordinated actions. A variety of names are used for BGs in various countries [for instance in Pakistan 'Business Groups'; in India 'Business Houses'; in South Korea 'Chaebols'; in Japan 'Keiretsu'; in Latin America 'Grupos Economicos'; in Hong Kong 'Hongs'; in Taiwan 'Guanxiqiye'; in Russia 'Oligarchs' and in China 'Qiye Jituan' (Essen, 2011).

A lot of research appears on the surge of comparative performance diversified group affiliates and standalone firms but still it is undecided whether group affiliation creates or destroys firms' value. Many scholars propose that group affiliates perform better than standalone firms (Castañeda, 2007; Ghosh, 2010; Kim et al., 2004a; Ghani et al., 2010; Rong et al., 2015) whereas some others suggest that opposite is true (Laeven and Levine, 2007; Gohar and Karacaer, 2009; Van Lelyveld

and Knot, 2009; Lins and Servaes, 2002) and a few of them observe mixed results and each scholar can point to empirical support for his position (Khanna and Rivkin, 2001). A number of researches reveal that group affiliation and group diversification-performance relationships are not universal and these studies show mixed results. Khanna and Rivkin (2001) examine the impact of group affiliation on firm performance by taking firms from 14 emerging countries. They find that group affiliation improves firms' performance in 6 countries whereas it harms the performance in 3 countries and it is ineffectual in remaining 5 countries. Some other studies for instance Kim (2012) reveal that group affiliation itself may not be value enhancing activity. There are some differences in firms' characteristics that might influence firms' value.

Chang and Choi (1988) and Khanna and Palepu (2000b) among others suggest that group affiliation imroves firms' performance in those countries having weak institutional environment. They argue that diversified BGs internal markets networks are able to substitute for missing capital, labor and product markets in these emerging markets. BGs are diversified at different levels and these possess variety of resources and capabilities that may influence firms' performance with varying strengths. The firms affiliated with larger and more diversified BGs are able to avail some valuable, rare and imitable resources. These enable them to generate relatively more value for their affiliates. Further, there are plenty of costs associated with the operations of diversified BGs. These costs may include coordination and management costs, bureaucratic cost, etc. that a small BG might not afford.

Khanna and Yafeh (2005) document that BGs serve not only for profit maximization but also help in reducing risk and uncertainty for their group affiliates. They find evidence of risk sharing behavior of BGs in many emerging markets including Brazil, South Korea, India, Thailand and Taiwan. They suggest that risk sharing prevails through shared resources, dividends and intra group transfers of loans and receivables. Gopalan et al. (2007) document that group affiliation provide coinsurance function. Similarly, group affiliates get benefits of tax shield (Gramlich et al., 2004).

A number of researchers report a declining trend in performance of the diversified group affiliates relative to standalone firms in some countries. Khanna and Palepu (2000a) and Lee et al. (2008) find that group firms tend to decline in performance than their counterpart standalone firms in Chile and South Korea. They opine that performance of BGs pursuing diversification activities gradually decreases as the institutional environment developed in the country. Lins and Servaes (2002) find a significant discount for firms affiliated with diversified BGs than single segment firms in seven emerging markets. They suggest that BGs pursue diversification strategy for merely tunneling firms' resources at the expense of minority shareholders and this activity causes serious agency conflicts among the controlling shareholders and minority shareholders that destroy firms' value.

There is no conclusive evidence that group affiliates perform better or worse in Pakistan. Ghani et al. (2010) and Ahmad et al. (2016) observe superior performance (measured by ROA) whereas Gohar and Karacaer (2009) find lower performance of group affiliates than corresponding standalone firms. Mixed findings stress the need to examine the performance of group affiliates relative to standalone firms by employing well recognized methodology in the finance literature. The present study employs widely used Chop Shop methodology on a longitudinal data and examines the performance of diversified group affiliates relative to standalone firms.

The relationship between ownership structure and firms' performance is an important issue that attains much attention of the researchers. There is a phenomenon that ultimate controllers of BGs are motivated in extending their control over many other firms with least cash flow investment. They use investment activity (group affiliates' investment) to achieve their ultimate control over many firms. Moreover, least participation of general public in corporate voting further augments their control. Such control enhancing mechanism enable ultimate controllers enjoy excess control than cash flow rights. There is a mis-alignment of the incentives of ultimate controllers. Further, these are fully entrenched enjoying higher control that motivates them engage in expropriation of firms' resources at the cost of minority shareholders. The ultimate controllers make over-investment and inefficient investment decisions. Tunneling may be through a variety of other forms

including transfer pricing, provision of loans and leasing of assets at non-armed length prices. Futher, operations of financially weak group affiliates are cross- subsidized at the cost of healthy ones and thus, group affiliates may suffer from the problems of mis-allocation of funds. There is a shift in corporate governance from traditional principal-agenct conflicts to principal-principal conflicts e.g., conflicts amongst controlling shareholders and minority shareholders. These severe agency conflicts harm firms' performance (Lins and Servaes, 2002; Gutiérrez and Pombo, 2009; MULLAINATHAN, 2002).

Besides the performance impacts of group affiliation and group diversification, dividend policy of BGs is also worth ful in Pakistani context. Dividend is the mechanism used by management to control agency conflicts. Through dividend payments, managers share their views with shareholders that they are serving their interests. Similarly, shareholders use dividends as monitoring device to oversee managers' potential in misusing firm's resources. Therefore, there agency costs are expected to be positively related with dividend policy. There are substantial costs associated with dividend payments. Firm has to cut their planned investments. Alternatively, firm can use internal equity to finance dividends or it has to arrange finance through issuing new equity or debt both require transaction costs. These transaction costs limit the dividend paying ability of a firm. Thus, there is an inverse relationship between transaction costs and dividend policy. Rozeff (1982) present an idea of dividend minimization model. This suggest that an optimum dividend payout ratio is set at a level where both agency costs and transaction costs are minimized.

Many agency cost variables have been used by different researchers including ownership concentration, diffused ownership, inside ownership, institutional ownership, government ownership, slack, etc. Inside ownership aligns the incentives of insiders (managers) with the external shareholders. If shareholders realize that insiders are not serving their interests, they may discount the share price. It will decrease the market value of insiders' shareholding by larger value. Therefore, insiders with higher stakes in ownership of the firm will be motivated in minimizaing agency conflicts to avoid shareholding losses. Agency conflicts are lower in such

ownership structure and lesser the need to pay dividends. Thus, inside ownership is expected to have a negative relationship with dividend policy. Similarly, a negative relationship is expected between ownership concentration and dividend policy. In concentrated ownership, a small number of block holders possess large number of shares and these are able to monitor the insiders' activities more efficiently.

In Pakistani group firms, the ultimate controllers extend their control through complex pyramidal ownership structures. It causes disparity between ownership and control of the ultimate controllers. As an agency cost variable, ownership disparity may have two sided relationships with dividend policy. Firstly, ownership disparity causes serious agency problems among the ultimate controllers and external shareholders and there is expected a positive relationship between ownership disparity and dividend policy. Secondly, because ultimate controllers achieve full control of the firms with least cash flow investments, therefore, they don't feel any fear of being removed from board or any burden of discount in share price. Further, the group affiliates are not subject to strong capital markets' monitoring as the ultimate controllers once achieive an ultimate control over the firm are not likely to issue further equity in order to avoid control dilution. Alternatively, they can meet firms' financial needs through inter-transfer of funds. This implies that dividend decision of group affiliates is more sensitive to the choice of ultimate controllers whether to pay dividend or not. The ultimate controllers are more likely to be motivated in retaining cash flows within the firm in order to extend their tunneling potential. Therefore, group affiliates are likely to pay lower dividends than standalone firms consistent with expropriation hypothesis.

1.3 Problem Statement

Business groups exist in many economies of the world including Pakistan. From the earlier studies, it is unclear that business groups should be cast as heroes or villains in Pakistan. Whether they are value enhancing networks or value destroying economic organizations? The group diversification and controlling minority

structures enhance the potential of the ultimate controllers to engage in expropriation of external shareholders. Further, the ultimate controllers attempt to extend their control over firms' assets and therefore, they may eagerly be motivated to discourage dividend payments. These are the major problems this study identifies to deal in.

1.4 Research Questions

This research will answer the following questions:

Research Question 1

Does group affiliation and group diversification create premium or discount in Pakistan?

Research Question 2

Do group affiliates enjoy excess profitability in Pakistan?

Research Question 3

Do business groups play a key role of risk sharing among their group affiliates?

Research Question 4

Do group affiliation and group diversification-performance relationships and risk sharing behavior hold over the longer period?

Research Question 5

Does performance of firms associate with corporate ownership e.g., inside ownerhsip, relational ownership, ownership disparity, ownership concentration, institutional ownership, domestic private institutional ownership and government institutional ownership?

Research Question 6

Does corporate ownership affect significantly differently the performance of group affiliates than standalone firms?

Research Question 7

Do group affiliates and pyramidal group firms pay lower dividends than standalone firms in Pakistan?

1.5 Research Objectives

Objectives of the study are as follows:

Research Objective 1

To investigate the group affiliation and group diversification-performance relationships and to find out the comparative performance of least, intermediate and most diversified group affiliates relative to standalone firms in Pakistan.

Research Objective 2

To examine how controlling minority structure and ownership identities affect the performance of group affiliates and standalone firms in Pakistan.

Research Objective 3

To analyze the dividend policy of group affiliates in general and pyramidal group firms in particular relative to standalone firms in Pakistan.

1.6 Significance of the Study

The study is important as it fills the gap in existing finance literature with respect to Pakistan. The study covers three parts related to the dynamics of BGs including firm valuation and dividend policy in the light of agency cost theory and expropriation hypothesis.

In the first part of thesis, the study examines the impact of group affiliation and group diversification on firm performance. Further, it examines the ability of diversified BGs in risk sharing among their affiliates. In Pakistani context, the findings of the earlier studies regarding the performance of group firms relative

to standalone firms are mixed. Ghani et al. (2010) find higher accounting performance (measured by ROA) of group firms than standalone firms during the period of 1998 to 2002. They draw conclusions based on descriptive statistics (mean/median values) only. Also, Ahmad et al. (2016) find higher performance of group firms than standalone firms in Pakistan. Contrarily, Gohar and Karacaer (2009) observe lower accounting performance of group firms than standalone firms during the periods of 2002 to 2006. The study period of these studies is very small and these ignored widely used 'Chop Shop' methodology for measuring the financial performance of group firms relative to standalone firms. This methodology is well documented in the finance literature of both advanced and developing countries [for instance Berger and Ofek (1995); Claessens et al. (2002); Ferris et al. (2003); Lee et al. (2008)]. The present study addresses the previously non-researched issues like investigating the group affiliation and group diversification premium/discount, excess Profitability and risk sharing role of BGs in the post financial reforms era by applying longitudinal data of 1993-2012 period in Pakistan. The study also examines if these relationships remain consistent over the longer period or these change in the distinct sub-periods. To the best of the knowledge of the researcher, this is the pioneering study investigating these issues in Pakistan.

In the second part of thesis, the study investigates the association between corporate ownership and firm performance. The focus is on the ownership disparity. Agency costs are the central issue in group affiliates that is the main hurdle in the process of sound financial system in Pakistan. Principal contribution of this study lies in highlighting the performance impacts of complex ownership structures used by the ultimate controllers in group affiliates in order to bring more assets under their control. Institutional investors possess both ability and motivation in monitoring of the ultimate controllers. The ownership structure may affect significantly differently performance of group firms than standalone firms. There is an utmost need to explore performance impacts of controlling minority structure and other ownership identities including relational ownership, ownership concentration, domestic private institutional ownership and government institutional ownership,

etc., for group firms in relation to corresponding standalone firms. Such comparative owenrship-performance relationships have not been researched earlier in Pakistan.

In the third part of thesis, the contribution lies in the new insights provided by adding a set of previously non-researched variables in the studies of dividend policy in Pakistan: group affiliation and group diversification as well as ownership disparity and relational ownership. Further, this is the pioneering study testing the 'expropriation hypothesis' in Pakistan. The study selects pyramidal firms for that purpose because the disparity between control rights and cash flow rights is particularly wider in such firms which enhance the ability of controller to retain cash and reduce dividend. The investigation of dividend payout behavior has not been done previously on a sample of pyramidal firms in Pakistan.

The study contributes to existing finance literature on BGs and provides useful insights to the readers. The study is important to the stakeholders of the firm in general and the shareholders (retail investors) in particular, who are concerned with the continuous growth and performance of the firm. The study provides empirical evidence that ultimate controllers of group affiliates use diversification for merely controlling assets worth more under their control to enhance their tunneling potential. It is the root cause of severe agency conflicts in these group firms that may destroy firm value. The study sheds light on an important issue that group affiliates suffer from the problems of controlling minority structure. The ultimate controllers extend their control through complex pyramidal ownership structures that widens the gap between ultimate controllers' ownership and control. This divergence (disparity) between ownership and control may motivate ultimate controllers of group firms involve in expropriation of firms' cash flows and assets at the expense of minority shareholders (retail investors) that ultimately destroy minority shareholders' value. Thus, group firms may not be a value enhancing networks for minority shareholders (retail investors) rather these are the devices of tunneling firm resources for the maximization of wealth of group's ultimate controllers.

The present study is very informative and beneficial for the retail investors as well as managers that will help them while making their investment decisions. The

retail investors should avoid investing in stocks of group affliated firms. Moreover, the research provides useful information to the regulatory bodies and policy makers who are responsible for the governance mechanism of the corporate sector and are concerned with the protection of shareholders' rights in Pakistan. It stresses the need to frame and implement such corporate governance measures that retail investors may be protected from the dangers of ownership-control disparity faced by most of the group firms in Pakistan.

1.7 Organization of the Study

The study proceeds as follows. In Chapter 1, theoretical background of the study and objectives of the study are given. In Chapter 2, literature is reviewed related to three inter-related areas including comparative performance of group affiliates relative to standalone firms. Further, a literature reviews of group ownership and firm performance as well as of dividend policies are done. Moreover, hypotheses of the study are developed in the light of literature review. In chapter 3, research methodology, methods and procedures related to sample selections, data collections and data analyses are presented. In chapter 4, results discussion is given. In the end, recommendations and policy implications of the study are given on the basis of the findings. Moreover, limitations of the study as well as directions for future research are given.

Chapter 2

Literature Review

2.1 Business Groups and Firm Performance in Pakistan

BGs play a vital role in the development of both emerging and developed countries (Claessens et al., 2002; Khanna and Yafeh, 2005; Morck and Yeung, 2004). As BGs' ubiquity becomes increasingly well documented, researchers now begin to explore the structural characteristics and performance of these groups (Khanna and Yafeh, 2007; Kumar et al., 2008; Estrin et al., 2009; Mahmood and Mitchell, 2004).

A number of researchers find a premium for diversified group firms in emerging economies in the past (Keister, 1998; Khanna and Palepu, 2000b). However, most of the recent studies find a robust discount for these diversified group firms in these economies (Lins and Servaes, 2002; Lee et al., 2008). These studies highlight the negative attributes of BGs (Scharfstein and Stein, 2000). They view BGs as networks formed to plunder the assets of their affiliates that ultimately cost to external shareholders. The ultimate controllers exploit their control rights to maximize their personal benefits (MULLAINATHAN, 2002). Some others characterize BGs as rent seeking mechanism of politically connected groups (Laeven and Levine, 2007; Chang, 2003b; Fisman, 2001; Morck and Yeung, 2004).

In Pakistan, BGs were the success story in the past. They flourished aggressively in 1950s and 1960s due to underdeveloped nature of institutional environment

in the country. However, financial reforms and privatization and liberalization programs were started in early 1990s those changed the economic landscape of the country and those BGs thrived on capabilities of market failures and other economic inefficiencies may have suffered. These BGs have to restructure their group affiliation and diversification strategies to compete in the changed product, labor and financial markets. The present study focuses to answer the question if group affiliation and group diversification strategy is still worth full in the changed institutional environment or it destroys firm value in Pakistan?

The definitions of BG vary substantially across the researchers and countries. According to Strachan (1976) BG is a "long term association of a great diversity of firms and the men who own and manage these firms". Leff (1978) defines BG as "a group of companies that does business in different markets under a common administrative or financial control" and further argues that group affiliated firms are "linked by relations of interpersonal trust, on the basis of a similar personal, ethnic or commercial background". Encarnation (1989) draws attention towards the variety of linkages among the group affiliates. He suggests that "in each of the business houses, strong social ties of family, caste, religion, language, ethnicity and region reinforced financial and organizational linkages among affiliated enterprises". Khanna and Yafeh (2007) states that "business group consists of legally independent firms, operating in multiple (often unrelated) industries, which are bound together by persistent formal (e.g., equity) and informal (e.g., family) ties". Chilean regulation defines business group as a "set of firms that present a relationship in their properties, management, administration, or credit responsibilities, and that there is a reason to believe that economic and financial decisions of these firms are guided by or subordinated to the shared interests of group, or that there are common financial risks in the credits obtained or in financial instruments used".

Bottasso and Sembenelli (2004) highlight the importance of family ownership in defining business groups. Similarly, Gonenc et al. (2007) add another dimension in defining business group based on the work of Morck and Yeung (2004) e.g., BGs not only include firms which are linked together through cross ownerships

but also there exists pyramidal ownership structures. A family owns substantial shareholding of a listed firm that in turn attains an ultimate control of few other firms that again holds a substantial control of few other firms and so on. Finally, Cuervo-Cazurra (2006) defines BG as a collection of legally independent firms with stable relationships operating across many industries and these have common shareholdings and control.

2.1.1 Business Group Theories

2.1.1.1 Market Failure Theory

Leff (1978) proposes the idea of market failure that relates the emergence of BGs with the underdeveloped nature of institutional setting in the emerging countries. He identifies three major market imperfections in the developing economies. Firstly, BG is an organizational form that gains quasi-rents accruing from access to scarce and imperfectly marketed inputs like capital and information. Secondly, BGs adopt a portfolio approach in order to diversify risk and expand into diversified product lines. Thirdly, BGs through vertical diversification and integration are able to overcome those problems they face in competing in an environment of various forms of oligopoly and monopoly.

Transaction costs argument is an essential component of the market failure. The scholars focus on two primary sources of transaction costs including information asymmetry and contracting problems. A true underlying value of goods and services is not available due to deficient information. Very low quality goods and services may be offered at very high prices and vice versa. The underdeveloped market infrastructure causes very high transaction costs. Also, firms face high contracting as well as agency problems in these countries due to market imperfections and deficient rule of law. The contracting problems arise as contracting parties are unable to write optimal contracts. Also, contract enforcement is very difficult. BGs emerge in such countries because they can mitigate these market failures. BGs internal networks facilitate economic transactions and make up for incomplete contracts (Porta et al., 1999; Granovetter, 2005).

Khanna and Palepu (1997) further extend the market failure argument and present an idea of institutional voids. They propose that institutions which support business activities in the country are missing and BGs emerge in response to that institutional gap. They build their argument as follows: First, in product markets, given the lack of intrinsic information about products due to missing transactions related claims processing institutions, firms in developing markets face much higher costs in building credible brands than their counterparts in advanced countries. Therfore, BGs develop reputation and spread the cost of brand names among group affiliates. The group affiliates can use group reputation for entrance into new businesses. Second, in capital markets, investors are reluctant in investing fund in non-familiar ventures. The diversified BGs enjoy an easy access to funds in capital markets due to reputation and hence get privileges that are unavailable to standalone firms. Third, in labor markets, there is a shortage of skilled labor and managerial talent because of limited education facilities. Large BGs can inititate training and development programs to develop talented managers within group. Further, running an internal labor market within a group can provide additional room of flexible management particularly when labor market is rigid. Moreover, the governments in developing economies intervene extensively in the business operations. BGs enjoy strong political and bureaucratic links and they can influence decisions in group favor. BGs could afford the costs of maintaining relations with the government.

2.1.1.2 Economic Catch up Theory

(Lee, 2002) looks the BGs from a new perspective known as economic catch-up perspective. He proposes that BGs emerge not only in response to market failures but also these serve as an organizational device for economic catch-up. BGs facilitate entry of new affiliates into new markets or lines of businesses that are formerly monopolized by the forerunning firms. These can facilitate them during initial periods by providing capital, markets, technology and brand names. Further, these provide cross-subsidies and often enjoying lower than average profitability. Thus, these tend to reduce the risk and uncertainty of group affiliates.

Lincoln et al. (1996) observe a redistribution effect (reduction in profits variability) amongst the Japanese keiretsu. In other words, operations of the weaker affiliates are cross-subsidized at the cost of stronger ones.

2.1.1.3 Resource Based View

Guillen (2000) presents the resource based view of BGs that explains the importance of group structure in terms of access to resources. He suggests that there may be few entrepreneurs and firms that may have developed such skills and valuable resources those are essential for entring into new industries. These skills become valuable when government policies for instance policies related to foreign trade and investment are asymmetric that makes the firms' access to resources quite difficult. In these circumstances, those firms that possess the skills required for repeated entry into new industries may utilize these valuable assets leading to the emergence of BGs. Guillen (2000) observes strong support for resource based view by employing data on the top 10 BGs from 9 emerging markets.

2.1.1.4 Social structure Approach

Granovetter (2005) prsents the social structure approach. He focuses on the economic organization as a function of axes of social solidarity and suggests that existence of BGs can be connected to social order like ethnicity, kinship, region and religion. Building on the concept of moral economy as proposed by Thompson (1971), he suggests that BGs can be conceived as a moral community in which members are perceived to exhibit trust worthy behavior, adhere to normative standards and forego opportunism.

Some scholars view BGs as family organizations (Mura et al., 1997). A number of researchers document the existence of family controlled BGs in many countries. Chung and Mahmood (2006) observe significant equity stakes of families and their involvement in management in Taiwan. Tsui-Auch (2006) finds that about one third of top BGs are family owned and family involvement in management is extensively higher in Singapore. Further, he finds that chairman belongs to family

in 9 out of top 10 BGs. Gomez (2006) documents that 35 out of top 50 BGs in 1997 are family owned in Malaysia. Claessens et al. (2000) observe that family firms are well pronounced in the corporate sectors in Asia.

Beyond pure family ties, sociology researchers think BGs as networks serving primarily the social and cultural objectives rather seeking economic goals only. Granovetter (2005) finds mixed results related to group affiliation-performance relationship and proposes that there may be some other considerations at play besides the economic objectives. BGs around the world reflect cultural, societal, institutional and some other factors that may include inheritance customs, kinship structure and even national ideology and pride.

Khanna and Yafeh (2007) explore few issues related to family firms categorized by founder-family and successor-family controlled firms. They examine differences of firms' characteristic across these categories including performance, debt financing and family involvement in management. Bertrand et al. (2008) explore these issues comprehensively by employing a data of 70 Thai BGs dominated by ethnic Chinese families. They find that group structure is associated with family history for instance to the number of male sons of the founder or to the number of brothers he had. Also, they examine some other relationships including firm performance, growth and diversification.

2.1.1.5 Political Economy Approach

A political economy approach claims a dominant role of the state in shaping the economy. BGs enjoy strong connections with the governments in several countries. Many scholars suggest government favored BGs as value destroying, unproductive and inefficient organizations depending upon rent seeking activities (Ghemawat and Khanna, 1998). Therefore, they think BGs cost to other business community and society.

Numerous researchers suggest that BGs emerge in response to government policies. Japanese prewar zaibatsu emerge in response to the privatization programs

of Japanese government in early 1880s (Hadley, 1970). The Korean chaebols develop and expand as a result of strongly favorable policies of the government of General Park in South Korea. BGs get extra-ordinary favors in getting loans and foreign exchange (Chang, 2003b; Clifford, 1998; Kim, 1997). During the regime of Mahathir, few BGs get favors during privatization in Malaysia (Gomez and Jomo, 1999). The Salim group gets incentives due to family links with the President Suharto in Indonesia.

In China, the Government encourages BGs and it was warmly motivated in protecting them from foreign competition (Keister, 1998, 2004). The emergence of family linked BGs is routed to the preferential government policies in Israel (Maman, 1999). Similarly, the growth of Oligarchs in Russia is another recent example of very appearance of BGs under the auspices of the Government (Guriev and Rachinsky, 2005). In Pakistani context, White (1974) documents that Government of Pakistan uplifts BGs during 1950's and 1960's. These BGs get privileges in accessing the scarce resources like foreign exchange licenses, investment licenses and licenses to import quotas, etc.

2.1.2 Selected Literature Review

A lot of researches appear on the issue of group affiliation and group diversification-performance relationships. Still it is undecided if diversified BGs perform better or worse than standalone firms. In developed countries, the researchers observe that affiliation with diversified BGs lowers firm performance whereas some other researchers observe higher performance in the developing countries in the past. However, recent studies document that group affiliates underperform than standalone firms in the developing countries. Few studies document that group firms perform better during the early periods whereas these perfrom lower than standalone firm during the latter periods. These studies suggest that group firms perform better during the periods of underdeveloped market infrastructure in the country. BGs possess internal market networks those facilitate their affiliates in mitigating the contacting and informational problems by providing capital, labor and product markets.

Resource sharing among member firms reduces transaction costs and minimizes risk (Estrin et al., 2009). The group headquarters smooth incomes flows and reallocate funds from one group affiliate to another during the times of financial distress and thus provide an insurance function in the poorly developed markets (Strachan, 1976; Khanna and Yafeh, 2005). And the group affiliates are no more privileged over the standalone firms as the institutions developed in the country (Khanna and Palepu, 2000a; Purkayastha, 2013). A number of researchers propose that group firms suffer from the problems of serious agency conflicts among ultimate controlling shareholders and minority shareholders. These dominant shareholders are engaged in the expropriation of firms' resources for their private benefits that costs to minority shareholders (Lins and Servaes, 2002; Lee et al., 2008).

A number of studies document that group affiliates perform higher than standalone firms whereas some others suggest lower performance and a few of them show mixed results. (Khanna and Rivkin, 2001) investigate the performance of group affiliates relative to standalone firms in 14 emerging economies and find mixed results. The findings suggest that group firms are superior in performance than standalone firms in 3 countries and however, these perform better but not significantly better than standalone firms in other 3 countries. Group affiliates perform lower than standalone firms in 1 country and these insignificantly underperform than standalone firms in 2 other countries. Group affiliates are not better or worse in rest of the 5 countries. Kim (2012) and Gunduz and Tatoglu (2003) document that affiliation with Korean chaebols by itself is not value enhancing activity. Gunduz and Tatoglu (2003) take a sample of 84 group affiliates and 118 standalone firms in Turkey. Based on both accounting and stock market measures of performance, they observe that group affiliates are not significantly different than standalone firms.

Chang and Choi (1988) employ a sample of 182 firms covering 1975-1984 period in South Korea. The regression results indicate that diversified group firms outperform (in terms of ROA and ROE) than standalone firms. Further, group diversification-performance relationship is strongly positive. The small as well as large diversified group firms tend to show higher performance than standalone

firms. However, the strength of positive relationship is higher for large diversified group than small diversified group firms when compared with standalone firms. Similarly, Buysschaert et al. (2004) find higher financial performance of group affiliated firms relative to unaffiliated firms listed on Brussels Stock Exchange. The study covers a data of 20 BGs in Belgium. Besides the superior performance of BGs, the researchers also find evidence that BGs suffer from the problems of 'funds misallocation' among the group firms that affect firm performance negatively.

Lee (2002) examines few issues including emergence and performance of Korean chaebols. He suggests that chaebols encourage their affiliates entering into new markets and help them by providing inputs and cross subsidies at the initial stages. However, he documents tha Korean chaebol affiliates decline in performance gradually due to the development of institutions in the country. Further, these firms suffer from the problems of controlling minority strcture that led them over-investment and in-efficient investments.

Ma et al. (2006) focus to examine the performance impacts of changes in ownership structure of the firms in China. Histrorically, government favors BGs extraordinaryily and government ownership is well pronounced in Chines firms. However, there is a change in the ownership pattern and private institutional investors are also visible now. The results indicate that coefficient of interaction between group affiliation and government ownership is positive. The findings suggest that BGs with government shareholdeings perform (in terms of Tobin's Q) better than standalone firms.

Carney et al. (2009) observe higher performance (measured by excess ROA) of group firms relative to standalone firms in 1999 in China. They observe a declining trend in performance of group firms and further, these firms do not seem better than standalone firms by the year 2004. The results are consistent with the market failure theory (Leff, 1978). The institutions are gradually developed in China and BGs lose their advantageous effect over the standalone firms. The study also finds positive impact of state ownership on firm performance. However, the positive performance impacts of state ownership also gradually decrease. These results

suggest that government is motivated in developing the institutional setting to encourage the standalone firms in China.

The research of Claessens et al. (1999a) uses a data of 2,187 firms from nine Asian countries for 1991-1996 periods. The 'Excess value' is employed as a performance measure. The results indicate that group affiliated firms enjoys superior performance than standalone firms in the developing markets whereas opposite is true for developed markets. The findings confirm the role of BGs in mitigating the financial problems of their affiliates in the developing countries (having underdeveloped institutional setting).

Gaur and Delios (2006) attempt to examine the performance of group affiliates relative to standalone firms in India by employing a longitudinal data of 1993-2004. They use three performance measures including sales growth, ROCE and PAT (net profits/assets). Random-effect generalized least square regression is used to estimate the relationships. The findings indicate that group affiliates underperform than standalone firms. Further, the declining trend in group firms' performance is well pronounced in latter periods. These findings are consistent because institutional infrastructure development reduces the privileges of group firms over the standalone firms.

Along the same lines, the study of Kumar et al. (2008) covers 1990-2006 periods and observes that group affiliates are not better in financial performance than standalone firms during the latter periods characterized by financial development in India. Further, Pattanayak (2009) examines the comparative performance of group affiliated firms and standalone firms in India by taking a sample of 1,833 companies for 2001-2004 period. The findings propose that group firms are not superior in performance relative to non-group firms after the development of financial institutions in the country. Contrary to the above studies in India, Ghosh (2010) finds higher performance (measured by Adjusted Q and ROA) of group affiliates than standalone firms. However, consistent with the earlier studies of Khanna and Palepu (2000a) and Khanna and Palepu (2000b), he finds a non-linear group diversification-performance relationship. Group diversification initially (at lower

level) negatively affects firm performance and then it affects positively firm performance at higher levels of group diversification.

Lee et al. (2008) investigate the comparative performance of Korean chaeboles relative to standalone firms in South Korea. The study covers 1984-1996 periods. It constructs Excess value as performance measure. The findings indicate that chaebols trade at a premium (perform better than standalone firms). However, there is a declining trend in both Excess value-sales and Excess value-EBIT for chaebols. The group premium declines in every sub-period and finally positive coefficients of group affiliation dummy for both sales and EBIT multipliers are turned into negative coefficients in the last sub-period. The researchers suggest that findings are consistent with market failure theory (Leff, 1978). However, Korean chaebols are not value enhancing rather these are value destroying organizations in late 1990s when market institutional infrastructure is developed in the country.

The impact of group diversification on firm performance may not be linear in nature. The affiliates of large diversified BGs may show higher performance than affiliates of small diversified BGs. Large BGs possess resources, skills and capabilities and political cloute that might not be possessed by small diversified BGs. The study of Khanna and Palepu (2000b) shows underperformance of group affiliates relative to non-group firms in terms of ROA. However, there is no significant difference in performance of group affiliates than non-group firms in terms of Tobin Q. Moreover, the study observes non-linear group diversification-performance relationship. The regression results (based on both performance measures) reveal that group diversification initially affects firm performance negatively and however, it affects positively as group diversification exceeds a certain threshold level. The study also employs three group diversification dummies and shows that firms affiliated with most diversified BGs outperform than firms affiliated with least diversified and intermediate diversified BGs as well as standalone firms.

Khanna and Palepu (2000a) observe a similar nature of group diversification-performance relationship in Chile. Based on a sample of 114 companies covering a period of 1988-1996, they find that group diversification initially declines the firm performance and then it started to enhance firm performance after a certain level

of diversification. Group affiliation dummy is positive showing that group affiliates perform better than standalone firms and however, group affiliation-performance relationship evolves differently as time passes. The positive performance impacts of group affiliation started to decrease with the passage of time. The researchers relate these findings with the market failure theory. They suggest that group firms perform better than standalone firms due to weak institutional infrastrure and these tend to decline in performance as the quality of institutional setting improves in Chile (due to the course of reforms and liberalization programs initiated in 1990s).

MULLAINATHAN (2002) investigate the tunneling potential of ultimate controllers in BGs by employing a data of 1989 to 1999 in India. The findings clearly indicate that BGs are engaged in expropriation of firm resources at the cost of external shareholders. They find higher performance of group firms facing lower tunneling. Lins and Servaes (2002) take a sample of 7 emerging countries and find that diversified group affiliates trade at a discount of about 7 percent relative to their corresponding standalone firms. Further, they also find lower profitability of diversified group affiliates relative to standalone firms. The researchers find even higher discount when control rights of the ultimate controllers exceed than their cash flow rights. They suggest that ultimate controllers of group affiliates are engaged in expropriation of minority shareholders that causes severe agency conflicts among the ultimate controllers and minority shareholders.

White (1974) finds that group affiliates are not significantly different than standalone firms in terms of profitability, firm size, industry membership and control. However, he finds that sanctioning of the lecenses by the government is well pronounced for the family dominated group firms. The findings strongly support to political economy argument. Ahmad et al. (2016) take a sample of textile sector firms and observe a higher performance of group affiliates than standalone firms in Pakistan.

Contrarily, Gohar and Karacaer (2009) employ 166 firms listed on Karachi Stock Exchange covering 2002-2006 period. The researchers find that group firms underperform than standalone firms in terms of both performance measures e.g., ROA

and Tobin's Q. Further, the results show a significantly lower Tobin's Q and ROA for firms affiliated with least, intermediate and most diversified group firms when compared with standalone firms. The results propose that group firms suffer from corporate governance problems and stress the need for tightening the governance system in the country.

The study of Ghani et al. (2010) employs a large sample of firms listed on Karachi Stock Exchange. The study covers data for two years e.g, 1998 and 2002 period and finds mixed results. The study is restricted to descriptive analyses only. The findings show that group firms are better in terms of accounting profitability 'Return on Assets' whereas these are worse than non-group firms in terms of market related performance variable 'Tobin's Q'. The findings of lower Tobin's Q suggest that dominant group controllers are engaged in tunneling firm resources at the cost of minority shareholders.

A number of researchers document that BGs play a significant role of risk sharing in many countries. Risk sharing may be through transferring surplus funds from one firm to another facing shortage of funds. Further, it may be through resources sharing, cross subsidies, benfits in taxes, etc. Khanna and Yafeh (2005) find evidences that BGs play a vital role of risk sharing for their member firms in emerging economies like Brazil, Taiwan, Thailand, South Korea and India. They suggest that inter-group transfer of resources among the member firms causes reduction in riks and uncertainty. Estrin et al. (2009) find tha BGs are more concerned with group survival and stability rather maximization the profitability of group affiliates.

From the above discussion, it is clear that group affiliation may affect firm performance in a significant way. Here, the study attempts to examine the performance impacts of BG affiliation and group diversification. A brief literature review of the studies showing comparison of performance across group affiliates with stand-alone firms is done. Further, the comparative studies are focused showing comparison of performance across least, intermediate and most diversified group firms relative to standalone firms.

In this part of thesis, the study examines the impact of group affiliation and group diversification on firm performance. Further, it examines the ability of diversified business groups in risk sharing among their affiliates. In Pakistani context, the findings of the earlier studies regarding the performance of group firms relative to standalone firms are mixed. Ghani et al. (2010) find higher accounting performance (measured by ROA) of group affiliated firms than standalone firms during the period of 1998 to 2002. They draw conclusions based on descriptive statistics (mean/median values) only. Contrarily, Gohar and Karacaer (2009) observe lower accounting performance of group affiliated firms than standalone firms during the periods of 2002 to 2006. The present study addresses previously non-researched issues like investigating the group affiliation and group diversification premium/discount (measured through Chop Shop methodology) , Excess Profitability and risk sharing role of business groups.

H1: There is a significant relationship between group affiliation/group diversification and excess value.

H2: There is a significant relationship between group affiliation/group diversification and excess profitability.

H3: There is a significant relationship between group affiliation/group diversification and profits variability.

2.2 Group Affiliation, Ownership Structure and Firm Performance in Pakistan

BGs are the most visible in the corporate sectors of Pakistan. BGs flourished aggressively in the past and however, the recent studies document that these tend to decline in performance (Gohar and Karacaer, 2009). Many researchers suggest that group firms suffer from severe agency problems amongst the dominant shareholders and minority shareholders. The ultimate controllers use complex shareholdings and pyramidal structures, cross-shareholdings inter-locking and

cross-directorateship inter-locking to attain ultimate control of many firms simulataneously with lesser cash flow investment. Such shareholding pattern results in excess control than cash flow rights of the ultimate controllers in group firms. This is also referred as controlling minority structure in finance literature. The disparity between ownership and control motivates the ultimate controllers engage in diversion of firms' resources for their private benefits consumption and it is the root cause of serious agency conflicts in group firms. The focus of corporate governance shifts away from the principal-agent conflicts to principal-principal (dominant shareholders-minority shareholders) conflicts. Ownership strcture determines the incentives of the ultimate controllers in the firm. The cash flow rights of the ultimate controllers restrict them from diversion of firms' resources consistent with the incentives effect (Bebchuk et al., 2000; Lins and Servaes, 2002; MULLAINATHAN, 2002).

2.2.1 Inside Ownership and Firm Performance

Ownership is seprate from management in public firms and it is the basis for agency problems. The relationship between inside ownership and firm performance receives a greater attention in the finance literature. Inside ownership aligns the interests of the insiders with minority shareholders and is beneficial in mitigating agency problems. The insiders with substantial cash flow interest in the firm are keenly motivated in monitoring of firms due to incentives effect that contribute to enhanced firm performance (Jensen, 1986). It ensures that these will not engage in diversion of firms' resources to themselves by way of transfer pricing, inside trading or inefficient investments, etc. as discount in share price may cost them more than their private benefits. Incentives alignment is the most influential monitoring device escaping minority shareholders' that discourages insiders from expropriation of minority shareholders (La Porta et al., 2000a; MULLAINATHAN, 2002).

However, inside ownership at higher levels may affect firms' performance inversely due to entrenchement effect (Demsetz, 1983). The ultimate controllers have full control over the firm (without any fear of removal from the board) due to their higher owernship stakes. In this situation, they may engage in expropriation of

firm's resources that may be costly to minority shareholders and thus detrimental for firm's value. The dominant controllers not only decide how firm should be run but also how profits should be distributed among the shareholders (Claessens et al., 2002). This is particularly important in Pakistani environment where family dominated BGs are most common. These BGs mostly own privately held firms. With the growth of their businesses, they get few firms listed on stock exchange as wel to access the capital market's resources. Shah and Hussain (2012) find an inverse relationship between inside ownership and firm performance in Pakistan. They strongly propose that agency problems become severe with increase in inside ownership.

It depends upon the level of inside ownership whether it positively or negatively affects firm performance. Itturalde et al. (2011) observe positive performance impacts of inside ownership between 0-35% levels. Hower, opposite is true when inside ownership is between 35-70%. Similarly, Arshad et al. (2014) also report that non-linearity exists in inside ownership-performance relationship in Pakistan. Inside ownership positively affects firms' performance only at moderate level. It negatively affects the performance of firms at initial level and at a very higher level. They suggest that inside ownership at lower level and very high level create agency problems.

2.2.2 Ownership Concentration and Firm Performance

Ownership is concentrated in the firms of Asian countries (Claessens et al., 2000). A concentrated ownership represents an ownership structure where large proportion of shareholding of a firm is held by a small number of shareholders. Agency theorists suggest that concentrated ownership is a major device in controlling the agency problems arised due to ownership-control separation. The dominant shareholders are very effective in monitoring of the managers' activties. The incentives of the dominant shareholders are aligned strongly with the interests of minority shareholders. In most of the cases, these dominant shareholders are managers as well. Therefore, a traditional conflict of interest between managers and shareholders is reduced that affects firms' performance positively.

The monitoring effects of concentrated ownership seem more visible in those countries with weak external system of shareholders' protection. The shareholders are forced to engage in monitoring of management that could be possible with large stakes of ownership in the firm and thus, concentrated ownership substitutes for missing investors' protection system in the country (Heugens and Lander, 2009; Filatotchev et al., 2013). Many researchers document positive impact of ownership concentration on firms' performance in different countries. Xu and Wang (1999) find positive relationship between ownership concentration and firm performance in China. In Pakistani context, Javid and Iqbal (2008) observe that concentrated ownership is positively related with firms' performance. They relate the positive performance impacts with the under-developed nature of investors' protections system in the country. Nguyen et al. (2015) examine the concentrate ownership-performance relationship in cross country context and find evidence of positive relationship in both the countries e.g., Singapore and Veitnam. The strength of positive relationship is stronger for a country with under-developed sharehoders' protection system e.g., Veitnam than other country with well developed investor's protection system e.g., Singapore. Wang and Shailer (2015) employ a meta-analysis in 18 emerging countries and find evidence of weak concentrated ownership-performance relationship for firms in those countries where governance system is strong. Along the same lines, using meta-analysis in Asian countries, Heugens and Lander (2009) observe that concentrated ownership is an influential monitoring device in countries with weak governance system.

However, dominant shareholders may be motivated in exercising the private benefits of control. This ownership structure may harm minority sharheoldes' value if dominant shareholders opt to engage in tunneling firms' assets for their personal gains and it may create conflict of interest between dominant shareholders and minority shareholders (Porta et al., 1999; Young et al., 2008; Bebchuk and Weisbach, 2010; Filatotchev et al., 2013). A number of scholars report a negative ownership concentration-performance relationship due to expropriation effect (Hu et al., 2010; Ongore, 2011; Tsegba et al., 2014). In Pakistani context, Ali and Saeed (2011) find negative impact of concentrated ownership on firm performance.

However, the study of Shah and Hussain (2012) concludes that concentrated ownership is not significantly related with firms' performance. Some other studies for instance Pham et al. (2011), Schultz et al. (2010) among others also report that concentrated ownership is not influential in affecting firms' performance.

2.2.3 Controlling Minority Structure (Ownership Disparity) and Firm Performance

Controlling minority structure (CMS) represents an ownership structure of a firm where insider/ultimate controller attains an ultimate control over the firm with least cash flow investments. CMS is also named as 'ownership disparity' or 'divergence between ownership and control'. This ownership structure lacks incentives alignment of ultimate controller and it also suffers from entrenchment problem. The group firms are prone to such ownership structure. The ultimate controller uses cross-shareholdings and pyramidal structures, cross-directorateships and dual class shares in order to enjoy excess control than ownership. As ultimate controller owns a small fraction of ownership of the firm and he enjoys excess control than his cash flow rights, therefore, he is fully involved in diversion of these firms' resources to his wholly owned privately held firms or those firms where he has higher cash flow rights. Agency conflicts among the ultimate controllers and minority shareholders are troublesome in these firms (Bebchuk et al., 2000; MULLAINATHAN, 2002). The ultimate controller may divert firms' resources towards himself through different ways. He may engage in transfer pricing, inside trading, making over-investment and in-efficient investment decisions and employing non-professional and incompetent managers (normally relatives and close friends) at executive positions.

Many researchers find an inverse relationship between ownership disparity and firms' performance in different countries. Laeven and Levine (2007) employ a data of 13 European countries and find that ownership disparity negatively affects firms' performance. Along the same lines, a negative relationship is reported

by Porta et al. (2002) while studying ownership structure-performance relationships in 27 advanced markets. Further, similar findings are reported in many other studies for instance Villalonga and Amit (2006) for US, Bozec et al. (2004) and Bozec and Laurin (2008) for Canada, Lins (2003), Joh (2003) for Korea and MULLAINATHAN (2002) for India.

The sources of excess control than cash flow are given below:

Cross-shareholding Inter-locking

The ultimate controllers may ehance control than cash flow rights through cross-shareholding inter-locking. Suppose firms X and Y own 50% shares in each other and Mr. A (member of a business group) has 10% shares in both of these two firms. Mr. A may have a control of 60% in each firm X and Y although his cash flows interest is 15% (50%x10% + 10%) in each firm.

Pyramidal Ownership Structures

An ultimate controller may achieve an ultimate controller over many firms simultaneously with least cash flows through complex pyramidal ownership structures. Suppose a business group owns 100% firm A. This firm acquires shareholdings of 50% in each of two other firms B and C at first tier. These two firms further own 50% shareholding in each of few other firms at second tier. The firms at second tier own 50% shares of some other firms and so on. The ultimate controller of a business group will have assets worth more under his control than his actual cash flow investments. He will have a control of 50% with effective cash flows of 25% (50% x 50%) at second layer firms and he will control firms even with lesser cash flows of 12.5% (50% x 50% x 50%) at third layer.

Cross Directorate-ship Interlocking

The group members of a BG use cross-directorateship inter-locking to attain an ultimate control over other firms and influence board's decisions for their private benefits.

Dual-class Shareholding

In some countries, group controllers sell dual class of shares (having lower voting power) to outside shareholders. Thus, the ultimate controllers are able to keep substantial control without having invested more cash in the firm. Holmén and Hogfeldt (2005) document that Wallenberg family has more than 40% voting rights although it has invested about 1% cash in Ericsson.

2.2.4 Institutional Ownership, Domestic Private Institutional Ownership and Government Institutional Ownership

Institutional investors are the key player of the corporate governance system that can affect significantly firm performance. They possess skills and expertise as well as information related to investments and stock markets. They are more foresighted and are capable of effective decisions making. Also, they normally have larger stakes in the shareholdings of the firms. Therefore, they possess both ability and motivation in monitoring of the managers' activities and influencing board decisions. A number of researchers find that institutional shareholding is positively related with firm's performance [see for instance Fung and Tsai (2012); Ameer et al. (2010); Barzegar and Babu (2008)]. Many studies suggest that institutional ownership-performance relationship is positive in Pakistani context [see for instance Ali Shah et al. (2009); Irshad et al. (2015); Afza and Nazir (2015); Khan and Nouman (2017)].

Domestic private institutional investors are concerned with the safeguard and growth of their investments. The representatives of such institutions are equipped with more valuable information and skills related to finance. Further, their growth is linked with the future prospects of the firms. Thus, these are fully motivated in monitoring of the firm and affecting the firm's performance positively. Government institutional investors are also very effective in firm's monitoring. Unlike domestic private institutional investors, these suffer from some governance failures. The

representatives of the government institutions are generally bureaucrats. These representatives are not equipped with the requisite information about investments. Further, these are not highly motivated in supervision of managers' activities and board decision as career growth of these representatives is not strongly associated with their performance. Moreover, the government organizations are welfare oriented rather profits oriented. These factors reduce the monitoring strength of government institutional investors particularly for group affiliates. The ultimate controllers might influence government intitutions' investment in group affiliates due to strong political connections that further reduces the monitoring ability of these government institutional investors (Ramaswamy et al., 2002).

The recent corporate governance literature highlights a significant moderating role of exeternal governance system in the country. Kumar and Zattoni (2013) document varying performance impacts of firms' internal corporate governance depending upon the quality of external governance system. Similar findings are reported by Essen et al. (2013) and Aslan and Kumar (2014) in recent studies. Firm level agency conflicts are strongly affected by external governance system in the country (Anderson and Gupta, 2009; Aslan and Kumar, 2012; Ngobo and Fouda, 2012). The internal corporate governance-performance relationship is more influential in the country with weak external governance system. These suggest that institutional investors and particularly domestic private institutional investors are more influential in the monitoring of group firms.

2.2.5 Foreign and Domestic Ownership

Foreign investors are more informative and they make investment decisions after reasonable assurance of good corporate governance of the firm. They are more effective in monitoring of managers' activities and also their presence improves board's decisions' quality. Griffith (1999) and Ali Shah et al. (2009) among others find positive impact of foreign ownership on firm performance. However, recent study of Khan and Nouman (2017) observe that foreign ownership in not influential in affecting firm performance in Pakistan.

Foreign institutions are well equipped with information, technical know as well as resources and capabilities (technology) that could be embedded in firm. It may in turn enable the firm operate more efficiently than other firms operating in the domestic country. Multinational corporations perform differently than domestic firms (Boardman et al., 1997). Bentivogli and Mirenda (2017) document that foreign subsidiaries show superior profitability than domestic firms in Italy. Abbas et al. (2017) examine the performance of foreign subsidiaries, partly foreign controlled firms and domestic firms. They find an inverted U-shaped relationship between foreign ownership and firm performance.

2.2.6 Selected Literature Review

Porta et al. (1998) attempt determining the ultimate controller of companies in 27 richest countries of the world. They categorize the firms of every country into two samples e.g., smallest and largest firms. They observe that widely held firms are not well pronounced even in the countries of strong investors' protection. In fact, most of the firms are controlled by dominant family shareholders. The state controls substantial number of firms whereas widely held financial/non-financial institutions control a small number of firms in these coutries. They document that ultimate controllers use cross-shareholdings and pyramidal ownership structures to extend their conrol. They are engaged in tunneling firm resources for their private benefits. The study stresses the need for taking steps by the regulatory bodies in restricting the tunneling potential of the dominant controllers.

Along the same lines, Claessens et al. (1999b) investigate the ownerships structures of firms in East Asian economies including Indonesia, Malaysia, Philippines, Thailand, Taiwan, Singapore, Hong Kong, Korea and Japan. The findings reveals that cross-shareholdings and pyramidal structures are used by dominant controller in order to enhance the control than cash flows. The divergence between ownership and control is well pronounced in Singapore, Indonesia and Japan and about two-third firms are controlled by single dominant controller. Most of firms are managed by the dominant shareholders and about 60% firms are under the control of dominant families. The ultimate controllers are motivated in tunneling firm

resources. They observe that government controlled firms are common in Korea, Singapore, Malaysia, and Indonesia. Most of the firms are family dominanted in Indonesia and Thailand and however, widely held firms are well pronounced in Japan. Family dominated firms are prone to control enhancing mechanism used by dominant family controllers particularly in Singapore, Korea and Taiwan. Furthe, study the finds evidence of substantial control of families over the corporate assets of the coutries. The largest 10 families control about half of the corporate assets of publicly listed firms in Indonesia, Philippines and Thailand.

Joh (2001) employs a large sample of 5,829 firms for 1993-1997 periods. He examines the performance impacts of group affiliation and corporate shareholdings in South Korea. The study finds that group firms under-perform than standalone firms. Further, there is a non-linear relationship between ownership concentration and firm performance. The firms with higher concentrated ownership perform better than firms with less concentrated ownership structure. There is an inverse relationship between ownership disparity and firm performance. The study suggests that ultimate controllers are motivated in expropriation of firm resources to extend their personal benefits at the cost of minority shareholders. This ownership structure is harmful for firms and it the basis of agency conflicts among the controlling shareholders and minority shareholders.

The relationship between corporate ownership and firm performance is further investigated by Lemmon and Lins (2003). They employ 800 firms of 8 East Asian economies. The study finds that Tobin's Q of the firms facing expropriation by the ultimate controllers is 12% less than other firm not facing such problems. Those firms suffering from tunneling problems yield 9% lower stock returns. The researchers suggest that ultimate controllers use cross ownership and pyramidal structures to extend their control than cash flow rights. The findings clearly indicate that divergence between ownership and control motivates the ultimate controllers to engage in tunneling firm resources at the cost of external shareholders.

Lee et al. (2002) investigate the investment and utilization capacity of Korean chaebols and attempt to ansser why these firms tend to decline in performance

relative to standalone firms? They particularly focus the controlling minority structure (ownership disparity). The study covers 1984 to 1997 period. Ownership disparity is inversely related with firm investment. Higher the divergence between ownership and control, it enhances the ability of ultimate controller in expropriations of firms' resources to extend the private gains and it results in under utilization of firms' capability and resources. The incentives of ultimate controller are extended when a firm expands. The findings suggest that group affiliates suffer from the problems of over-investment and under-utilization of firm resources.

Abdullah et al. (2011) take a panel data of 158 KSE listed firms for a period of 2003-2008 and observe that group ownership is not influential and however group ownership squared negatively affects firm performance. The findings are consistent with entrenchment effect and suggest that when group ownership exceeds a certain threshold level, it affects significantly negatively firm performance. This is a clear indication of some sort of expropriation of the minority shareholders. Khan and Nouman (2017) observe that corporate ownership strongly affects firm performance in Pakistan. They find that inside ownership and family ownership are negatively related with firms' performance. Whereas, associated companies' ownership is positively related with firm performance.

Some researchers find a non-linear relationship between corporate ownership and firms' performance. De Miguel et al. (2005) investigate the effect of inside ownership and concentrated ownership on firm performance in Spain. The findings show that concentrated ownership between a range of 0-87% enhances firms' performance whereas it starts to decrease the performance after that threshold level. The positive performance impacts of concentrated ownership at initial levels are consistent with incentives effect. Further, negative performance impacts of concentrated ownership at higher levels support entrenchment effect. However, the study finds U-shape relationship between inside ownership and firm performance. The inside ownership between 0-35% enhances firm performance whereas inside ownership between 35-70% decreases the performance. Again beyond that limit, inside ownership positively affects firm performance. In contrast, Lee (2008) observes that ownership concentration at intermedidate levels positively affects firm

performance (measured by ROA). Moreover, institutional ownership and foreign ownership seem not influential in affecting firm performance in South Korea.

Lins (2003) investigates the effect of inside ownership and moderating role of non-management external blockholdings in affecting firm performance. Further, impact of ownership wedge (ownership disparity) on firm performance is examined. The study employs 1,433 firms of 18 economies. The results indicate that wedge between ownership and control negatively affects firm performance. Inside ownership between 5-20% negatively affects firm performance if management is also blockholder (owns large block of shareholdings) of the firm and however, it does not affect negatively if outside blockholders are present. The findings propose that outside blockholders (blockholders other than management e.g., individuals and/or institutions) possess greater monitoring ability and thus helpful in mitigating agency problems among the dominant shareholder and minority shareholders. Kaserer and Moldenhauer (2008) suggest corporate ownership is an influential factor in affecting firm performance in Germany. The findings indicate that inside ownership is positively related with firm performance.

Ali and Saeed (2011) take a sample of 67 firms listed on Karachi Stock Exchange and attempt to examine the impact of inside ownership on firm performance in Pakistani context. They find inverse relationship between inside ownership and firm performance. The results indicate a higher performance (Return on assets, Return on equity, Marris ratio and Tobin's Q) for those firms having lower inside ownership e.g., 1.5%. Further, average performance is observed for firms having medium level of inside ownership e.g., 9.1%. The lowest performance is observed for those firms with higher inside ownership e.g., 9.9%.

Laeven and Levine (2007) take a sample of 1,657 listed firms of European countries and observe the presence of multiple blockholders in about one-third of the sample firms. Further, firm valuation significantly varies for those firms with multiple blockholders from the other firms being controlled by a single dominant shareholder or a widely held firm. The study also finds positive impact of ownership concentration and however, there is a strong negative effect of divergence between ownership and control on firm performance. Moreover, difference between cash

flow rights and control rights of the largest two shareholders negatively affect firm performance.

While exploring the impact of corporate governance on firm performance, Bozec et al. (2010) takes a sample of 130 Canadian firms for a period of 2002-05. The corporate governance index is strongly positively related with firm performance in a situation when a firm is facing disparity between ownership and control. However, the relationship is not influential in affecting firm performance when cash flow rights and control rights of the dominant controller are same. The findings suggest the need for strong monitoring and governance of those firms with ownership-control disparity to reduce tunneling potential of the ultimate controllers. It will in turn helps in reducing agency problems amongst the shareholders. In an attempt to investigate the issue of ownership and control in Brazil, Aldrighi and Vinícius Marques de Oliveira (2007) find results supporting the 'expropriation hypothesis'. The voting rights of the dominant controller are negatively related with firms' performance. Excess control is negatively related with firms' performance. Those firms with large stakes of foreign investors are better in performance than family firms.

The central point of the study of Zengquan et al. (2004) is examining the valuation effects of corporate shareholdings in China. The findings support incentives effect. The cash flow rights of the ultimate controllers are strongly positively related firm performance. The ownership of ultimate controllers aligns their incentives but the excess control entrench them and causes divergence of interest. King and Santor (2008) investigate the impact of excess control (achieved through dual class share structure) on firm performance (measured by Tobin's Q and ROA) by taking 613 Canadian firms covering a period of 1998-2005. The results indicate that Tobin's Q is significantly lower for firms issuing dual class of shares than other firms issuing single class of equity. These firms are not significantly different in terms of ROA.

Lan and Wang (2004) focus on the investment channel being used by the ultimate controllers for the consumption of their private gains. It is very difficult for a court to determine whether the investment decision is motivated by the desire of the ultimate controller making personal benefits even in the countries with very good

judiciary system. The ultimate controllers are not only engaged in diversion of cash to themselves but also they pursue inefficient and over-investment decisions. The future incentives of the controllers increase as the firm size increases. The researchers also document that strong investors protection system in the country ensures both lesser investment distortions and cash flow diversion both lead to enhanced firms' valuation. Further, there is an inverse relationship between investors protection system and ownership concentration. The concentrated ownership substitutes for weak law enforcement system.

Xu and Wang (1999) focuses on ownership concentration and ownership identities-performance relationships in China by employing three measures of performance including market to book value, ROE and ROA. The results show that concentrated ownership is positively related with the performance of firms. The strength of positive relationships is higher for those firms having large ownership stakes of institutional investors relative to other firms with large stakes of ownerships by the state. Javid and Iqbal (2010) take a sample of 50 KSE listed firms for 2003-2008 periods. They find that ownership concentration strongly positively affects firm performance in Pakistan. They suggest that concentrated ownership substitute for weak regulatory system in the country. Also, Khan and Nouman (2017) find that concentrated ownership is positively related with firm performance in Pakistan.

Nguyen et al. (2015) study the ownership concentration-performance relationship in Veitnam and Singapore. They focus if the impact of concentrated ownership on firm performace is consistent across both of the countries e.g., under-developed (Veitnam) and well developed external governance system (Singapore) or it varies from country to country depending upon the level of investors' protection system in the country? The findings indicate that ownership concentration positively affects firms' performance in both countries. These results support the agency theory. The interests of the dominant shareholders are aligned with the external shareholders and further these are motivated in monitoring of the managers due to their large stake in shareholdings of the firm. Having motivation and ability in monitoring of activities of the managers, the shareholdings of the dominant shareholders is strongly positively associated with firm performance. However,

the strength of ownership concentration-perofrmance relationship is stronger in case of Veitnam. These findings are consistent with the expectations as ownership concentration substitute for weak investors' protection system in the country.

Wang and Shailer (2015) use meta-analysis across 18 emerging countries and find evidence of weak effect of concentrated ownership on firm performance in the countries with strong investors' protection. Along the same lines, Heugens et al. (2009) also employ meta-analysis and suggest that positive performance impacts of concentrated ownership are well pronounced in those countries where regulatory system is weak.

Taking a panel data of 50 ISE listed firms for the period of 2005-2008, Karaca and Eksi (2012) find mixed results. The findings show that concentrated ownership is positively related with ROA whereas it is insignificantly related with Tobin's Q. Irshad et al. (2015) find negative impact of ownership concentration on firm performance in Pakistan. Ongore (2011) and Tsegba et al. (2014) among others report a negative ownership concentration-performance relationship. There are some evidences that concentrated ownership structure does not significantly affect firm performance. Pham et al. (2011) and Schultz et al. (2010) among others document that ownership concentration-performance relationship is not influential in affecting performance in Australia. Similar relationship is reported by Fazlzadeh et al. (2011) for Iran.

The study of Barzegar and Babu (2008) concludes that institutional shareholding plays a vital role in affecting firms' performance in Iran. Fazlzadeh et al. (2011) employ sample of 137 Tehran Stock Exchange listed firms. The study covers 2001-2006 periods and the findings indicate that institutional shareholding positively affects whereas institutional shareholding concentration negatively affects firm performance. The positive performance impacts are reported by many other studies [see for instance Ameer et al. (2010); Fung and Tsai (2012)]. Ali Shah et al. (2009), Afza and Nazir (2015) and Khan and Nouman (2017) find that institutional ownership is positively related whereas Irshad et al. (2015) find as insignificantly related with firm performance in Pakistan. Many researchers observe a positive relationship between foreign ownership and firm performance in

different countries [see for instance Griffith (1999); Ali Shah et al. (2009); Ameer et al. (2010) among others].

In this part of thesis, the study investigates the relationship between ownership structure and firm performance. The focal point is controlling minority structure. The contribution lies in examining whether ownership identities like inside ownership, ownership disparity, relational ownership, ownership concentration and institutional ownership significantly affect the firm performance in Pakistan. Further, if there is any difference of relationship of domestic private institutional ownership and Government institutional ownership in affecting firms' performance?

The studies discussed above show the effect of corporate ownership on firm performance. These led us to the following hypotheses.

H1: There is a significant relationship between corporate ownership and firm performance.

H2: There is a significant relationship between ownership disparity and firm performance.

2.3 Business Groups and Dividend Policy in Pakistan

Business groups are well pronounced in the corporate sector of Pakistan. Pyramidal firms are more common in these BGs. BGs use cross-ownership inter-locking, pyramidal ownership structures and cross-directorateship inter-locking to achieve an ultimate control over many firms. They use diversification and invstment activity (through investment of group affiliates) to control many other firms simultaneously with least cash flow invstments. Such ownership structure causes ownership disparity (divergence between ownership and control) of the ultimate controllers. This is particularly important in pyramidal group firms. The expropriation hypothesis suggests that ultimate controllers of group firms are motivated in tunneling firm resources from those firms where they have lesser cash flow rights to those firms where they have higher cash flows rights including wholly owned

private firms. Their tunneling potential is extended with the growth of firm size. Therefore, they discourage dividend payments to bring assets worth more under their control (La Porta et al., 2000b). In this way, their strength in expropriation of firm resources for future tunneling is enhanced. This phenomenon is named as 'over-investment agency problem' (Lee, 2002).

A lot of research appears on the issue of dividend policy in many countries with different institutional, legal and tax system and prevalence of business groups (Aggarwal and Dow, 2012). The principal contribution lies in investigating the dividend policy of group firms in general and pyramidal group firms in particular relative to their counterpart standalone firms in Pakistan. The study also examines the role of group diversification in affecting dividend policy. The research focuses the 'Expropriation hypothesis' and 'agency costs minimization model' to explain the dividend behavior of diversified group firms in Pakistan. Further, ownership disparity and relational ownership variables are included in the agency cost minimization model. The study also examines the role of institutional investors (domestic private institutional investors and government institutional investors) in affecting dividend policy in Pakistan.

2.3.1 Determinants of Dividend Policy in Pakistan

Although, a number of scholars present their opinion to answer a question what factors influence firm's dividend decision? DeAngelo et al. (2006) present a new insight of dividend 'life cycle theory' which proposes that firms at maturity stage pay higher dividends rather making investments in negative NPV projects. Hoberg and Prabhala (2008) demonstrate that conservative managers are likely to distribute generous dividends in order to maintain firm's risk at lower levels. DeAngelo et al. (2004) propose a 'dividend disappearing argument' that firms at growth stage and newly listed firms are normally non-dividend paying firms. Firm ownership is widely documented factor in determining dividend policy in many countries (Rozeff, 1982; Easterbrook, 1984; Jensen, 1986; Farinha and López-de Foronda, 2009; Ahmad and Javid, 2010). Given the varying nature of shareholding pattern of group firms and pyramidal firms, the extent to which the researchers may apply

the results of existing studies to group affiliates in Pakistani context is still an open question.

2.3.2 Expropriation Hypothesis

La Porta et al. (2000b) document that ultimate controllers are motivated in tunneling firm resources through a mechanism that cost to external shareholders. They discourage dividend payments and retain cash within firm in order to bring assets worth more under their control for private benefits' consumption in future. In-efficient investment and higher investments are the tools used by these controllers for making private benefits. They use control enhancing devices to extend their ability in diversion of firm resources to themselves. This behavior is well pronounced in the countries with weak investors' protection.

2.3.3 Substitution Hypothesis

La Porta et al. (2000b) postulates that entrenched controllers are prone to firms in the countries with weak investors' protection system. These are fully encouraged in the diversion of firms' resources to themselves that cause agency problems amongst these entrenched controllers and outside shareholders. The outside shareholders may discount share price that may result in reduction of shareholding value more than personal benefits of ultimate controllers. Also, cost of funds may increase and there may be difficulty in issuance of new equity and/or debts. Thus, the ultimate controllers may be eagerly motivated in paying generous dividends to build reputation in the market. This will help in reducing both agency conflicts and cost of funds.

2.3.4 Agency Costs Theory of Dividends

Ownership structure is the root of principal-agent relationship in public corporations. Agency costs arise due to conflicts between managers and shareholders or among controlling shareholders and external shareholders depending upon firms'

ownership structure and governance system in the country. These agency conflicts are costly to managers and shareholders. Managers may lose their job or their reputation may damage and career and growth in future may suffer due to severe agency conflicts. The costs to shareholders may include free cash flow wasted by way of personal perquisites of the managers. The managers might be motivated in investing free cash flows in inefficient projects or those projects that might benefit them personally to extend their tunneling potential in future. As agency conflicts are costly for both managers and shareholders, thus, they will attempt to control these costs. Therefore, agency costs are those losses which are faced by managers (bonding costs), shareholders (monitoring costs) in minimizing the agency conflicts and those costs which are not controlled (residual costs).

Dividend policy is very effective in resolving agency conflicts. The potential of managers in wasting free cash flows is rectricted after a substantial amount of dividend is paid to shareholders. Also, a stable dividend policy brings a firm under the monitoring of capital markets. The firm has to issue new equity or arrange finance through issuing debts. A firm with severe agency conflicts will face higher cost of finance (e.g., cost of equity and cost of debts). It puts pressure on the managers to pay dividends in order to reduce agency conflicts. Thus, agency costs are positively related with dividend policy (Rozeff, 1982; Easterbrook, 1984; Jensen, 1986). From shareholders' perspective, dividends serve as monitoring vehicle to oversee managers' potentials in misusing firms' resources those are held at their discretion. From managers' point of view, dividend can be used to signal shareholders that smaller free cash flows are left at their disposal after dividend payments.

Using dividends as device of controlling agency conflicts is not costless. There are substantial costs associated with raising finance. It is preferred to pay dividends through internally generated cash flows otherwise it has to arrange finance by issuing shares or arranging loans. Both issuance of equity or debts involve transactions costs. The floatation costs (costs involved in issuing new equity) and costs incurred on the issuance of debts limit the dividend paying capacity of firm. Therefore, transctions costs are inversely related with dividends payments. Agency

costs mimimization model was presented by Rozeff (1982) which postulates that an optimum dividend level is that where sum of agency costs and transaction costs are minimized.

Many researchers suggest varying nature of agency cost variables. Rozeff (1982) suggests that inside ownership as an agency variable is inversely related with dividend policy. The insiders' ownership aligns their incentives in monitoring of the managers. Therefore, lower the agency costs and lesser is the need to pay dividends. Similarly, ownership concentration is another measure of agency costs being used by different researchers. The dominant shareholders with large stakes of ownerships are motivated in monitoring of the managers' activities. Further, their incentives are aligned with those of external shareholders' interests, thus there are lesser agency costs between managers and shareholders.

Two sided explanations are offered for relationship between ownership disparity and dividend policy. There are serious agency conflicts among the controlling shareholders and minority shareholders. Therefore, there should be positive relationship between ownership disparity and dividend policy. Contrarily, the controlling shareholders have least cash flow investments and they are engaged in tunneling firm resources, therefore, they will not be motivated in paying dividends. Dividend payments will restrict their tunneling potential in future. Thus, there will be an inverse relationship between ownership disparity and dividend policy. This is particularly important in group firms where the ultimate controller does not worry about any discount in share price as it will not cost him more nor he feels any fear of removal from the board. Further, he is not subject to capital markets' monitoring as he doesn't like issuing new equity as it will dilute his control. Moreover, he could arrange finance through inter-transfers (from those firms with surplus funds to other firms with shortage of funds). Therefore, dividend decision seems less sensitive to cost of equity and/or cost of debt. It will be more sensitive to the choice of the ultimate controller whether he should pay dividends or not? Like ownership disparity, relational ownership (represented by associated/affiliated firms' ownership) extends control rights than cash flow rights of the ultimate controller. Relational ownership is expected to affect dividend policy in

both ways e.g., positively or negatively as it is explained earlier for ownership disparity-dividend policy relationship.

Institutional ownership may have two sided explanations as an agency cost variable. Institutional investors possess the ability and motivation in monitoring of the firm because they are highly concerned with the safeguard and growth of their investment in the firm. Their presence reduces agency conflicts and lesser is the need to pay dividends. Therefore, institutional ownership may be inversely related with dividend policy. On the other hand, it may be positively related with dividend policy due to tax clientele effect. Further, institutional investors are equipped with more information related to governance level of the firm. They might influence dividend decisions to restrict the tunneling potential of the ultimate controllers in the countries with underdeveloped regulatory system. This is particulary important in case of group firms where ultimate controllers are fully entrenched and motivated in tunneling firms' resources for their personal benefits at minority shareholders' expense (Redding, 1997).

Like institutional ownership, domestic private institutional ownership is expected to exert a strong influence in affecting firm dividend policy. Government ownership is expected to have varying nature of impacts on dividend policy. Government ownership represents banks and other financial institutions. The representatives of these institutions possess good monitoring strength. Therefore, there may be an inverse relationship between government institutional ownership and dividend policy. The representatives of these institutions possess market knowledge and financial information and they may favor dividend decision due to tax benefits. In comparison to domestic private institutional ownership, government institutional ownership seems less influential in affecting dividend policy. The representatives of government institutions are generally bureaucrats whose career and growth is not associated with the future prospects of the firm. They are not warmly motivated in monitoring of the firm activities. Further, group headquarters may influence government institutions' investment towards group firms due to their strong political and bureaucratic connections. Thus, group firms face a little monitoring from the government institutions' representatives.

Slack (retained earnings ratio) positively affects dividend policy. A firm may finance its assets by earned equity or contributed capital. The contributed capital represents new equity and/or debts. The contributed capital brings a firm under capital market monitoring and helps in reducing agency conflicts. A firm with higher earned equity faces higher agency conflicts and puts pressure on the managers to distribute it by way of dividends. Therefore, there is a positive relationship between slack and dividend policy. Most of firms are family dominated group affiliates those are not subject to strong capital markets monitoring. Therefore, slack might be inversely related with dividend policy in Pakistan.

2.3.5 Selected Literature Review

Rozeff (1982) tests the agency cost minimization model by employing 1000 firms in United States. The agency costs variables include inside ownership and ownership dispersion and transaction costs variables include risk and growth. Consistent with the expectations, the researcher finds that inside ownership is negatively related and ownership dispersion is positively related with dividend payout ratio. More support to dividend minimization model is given by Lloyd et al. (1985) who include size variable in the model. They propose that firm's size may be considered as agency costs variable as small fractions of inside shareholdings and huge number of shareholders are expected in larger firms. The findings show a positive relationship between firm size and dividend payout ratio and thus confirm the validity of dividend minimization model.

Farinha and López-de Foronda (2009) examine the impact of inside ownership on dividend policy by taking data from countries of different legal systems. The study employs firms representing countries of two categories of legal systems e.g., civil law legal system countries and Anglo Saxon tradition countries. They hypothesize that nature of agency conflicts might vary in the firms of these two categories of countries. The findings show that relationship between inside ownership and dividend policy of firms is negative-positive-negative in Anglo Saxon tradition countries whereas this relationship is positive-negative-positive in civil

law countries. The study gives insight into the varying nature of dividend role to control agency costs in countries with different legal systems.

Ahmed and Javid (2008) take KSE listed firms covering 2001-2006 period in Pakistan. Dividend yield has been taken as a dividend policy measure. The results indicate that concentrated ownership is positively related dividend policy. Slack variable is negatively related with dividend policy. Another study of Ahmad and Javid (2010) investigates the impact of corporate shareholding on dividend policy. The study uses 50 firms listed on Karachi Stock Exchange covering 2001-2006 period. The results indicate that shareholdings of joint stock companies strongly positively affect dividend payout ratio. However, financial institutions' shareholding and inside shareholdings are not significantly related with dividend payout ratio. Also, foreign shareholding is not influential in affecting dividend payout ratio. The impact of financial leverage is negative and however, it is not significant at conventional level. Further, Mirza and Azfa (2010) examine dividend policy in Pakistan and find that inside ownership is inversely related with dividend policy.

Schooley and Barney (1994) employ inside ownership (measured by CEO ownership) and inside ownership squared. As per expectations, they find that CEO ownership is negatively related whereas CEO ownership squared is positively related with dividend policy. The positive impact of CEO shareholding at higher levels is consistent as the CEO/insider become forceful due to his large stakes in the shareholdings of firm. He may be engaged in expropriation of firm resources at the cost of external shareholders that in turn may increase agency conflicts among the CEO/insiders and external shareholders.

Mollah et al. (2007) examine the dividend policy during the pre and post financial crisis of 1998 in Bangladesh. They take agency cost variables including inside ownership and ownership dispersion. The findings indicate that agency cost measures are related with dividend policy in pre-financial crisis and however, they are not significantly related with dividend policy in post-financial crisis periods.

Rao and White (1994) appply dividend minimization model on private firms. The researchers observe that results are consistent with the agency theory. Slack (retained earnings ratio) variable is positively related with dividend payout ratio.

According to the expectations, inside ownership is inversely related whereas dispersed ownership is positively related with dividend payout ratio. Similar relationships are reported by Holder et al. (1998). However, they contribute agency cost minimization model by adding a new variable e.g., free cash flows. Free cash flows variable shows positive relationship with dividend payout ratio. The positive relationship supports the agency theory because free cash flows should be distributed to shareholders in order to minimize agency conflicts among the managers and shareholders those otherwise may be wasted by way of perquisites of managers or investing in projects that benefit them personally.

DeAngelo et al. (2004) explore the relationship among agency costs and dividend policy. They take 25 largest long standing firms of NYSE, NASDAQ and AMEX and analyze their dividend payout behaviour with different earned equities' levels (e.g., slack). The study covers 1973-2002 period. The results suggest that slack is positively related with dividend decisions. These findings strongly indicate that firms pay higher dividends when slack is higher and dividend payments reduce with the decrease in slack ratio. Firms pay nothing if slack ratio is near to zero. The results are consistent because those firms with higher earned equity in the balance sheet face higher agency costs which put pressure on the managers to distribute these earnings to manage this pressure. Along the same line, Ghassan Al Taleb (2012) takes a sample of 60 firms covering a period of 2007-2011 and attempt examining determinants of dividend policy in Jordan. The results indicate that retained earnings ratio is positively related with dividend policy. Free cash flows, size, risk, firm profitability, growth and leverage variables are negatively related with dividend policy.

Khan (2006) examines the association between ownership structure and firm's dividend policy by employing 330 listed large firms in United Kingdom. She finds that concentrated ownership is inversely related with dividend policy. Similarly, Harada and Nguyen (2006) observe negative relationship between concentrated ownership and dividend policy in Japan. Hansen et al. (1994) research agency costs model and find that concentrated ownership is inversely related with dividend payout ratio in India.

Sulong and Mat Nor (2008) explore the effect of corporate ownership on dividend policy in Malaysia at two periods: first in 2002 and second in 2005. They find concentrated ownership significantly positively affects dividend policy in both of the periods and however, strength of relationship is not stronger. Further inside ownership and foreign ownership insignificantly related with dividend policy in 2002 and however, these are significantly related with dividiend policy in 2005. Mancinelli and Ozkan (2006) investigate the impact of corporate shareholding and dividend behavaior of firms in Itali. They observe positive impact of concentrated ownership on dividend policy. They suggest that findings are consistent because dividend serve as a device of controlling conflicts between controlling shareholders and outside shareholders.

Moh'd et al. (1995) take institutional shareholding as agency cost measure by employing a panel data for 1972-1989 period. The findings indicate that instititutional shareholding strongly positively affects dividend policy. In constast, the study of D?souza and Saxena (1999) reports a negative impact of institutional shareholdings on dividend policy. These findings support agency theory. The presence of insititutional investors helps in reducing agency conflicts due to their ability and motivation in monitoring of the managers and lesser is there need of dividend payments. Bradford et al. (2013) and Jiraporn and Ning (2006) find positive impact of government ownership on firms' dividend policy in China. They suggest that state owned firms are less subject to financial constrains and therefore, pay higher dividends than privately held firms.

Jiraporn and Ning (2006) investigate dividend policy in USA. The researchers find an inverse relationship between investors' protection rights and dividend policy. The findings support to substitution hypothesis. The managers of firms with very good investors' protection system in the country are less likely to pay dividends. On the other hand, the managers of firms with low level of investors' protections are likely to distribute higher dividend. These large dividends help in building the reputation in the eyes of shareholders. In turn, it reduces agency conflicts between managers and shareholders; makes the availability of funds easier and reduces the cost of funds as well.

In the light of agency theory, Jiraporn et al. (2011) examine the impact of firm's quality of corporate governance on dividend policy. By using Two Stage Least Square regression technique, the results indicate that those firms tend to pay higher dividend which adopt high governance practices. The adoptability of governance practices strengthens the internal monitoring system of the firm which influences dividend decision positively and discourages the expropriation of firm resources at the cost of minority shareholders.

Manos (2001) applies different variants of agency cost minimization model in India. He takes ownership variables, transaction cost variables and few control variables. According to the prediction, the findings show that government shareholdings negatively affect the dividend policy. Inside shareholdings also show negative impact on dividend policy. Similarly, consistent with the agency theory, institutional shareholdings, foreign shareholdings and public shareholdings influence positively the dividend policy. Moreover, the findings indicate that group affiliation positively affects dividend policy and further, firms affiliated with high diversified business groups are likely to pay higher dividends than firms affiliated with less diversified business groups. Similarly, Manos et al. (2012) find that Indian business groups' affiliated firms pay higher dividends than standalone firms.

Aggarwal and Dow (2012) investigate dividend policy of group firms in Japan. The results reveal that group affiliation is inversely related with dividend policy. Further, firm's propensity to pay dividend lowers with an increase in association or strength of affiliation with a business group. The findings suggest that negative impacts of group affiliation on dividend payout are the outcomes of transfers of assets from a firm that is weakly linked with business group to other firms those are strongly associated with that business group.

The study discusses relevant factors in determining the dividend policy. From the above discussion, it reveals that ownership structure affects firm's dividend payout policy. Moreover, group affiliation and group diversification may have a significant impact on dividend behavior of the firm.

In this part of thesis, the contribution lies in the new insights provided by adding a set of previously non-researched variables in the studies of dividend policy in

Pakistan: group affiliation and group diversification as well as ownership disparity and relational ownership. Further, this is the pioneering study testing the Expropriation hypothesis in Pakistan. The study selects pyramidal firms for that purpose because the divergence of control rights and cash flow rights is particularly wider in such firms which enhance the ability of controller to retain cash and reduce dividend. The investigation of dividend payout behavior has not been done previously on a sample of pyramidal firms in Pakistan.

The above discussion led us to the following hypotheses:

H1: There is a significantly lower dividend policy of group firms than standalone firms in Pakistan.

H2: There is a significant relationship between corporate ownership and dividend policy.

2.4 Summary of Proposed Hypotheses of the Study

H1: There is a significant relationship between group affiliation/group diversification and excess value.

H2: There is a significant relationship between group affiliation/group diversification and excess profitability.

H3: There is a significant relationship between group affiliation/group diversification and profits variability.

H4: There is a significant relationship between corporate ownership and firm performance.

H5: There is a significant relationship between ownership disparity and firm performance.

H6: There is a significantly lower dividend policy of group firms than standalone firms in Pakistan.

H7: There is a significant relationship between corporate ownership and dividend policy.

Chapter 3

Research Methodology

3.1 Data Description

The study uses a sample of 367 KSE listed firms (including 208 group affiliates and 159 standalone firms) covering a period of 1993-2012. The firms are selected from non-financial sector. In order to select the sample of the study, following criteria are adopted. First, the study restricts the analysis to firms listed on the Karachi Stock Exchange (KSE) which is the oldest and one of the three main stock exchanges operating in Pakistan. This is particularly important because of reliability and accuracy of data pertaining to accounting variables, shareholding information and other relevant variables. Most of the worthy researches conducted in Pakistan use KSE listed firms for the purpose of selection of their samples. Therefore, the study is able to compare the results with the earlier studies in Pakistani context. Second, the study excludes financial service firms (like mutual funds, commercial and investment banks and insurance companies), government controlled firms and foreign subsidiaries.

The study obtains accounting variables' information from the State Bank of Pakistan's publications "Balance sheet analysis of joint stock companies listed on Karachi Stock Exchange" 1994, 1998, 2000, 2006, 2010 and 2012. The historical data of share prices is collected from the newspaper "Business Recorder" and the website of "Business Recorder". Moreover, information regarding the business

groups and their affiliated firms is collected from a published book "Who Owns Pakistan", website of "Business Council of Pakistan" and the annual reports of firms. Ownership data is collected from the published annual reports of the firms. The annual reports are collected from the "Securities and Exchange Commission of Pakistan", the website of "Karachi Stock Exchange" and websites of individual firms.

3.2 Research Methods

In order to analyze the comparative performance of group affiliated firms and standalone firms (group premium/discount), the study modifies the 'Chop Shop' methodology of Berger and Ofek (1995) consistent with the earlier studies [for instance Claessens et al. (2002); Ferris et al. (2003); Lee et al. (2008) among others].

The study uses pooled Ordinary Least Square regression and further it also uses random effect Generalized Least Square regression models. One major issue in estimation is that besides the observable factors like group affiliation, there may be many unobservable variables (like managerial talent, BGs resource sharing networks, etc.) those may affect Excess values (firm performance) but could not be directly included in the regression model. The study also employs random effect Generalized Least Square regression to determine the relationships. This approach is more appropriate as it partly controls for unobservable factors assuming that these are randomly distributed across the cross sectional units (Wooldridge, 2003). Random effect GLS allows the researcher to examine the specification in a manner that it assumes observations are independent across BGs but relaxes the assumption of independence within BGs (Moulton, 1990; Khanna and Palepu, 2000a; Yin and Zajac, 2004).

Because group affiliation, group diversification and group diversification dummies are time invariant and fixed effect estimators cannot be computed if there are regressors that do not vary within BGs and/or those do not vary over the period (Yin and Zajac, 2004; Zeitun, 2009). The study also includes several industry

dummies and industry affiliation normally does not change over the period. In such situation, fixed effect is not appropriate (Andres, 2008). Moreover, the study is also concerned with examining if there is any change in group affiliation and group diversification-performance relationship across distinct sub-periods (5 years each sub-period). The random effects model is the appropriated specification over the fixed-effects model for panels over short periods (Hsu and Liu, 2008). Moreover, the study restricts the regression results to those firms that have not experienced changes in group affiliation to avoid possible endogeneity problems regarding group membership that might have arisen if the study has also considered firms that switched groups or that switched between the group and non-group categories (Hoshi et al., 1991).

3.2.1 A Modified 'Chop Shop' Method

The study employs a modified 'Chop Shop' method to determine whether group affiliates are trading at premium or discount. This approach is popular in finance (Berger and Ofek, 1995; Lang et al., 1995; Lee et al., 2008). The study adopts this method to make the results comparable with the existing studies. One can reasonably estimate the value of a group affiliates by the median value of stand-alone firms in the same industry in which these group affiliates compete. The imputed value of a group affiliate represents the estimated value as if group affiliate operates as a median stand-alone firm. The excess value of group affiliate is defined as natural log value of the ratio of actual value to its imputed value. A positive excess value implies that affiliation with a BG enhances the value of group affiliates beyond that of their stand-alone counterparts – in other words, a group affiliation/diversification premium. Contrarily, a negative excess value reveals a group affiliation/diversification discount.

Specifically, imputed value of group affiliate is a value of its accounting item (sales or earnings before interest and tax [EBIT]) multiplied by the ratio of value of total capital (market value of equity plus book value of debts) to this item for the

median stand-alone firm in the same industry. It has the following property:

$$IV_{gr} = AI_{gr} * (\frac{V}{AI_{sa}}) \tag{3.1}$$

where IVgr is the imputed value of a group affiliate in the industry i as a stand-alone firm. AIgr is a value of the accounting item (sales or EBIT) of a group affiliate and (V/AI)sa is the ratio of the value of total capital to an accounting item (sales or EBIT) for the median standalone firm in industry i. Then, the excess value of a group affiliate is defined by the log value of the ratio of actual value to imputed value of the firm as follows:

$$Excess\ value = log(\frac{V_{gr}}{IV_{gr}}) \tag{3.2}$$

3.3 Business Groups and Firm Performance

3.3.1 Business Groups and Excess Value

3.3.1.1 Econometric Models

First of all, the study does uni-variate analyses to compare excess values based on sales and EBIT and secondly run the following regressions:

$$Excess\ value_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 List\ age_{i,t} + \beta_3 Leverage_{i,t} + \beta_4 Size_{i,t} + \beta_5 Growth_{i,t} + \beta_6 Risk_{i,t} + \beta_7 Profitability_{i,t} + error\ term \tag{3.3}$$

$$Excess\ value_{i,t} = \beta_0 + \beta_1 Group\ diversification_{i,t} + \beta_2 List\ age_{i,t} + \beta_3 Leverage_{i,t} + \beta_4 Size_{i,t} + \beta_5 Growth_{i,t} + \beta_6 Risk_{i,t} + \beta_7 Profitability_{i,t} + error\ term \tag{3.4}$$

$$Excess\ value_{i,t} = \beta_0 + \beta_1 Least\ diversified\ dummy_{i,t} + \beta_2 Intermediate\ diversified\ dummy_{i,t} + \beta_3 Most\ diversified\ dummy_{i,t} + \beta_4 List\ age_{i,t} + \beta_5 Leverage_{i,t} + \beta_6 Size_{i,t} + \beta_7 Growth_{i,t} + \beta_8 Risk_{i,t} + \beta_9 Profitability_{i,t} + error\ term \tag{3.5}$$

$$Excess\ value_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 List\ age_{i,t} + \beta_3 Leverage_{i,t} + \beta_4 Size_{i,t} + \beta_5 Growth_{i,t} + \beta_6 Risk_{i,t} + \beta_7 Profitability_{i,t} + \beta_8 GA\ dummy * List\ age_{i,t} + error\ term \quad (3.6)$$

$$Excess\ value_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 List\ age_{i,t} + \beta_3 Leverage_{i,t} + \beta_4 Size_{i,t} + \beta_5 Growth_{i,t} + \beta_6 Risk_{i,t} + \beta_7 Profitability_{i,t} + \beta_8 GA\ dummy * Leverage_{i,t} + error\ term \quad (3.7)$$

$$Excess\ value_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 List\ age_{i,t} + \beta_3 Leverage_{i,t} + \beta_4 Size_{i,t} + \beta_5 Growth_{i,t} + \beta_6 Risk_{i,t} + \beta_7 Profitability_{i,t} + \beta_8 GA\ dummy * Size_{i,t} + error\ term \quad (3.8)$$

Thirdly, according to Chang and Hong (2000); Chang (2003a) and Khanna and Palepu (2000a), there may be significant differences of group affiliation-performance relationships across distinct time horizons. Therefore, the study period of 20 years has been divided into four sub-periods (5 years in each sub-period e.g., 1993-1997, 1998-2002, 2003-2007 and 2008-2012) and run the above regression models in specification 3.3 to 3.8 for each sub-period along with the whole sample period of 1993-2012. The analyses are done by taking Excess value-sales as dependent variable. For robustness, the analyses are also done by taking Excess value-EBIT as dependent variable.

3.3.2 Business Groups and Excess Profitability

3.3.2.1 Econometric Models

The analyses are done in the same manner as for the previous issue of excess values. The uni-variate analyses are done to compare the excess profitability across group firms and standalone firms and then run the following regressions:

$$Excess\ profitability_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 List\ age_{i,t} +$$

$$\beta_3 Leverage_{i,t} + \beta_4 Growth_{i,t} + \beta_5 Risk_{i,t} + error\ term \tag{3.9}$$

$$Excess\ profitability_{i,t} = \beta_0 + \beta_1 Group\ diversification_{i,t} + \beta_2 List\ age_{i,t} + \beta_3 Leverage_{i,t} + \beta_4 Growth_{i,t} + \beta_5 Risk_{i,t} + error\ term \tag{3.10}$$

$$Excess\ profitability_{i,t} = \beta_0 + \beta_1 Least\ diversified\ dummy_{i,t} + \beta_2 Intermediate\ diversified\ dummy_{i,t} + \beta_3 Most\ diversified\ dummy_{i,t} + \beta_4 List\ age_{i,t} + \beta_5 Leverage_{i,t} + \beta_6 Growth_{i,t} + \beta_7 Risk_{i,t} + error\ term \tag{3.11}$$

$$Excess\ profitability_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 List\ age_{i,t} + \beta_3 Leverage_{i,t} + \beta_4 Growth_{i,t} + \beta_5 Risk_{i,t} + \beta_6 GA\ dummy * List\ age_{i,t} + error\ term \tag{3.12}$$

$$Excess\ profitability_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 List\ age_{i,t} + \beta_3 Leverage_{i,t} + \beta_4 Growth_{i,t} + \beta_5 Risk_{i,t} + \beta_6 GA\ dummy * Leverage_{i,t} + error\ term \tag{3.13}$$

The above regression models are run by taking Excess profitability (operating) as dependent variable. For robustness, the analyses are also done by taking Excess profitability (net) as dependent variable. The regression models of the above specification are run for the whole sample period and for each of the four sub-periods of 1993-1997, 1998-2002, 2003-2007 and 2008-2012 respectively.

3.3.3 Business Groups and Risk Sharing

3.3.3.1 Econometric Models

First of all, uni-variate analyses are done to compare the Operating profits variability and Net profits variability across group firms and standalone firms to determine the strength of business groups in risk sharing among their group affiliates and then run the following regressions:

$$Risk-profit\ variability_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 Operating$$

$$profits_{i,t} + \beta_3 List\ age_{i,t} + \beta_4 Leverage_{i,t} + \beta_5 Growth_{i,t} + error\ term \quad (3.14)$$

$$Risk{-}profit\ variability_{i,t} = \beta_0 + \beta_1 Group\ diversification_{i,t} + \beta_2 Operating\ profits_{i,t} + \beta_3 List\ age_{i,t} + \beta_4 Leverage_{i,t} + \beta_5 Growth_{i,t} + error\ term \quad (3.15)$$

$$Risk{-}profit\ variability_{i,t} = \beta_0 + \beta_1 Least\ diversified\ dummy_{i,t} + \beta_2 Intermediate\ diversified\ dummy_{i,t} + \beta_3 Most\ diversified\ dummy_{i,t} + \beta_4 Operating\ profits_{i,t} + \beta_5 List\ age_{i,t} + \beta_6 Leverage_{i,t} + \beta_7 Growth_{i,t} + error\ term \quad (3.16)$$

$$Risk - profit\ variability_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 Operating\ profits_{i,t} + \beta_3 List\ age_{i,t} + \beta_4 Leverage_{i,t} + \beta_5 Growth_{i,t} + \beta_6 GA\ dummy * List\ age_{i,t} + error\ term \quad (3.17)$$

$$Risk - profit\ variability_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 Operating\ profits_{i,t} + \beta_3 List\ age_{i,t} + \beta_4 Leverage_{i,t} + \beta_5 Growth_{i,t} + \beta_6 GA\ dummy * Leverage_{i,t} + error\ term \quad (3.18)$$

$$Risk - profit\ variability_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 Operating\ profits_{i,t} + \beta_3 List\ age_{i,t} + \beta_4 Leverage_{i,t} + \beta_5 Growth_{i,t} + \beta_6 GA\ dummy * Growth_{i,t} + error\ term \quad (3.19)$$

The above regression models are run by taking Risk-Operating profits variability as dependent variable. For robustness, the analyses are also done by taking Risk-Net profits variability as dependent variable. The regression models of the above specifications are run for the whole sample period as well as for each of the four sub-periods.

3.4 Group Affiliation, Ownership Structure and Firm Performance

3.4.1 Group Affiliation, Ownership Structure (Inside Ownership, Ownership Disparity and Institutional Ownership) and Firm Performance

3.4.1.1 Econometric Models

$$Firm\ performance_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 Inside\ Own_{i,t}$$
$$+\beta_3 Own\ Disparity_{i,t} + \beta_4 Inst\ Own_{i,t} + \beta_5 Leverage_{i,t} + \beta_6 Size_{i,t} + \beta_7 Growth_{i,t}$$
$$+ \beta_8 Risk_{i,t} + error\ term \tag{3.20}$$

$$Firm\ performance_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 Inside\ Own_{i,t}$$
$$+\beta_3 Own\ Disparity_{i,t} + \beta_4 Domestic\ Pvt\ Inst_{i,t} + \beta_5 Govt\ Inst_{i,t} + \beta_6 Leverage_{i,t}$$
$$+ \beta_7 Size_{i,t} + \beta_8 Growth_{i,t} + \beta_9 Risk_{i,t} + error\ term \tag{3.21}$$

$$Firm\ performance_{i,t} = \beta_0 + \beta_1 Group\ pyramid\ dummy_{i,t} + \beta_2 Inside\ Own_{i,t}$$
$$+\beta_3 Own\ Disparity_{i,t} + \beta_4 Inst\ Own_{i,t} + \beta_5 Leverage_{i,t} + \beta_6 Size_{i,t} + \beta_7 Growth_{i,t}$$
$$+ \beta_8 Risk_{i,t} + error\ term \tag{3.22}$$

$$Firm\ performance_{i,t} = \beta_0 + \beta_1 Group\ pyramid\ dummy_{i,t} + \beta_2 Inside\ Own_{i,t} +$$
$$\beta_3 Own\ Disparity_{i,t} + \beta_4 Domestic\ Pvt\ Inst_{i,t} + \beta_5 Govt\ Inst_{i,t} + \beta_6 Leverage_{i,t}$$
$$+ \beta_7 Size_{i,t} + \beta_8 Growth_{i,t} + \beta_9 Risk_{i,t} + error\ term \tag{3.23}$$

$$Firm\ performance_{i,t} = \beta_0 + \beta_1 Group\ diversification\ dummy_{i,t} + \beta_2 Inside\ Own_{i,t}$$
$$+\beta_3 Own\ Disparity_{i,t} + \beta_4 Inst\ Own_{i,t} + \beta_5 Leverage_{i,t} + \beta_6 Size_{i,t} + \beta_7 Growth_{i,t}$$
$$+ \beta_8 Risk_{i,t} + error\ term \tag{3.24}$$

$$Firm\ performance_{i,t} = \beta_0 + \beta_1 Group\ diversification\ dummy_{i,t} + \beta_2 Inside\ Own_{i,t}$$

$$+\beta_3 Own\ Disparity_{i,t} + \beta_4 Domestic\ Pvt\ Inst_{i,t} + \beta_5 Govt\ Inst_{i,t} + \beta_6 Leverage_{i,t}$$

$$+ \beta_7 Size_{i,t} + \beta_8 Growth_{i,t} + \beta_9 Risk_{i,t} + error\ term \quad (3.25)$$

$$Firm\ performance_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 Inside\ Own_{i,t} +$$

$$\beta_6 Leverage_{i,t} + \beta_3 Own\ Disparity_{i,t} + \beta_4 Inst\ Own_{i,t} + \beta_5 GA\ dummy * Inside\ Own_{i,t} +$$

$$+ \beta_7 Size_{i,t} + \beta_8 Growth_{i,t} + \beta_9 Risk_{i,t} + error\ term \quad (3.26)$$

$$Firm\ performance_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 Inside\ Own_{i,t} +$$

$$\beta_3 Own\ Disparity_{i,t} + \beta_4 Inst\ Own_{i,t} + \beta_5 GA\ dummy * Own\ Disparity_{i,t} + \beta_6 Leverage_{i,t}$$

$$+ \beta_7 Size_{i,t} + \beta_8 Growth_{i,t} + \beta_9 Risk_{i,t} + error\ term \quad (3.27)$$

$$Firm\ performance_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 Inside\ Own_{i,t} +$$

$$\beta_3 Own\ Disparity_{i,t} + \beta_4 Inst\ Own_{i,t} + \beta_5 GA\ dummy * Inst\ Own_{i,t} + \beta_6 Leverage_{i,t}$$

$$+ \beta_7 Size_{i,t} + \beta_8 Growth_{i,t} + \beta_9 Risk_{i,t} + error\ term \quad (3.28)$$

$$Firm\ performance_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 Inside\ Own_{i,t} +$$

$$\beta_3 Own\ Disparity_{i,t} + \beta_4 Domestic\ Pvt\ Inst_{i,t} + \beta_5 Govt\ Inst_{i,t} + \beta_6 GA\ dummy *$$

$$Domestic\ Pvt\ Inst_{i,t} + \beta_7 Leverage_{i,t} + \beta_8 Size_{i,t} + \beta_9 Growth_{i,t} + \beta_1 0 Risk_{i,t} + error\ term \quad (3.29)$$

$$Firm\ performance_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 Inside\ Own_{i,t} +$$

$$\beta_3 Own\ Disparity_{i,t} + \beta_4 Domestic\ Pvt\ Inst_{i,t} + \beta_5 Govt\ Inst_{i,t} + \beta_6 GA\ dummy * Govt$$

$$Inst_{i,t} + \beta_7 Leverage_{i,t} + \beta_8 Size_{i,t} + \beta_9 Growth_{i,t} + \beta_1 0 Risk_{i,t} + error\ term \quad (3.30)$$

The above regression models are run for two accounting based performance measures of ROA and ROS and a market performance measure of Tobin's Q.

3.4.2 Group Affiliation, Ownership Structure (Relational Ownership, Ownership Concentration and Institutional Ownership) and Firm Performance

3.4.2.1 Econometric Models

$$Firm\ performance_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 Relational\ Own_{i,t} + \beta_3 Own\ Concentration_{i,t} + \beta_4 Inst\ Own_{i,t} + \beta_5 Leverage_{i,t} + \beta_6 Size_{i,t} + \beta_7 Growth_{i,t} + \beta_8 Risk_{i,t} + error\ term \quad (3.31)$$

$$Firm\ performance_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 Relational\ Own_{i,t} + \beta_3 Own\ Concentration_{i,t} + \beta_4 Domestic\ Pvt\ Inst_{i,t} + \beta_5 Govt\ Inst_{i,t} + \beta_6 Leverage_{i,t} + \beta_7 Size_{i,t} + \beta_8 Growth_{i,t} + \beta_9 Risk_{i,t} + error\ term \quad (3.32)$$

$$Firm\ performance_{i,t} = \beta_0 + \beta_1 Group\ pyramid\ dummy_{i,t} + \beta_2 Relational\ Own_{i,t} + \beta_3 Own\ Concentration_{i,t} + \beta_4 Inst\ Own_{i,t} + \beta_5 Leverage_{i,t} + \beta_6 Size_{i,t} + \beta_7 Growth_{i,t} + \beta_8 Risk_{i,t} + error\ term \quad (3.33)$$

$$Firm\ performance_{i,t} = \beta_0 + \beta_1 Group\ pyramid\ dummy_{i,t} + \beta_2 Relational\ Own_{i,t} + \beta_3 Own\ Concentration_{i,t} + \beta_4 Domestic\ Pvt\ Inst_{i,t} + \beta_5 Govt\ Inst_{i,t} + \beta_6 Leverage_{i,t} + \beta_7 Size_{i,t} + \beta_8 Growth_{i,t} + \beta_9 Risk_{i,t} + error\ term \quad (3.34)$$

$$Firm\ performance_{i,t} = \beta_0 + \beta_1 Group\ diversification\ dummy_{i,t} + \beta_2 Relational\ Own_{i,t} + \beta_3 Own\ Concentration_{i,t} + \beta_4 Inst\ Own_{i,t} + \beta_5 Leverage_{i,t} + \beta_6 Size_{i,t} + \beta_7 Growth_{i,t} + \beta_8 Risk_{i,t} + error\ term \quad (3.35)$$

$$Firm\ performance_{i,t} = \beta_0 + \beta_1 Group\ diversification\ dummy_{i,t} + \beta_2 Relational\ Own_{i,t} + \beta_3 Own\ Concentration_{i,t} + \beta_4 Domestic\ Pvt\ Inst_{i,t} + \beta_5 Govt\ Inst_{i,t} + \beta_6 Leverage_{i,t} + \beta_7 Size_{i,t} + \beta_8 Growth_{i,t} + \beta_9 Risk_{i,t} + error\ term \quad (3.36)$$

$$Firm\ performance_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 Relational\ Own_{i,t} + \beta_3 Own\ Concentration_{i,t} + \beta_4 Inst\ Own_{i,t} + \beta_5 GA\ dummy * Relational\ Own_{i,t} + \beta_6 Leverage_{i,t} + \beta_7 Size_{i,t} + \beta_8 Growth_{i,t} + \beta_9 Risk_{i,t} + error\ term \quad (3.37)$$

$$Firm\ performance_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 Relational\ Own_{i,t} + \beta_3 Own\ Concentration_{i,t} + \beta_4 Inst\ Own_{i,t} + \beta_5 GA\ dummy * Own\ Concentration_{i,t} + \beta_6 Leverage_{i,t} + \beta_7 Size_{i,t} + \beta_8 Growth_{i,t} + \beta_9 Risk_{i,t} + error\ term \quad (3.38)$$

The above regression models are tested for other accounting based performance measure of ROS and market performance measure of Tobin's Q as well.

3.5 Business Groups and Dividend Policy in Pakistan

The dependent variable is dividend payout ratio. The independent variables include group affiliation and group diversification measures (group affiliation dummy, group pyramid dummy and group diversification dummy), agency cost variables (inside ownership, relational ownership, ownership wedge, institutional ownership, domestic private institutional ownership, government institutional ownership, ownership concentration and slack), risk variables (risk, leverage and firm growth) and control variables (size and profitability).

3.5.1 Business Groups and Dividend Policy (Inside Ownership, Ownership Disparity and Institutional Ownership)

3.5.1.1 Econometric Models

$$Dividend\ payout\ ratio_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 Inside\ Own_{i,t}$$

$$+\beta_3 Own\ Disparity_{i,t} + \beta_4 Inst\ Own_{i,t} + \beta_5 Slack_{i,t} + \beta_6 List\ age_{i,t} + \beta_7 Leverage_{i,t}$$
$$+ \beta_8 Size_{i,t} + \beta_9 Growth_{i,t} + \beta_{10} Risk_{i,t} + \beta_{11} Profitability_{i,t} + error\ term \quad (3.39)$$

$$Dividend\ payout\ ratio_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 Inside\ Own_{i,t}$$
$$+\beta_3 Own\ Disparity_{i,t} + \beta_4 Domestic\ Pvt\ Inst_{i,t} + \beta_5 Govt\ Inst_{i,t} + \beta_6 Slack_{i,t} + \beta_7 List$$
$$age_{i,t} + \beta_8 Leverage_{i,t} + \beta_9 Size_{i,t} + \beta_{10} Growth_{i,t} + \beta_{11} Risk_{i,t} + \beta_{12} Profitability_{i,t}$$
$$+ error\ term \quad (3.40)$$

$$Dividend\ payout\ ratio_{i,t} = \beta_0 + \beta_1 Group\ pyramid\ dummy_{i,t} + \beta_2 Inside\ Own_{i,t}$$
$$+\beta_3 Own\ Disparity_{i,t} + \beta_4 Inst\ Own_{i,t} + \beta_5 Slack_{i,t} + \beta_6 List\ age_{i,t} + \beta_7 Leverage_{i,t}$$
$$+ \beta_8 Size_{i,t} + \beta_9 Growth_{i,t} + \beta_{10} Risk_{i,t} + \beta_{11} Profitability_{i,t} + error\ term \quad (3.41)$$

$$Dividend\ payout\ ratio_{i,t} = \beta_0 + \beta_1 Group\ pyramid\ dummy_{i,t} + \beta_2 Inside\ Own_{i,t}$$
$$+\beta_3 Own\ Disparity_{i,t} + \beta_4 Domestic\ Pvt\ Inst_{i,t} + \beta_5 Govt\ Inst_{i,t} + \beta_6 Slack_{i,t} + \beta_7 List$$
$$age_{i,t} + \beta_8 Leverage_{i,t} + \beta_9 Size_{i,t} + \beta_{10} Growth_{i,t} + \beta_{11} Risk_{i,t} + \beta_{12} Profitability_{i,t}$$
$$+ error\ term \quad (3.42)$$

$$Dividend\ payout\ ratio_{i,t} = \beta_0 + \beta_1 Group\ diversification\ dummy_{i,t} + \beta_2 Inside\ Own_{i,t}$$
$$+\beta_3 Own\ Disparity_{i,t} + \beta_4 Inst\ Own_{i,t} + \beta_5 Slack_{i,t} + \beta_6 List\ age_{i,t} + \beta_7 Leverage_{i,t}$$
$$+ \beta_8 Size_{i,t} + \beta_9 Growth_{i,t} + \beta_{10} Risk_{i,t} + \beta_{11} Profitability_{i,t} + error\ term \quad (3.43)$$

$$Dividend\ payout\ ratio_{i,t} = \beta_0 + \beta_1 Group\ diversification\ dummy_{i,t} + \beta_2 Inside\ Own_{i,t}$$
$$+\beta_3 Own\ Disparity_{i,t} + \beta_4 Domestic\ Pvt\ Inst_{i,t} + \beta_5 Govt\ Inst_{i,t} + \beta_6 Slack_{i,t} + \beta_7 List$$
$$age_{i,t} + \beta_8 Leverage_{i,t} + \beta_9 Size_{i,t} + \beta_{10} Growth_{i,t} + \beta_{11} Risk_{i,t} + \beta_{12} Profitability_{i,t}$$
$$+ error\ term \quad (3.44)$$

$$Dividend\ payout\ ratio_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 Inside\ Own_{i,t}$$
$$+\beta_3 Own\ Disparity_{i,t} + \beta_4 Inst\ Own_{i,t} + \beta_5 GA\ dummy * Inside\ Own_{i,t} + \beta_6 Slack_{i,t} +$$

$$\beta_7 List\ age_{i,t} + \beta_8 Leverage_{i,t} + \beta_9 Size_{i,t} + \beta_{10} Growth_{i,t} + \beta_{11} Risk_{i,t} + \beta_{12} Profitability_{i,t} + error\ term \quad (3.45)$$

$$Dividend\ payout\ ratio_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 Inside\ Own_{i,t} + \beta_3 Own\ Disparity_{i,t} + \beta_4 Inst\ Own_{i,t} + \beta_5 GA\ dummy * Own\ Disparity_{i,t} + \beta_6 Slack_{i,t} + \beta_7 List\ age_{i,t} + \beta_8 Leverage_{i,t} + \beta_9 Size_{i,t} + \beta_{10} Growth_{i,t} + \beta_{11} Risk_{i,t} + \beta_{12} Profitability_{i,t} + error\ term \quad (3.46)$$

$$Dividend\ payout\ ratio_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 Inside\ Own_{i,t} + \beta_3 Own\ Disparity_{i,t} + \beta_4 Inst\ Own_{i,t} + \beta_5 GA\ dummy * Inst\ Own_{i,t} + \beta_6 Slack_{i,t} + \beta_7 List\ age_{i,t} + \beta_8 Leverage_{i,t} + \beta_9 Size_{i,t} + \beta_{10} Growth_{i,t} + \beta_{11} Risk_{i,t} + \beta_{12} Profitability_{i,t} + error\ term \quad (3.47)$$

$$Dividend\ payout\ ratio_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 Inside\ Own_{i,t} + \beta_3 Own\ Disparity_{i,t} + \beta_4 Inst\ Own_{i,t} + \beta_5 GA\ dummy * Domestic\ Pvt\ Inst_{i,t} + \beta_6 Slack_{i,t} + \beta_7 List\ age_{i,t} + \beta_8 Leverage_{i,t} + \beta_9 Size_{i,t} + \beta_{10} Growth_{i,t} + \beta_{11} Risk_{i,t} + \beta_{12} Profitability_{i,t} + error\ term \quad (3.48)$$

$$Dividend\ payout\ ratio_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 Inside\ Own_{i,t} + \beta_3 Own\ Disparity_{i,t} + \beta_4 Inst\ Own_{i,t} + \beta_5 GA\ dummy * Govt\ Inst_{i,t} + \beta_6 Slack_{i,t} + \beta_7 List\ age_{i,t} + \beta_8 Leverage_{i,t} + \beta_9 Size_{i,t} + \beta_{10} Growth_{i,t} + \beta_{11} Risk_{i,t} + \beta_{12} Profitability_{i,t} + error\ term \quad (3.49)$$

3.5.2 Business Groups and Dividend Policy (Relational Ownership, Ownership Concentration and Institutional Ownership)

3.5.2.1 Econometric Models

$$Dividend\ payout\ ratio_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 Relational\ Own_{i,t} + \beta_3 Own\ Concentration_{i,t} + \beta_4 Inst\ Own_{i,t} + \beta_5 Slack_{i,t} + \beta_6 List\ age_{i,t} + \beta_7 Leverage_{i,t} + \beta_8 Size_{i,t} + \beta_9 Growth_{i,t} + \beta_{10} Risk_{i,t} + \beta_{11} Profitability_{i,t} + error\ term \quad (3.50)$$

$$Dividend\ payout\ ratio_{i,t} = \beta_0 + \beta_1 Group\ affiliation\ dummy_{i,t} + \beta_2 Relational\ Own_{i,t} + \beta_3 Own\ Concentration_{i,t} + \beta_4 Domestic\ Pvt\ Inst_{i,t} + \beta_5 Govt\ Inst_{i,t} + \beta_6 Slack_{i,t} + \beta_7 List\ age_{i,t} + \beta_8 Leverage_{i,t} + \beta_9 Size_{i,t} + \beta_{10} Growth_{i,t} + \beta_{11} Risk_{i,t} + \beta_{12} Profitability_{i,t} + error\ term \quad (3.51)$$

$$Dividend\ payout\ ratio_{i,t} = \beta_0 + \beta_1 Group\ pyramid\ dummy_{i,t} + \beta_2 Relational\ Own_{i,t} + \beta_3 Own\ Concentration_{i,t} + \beta_4 Inst\ Own_{i,t} + \beta_5 Slack_{i,t} + \beta_6 List\ age_{i,t} + \beta_7 Leverage_{i,t} + \beta_8 Size_{i,t} + \beta_9 Growth_{i,t} + \beta_{10} Risk_{i,t} + \beta_{11} Profitability_{i,t} + error\ term \quad (3.52)$$

$$Dividend\ payout\ ratio_{i,t} = \beta_0 + \beta_1 Group\ pyramid\ dummy_{i,t} + \beta_2 Relational\ Own_{i,t} + \beta_3 Own\ Concentration_{i,t} + \beta_4 Domestic\ Pvt\ Inst_{i,t} + \beta_5 Govt\ Inst_{i,t} + \beta_6 Slack_{i,t} + \beta_7 List\ age_{i,t} + \beta_8 Leverage_{i,t} + \beta_9 Size_{i,t} + \beta_{10} Growth_{i,t} + \beta_{11} Risk_{i,t} + \beta_{12} Profitability_{i,t} + error\ term \quad (3.53)$$

$$Dividend\ payout\ ratio_{i,t} = \beta_0 + \beta_1 Group\ diversification\ dummy_{i,t} + \beta_2 Relational\ Own_{i,t} + \beta_3 Own\ Concentration_{i,t} + \beta_4 Inst\ Own_{i,t} + \beta_5 Slack_{i,t} + \beta_6 List\ age_{i,t} + \beta_7 Leverage_{i,t} + \beta_8 Size_{i,t} + \beta_9 Growth_{i,t} + \beta_{10} Risk_{i,t} + \beta_{11} Profitability_{i,t} + error\ term \quad (3.54)$$

$$Dividend\ payout\ ratio_{i,t} = \beta_0 + \beta_1 Group\ diversification\ dummy_{i,t} + \beta_2 Relational$$

$$Own_{i,t}+\beta_3 Own\ Concentration_{i,t}+\beta_4 Domestic\ Pvt\ Inst_{i,t}+\beta_5 Govt\ Inst_{i,t}+\beta_6 Slack_{i,t}$$
$$+\beta_7 List\ age_{i,t}+\beta_8 Leverage_{i,t}+\beta_9 Size_{i,t}+\beta_{10} Growth_{i,t}+\beta_{11} Risk_{i,t}+\beta_{12} Profitability_{i,t}$$
$$+ error\ term \tag{3.55}$$

$$Dividend\ payout\ ratio_{i,t} = \beta_0+\beta_1 Group\ affiliation\ dummy_{i,t}+\beta_2 Relational\ Own_{i,t}$$
$$+\beta_3 Own\ Concentration_{i,t}+\beta_4 Inst\ Own_{i,t}+\beta_5 GA\ dummy*Relational\ Own_{i,t}+\beta_6 Slack_{i,t}$$
$$+\beta_7 List\ age_{i,t}+\beta_8 Leverage_{i,t}+\beta_9 Size_{i,t}+\beta_{10} Growth_{i,t}+\beta_{11} Risk_{i,t}+\beta_{12} Profitability_{i,t}$$
$$+ error\ term \tag{3.56}$$

$$Dividend\ payout\ ratio_{i,t} = \beta_0+\beta_1 Group\ affiliation\ dummy_{i,t}+\beta_2 Relational\ Own_{i,t}+$$
$$\beta_3 Own\ Concentration_{i,t}+\beta_4 Inst\ Own_{i,t}+\beta_5 GA\ dummy*Own\ Concentration_{i,t}+\beta_6 Slack_{i,t}$$
$$+\beta_7 List\ age_{i,t}+\beta_8 Leverage_{i,t}+\beta_9 Size_{i,t}+\beta_{10} Growth_{i,t}+\beta_{11} Risk_{i,t}+\beta_{12} Profitability_{i,t}$$
$$+ error\ term \tag{3.57}$$

$$Dividend\ payout\ ratio_{i,t} = \beta_0+\beta_1 Group\ affiliation\ dummy_{i,t}+\beta_2 Relational\ Own_{i,t}+$$
$$\beta_3 Own\ Concentration_{i,t}+\beta_4 Inst\ Own_{i,t}+\beta_5 GA\ dummy*Inst\ Own_{i,t}+\beta_6 Slack_{i,t}$$
$$+\beta_7 List\ age_{i,t}+\beta_8 Leverage_{i,t}+\beta_9 Size_{i,t}+\beta_{10} Growth_{i,t}+\beta_{11} Risk_{i,t}+\beta_{12} Profitability_{i,t}$$
$$+ error\ term \tag{3.58}$$

$$Dividend\ payout\ ratio_{i,t} = \beta_0+\beta_1 Group\ affiliation\ dummy_{i,t}+\beta_2 Relational\ Own_{i,t}+$$
$$\beta_3 Own\ Concentration_{i,t}+\beta_4 Inst\ Own_{i,t}+\beta_5 GA\ dummy*Domestic\ Pvt\ Inst_{i,t}+\beta_6 Slack_{i,t}$$
$$+\beta_7 List\ age_{i,t}+\beta_8 Leverage_{i,t}+\beta_9 Size_{i,t}+\beta_{10} Growth_{i,t}+\beta_{11} Risk_{i,t}+\beta_{12} Profitability_{i,t}$$
$$+ error\ term \tag{3.59}$$

$$Dividend\ payout\ ratio_{i,t} = \beta_0+\beta_1 Group\ affiliation\ dummy_{i,t}+\beta_2 Relational\ Own_{i,t}$$
$$+\beta_3 Own\ Concentration_{i,t}+\beta_4 Inst\ Own_{i,t}+\beta_5 GA\ dummy*Govt\ Inst_{i,t}+\beta_6 Slack_{i,t}$$
$$+\beta_7 List\ age_{i,t}+\beta_8 Leverage_{i,t}+\beta_9 Size_{i,t}+\beta_{10} Growth_{i,t}+\beta_{11} Risk_{i,t}+\beta_{12} Profitability_{i,t}$$

$$+ error\ term \tag{3.60}$$

3.5.2.2 Variable Definitions

Excess Value (Sales/EBIT)

The study focuses on two accounting items e.g., sales and EBIT. First, it calculates the median value of capital-to-sales and capital-to-EBIT ratios for standalone firms in each industry. Then, imputed value of a group affiliate is approximated by multiplying this median ratio to the actual value of sales or EBIT of a group affiliate. Thus, the imputed value implies the hypothetical value of a group affiliate as if it operates as a median standalone firm. Industry classification is based on the two digit industry codes. Each industry is supposed to have at least three standalone firms in each year (Berger and Ofek, 1995; Lee et al., 2008).

Excess Profitability (Operating)

This variable is constructed in two steps. First, ROA (operating) are calculated as dividing the operating profits by firm total assets. Second, a difference between firm ROA (operating) and median value of industry ROA (operating) is taken as a measure of Excess profitability (operating) [Lee et al. (2010)].

Excess Profitability (Net)

Return on assets (net) is calculated as dividing the earnings after interest and taxes by total assets of the firm. Excess profitability (net) is defined as difference between firm's ROA (net) and median value of industry ROA (net) [Lee et al. (2010)].

Risk-Operating Profits Variability

The Risk-operating profits variability is measured as standard deviation of operating profits/total assets of the firm (Khanna and Yafeh, 2005). Two yars moving average is used.

Risk-Net Profits Variability

This variable is measured as standard deviation of net profits after interest and taxes divided/total assets of the firm (Lee et al., 2010).Two yars moving average is used.

Return on Assets (ROA)

The study uses two accounting based performance measures including return on assets (ROA) defined by earnings before interest and taxes divided by total assets of the firm.

Return on Sales (ROS)

Return on sales is defined as earnings before interest and taxes divided by total sales of the firm.

Tobin's Q

Consistent with previous studies of Khanna and Palepu (2000b), Carney et al. (2009) among others, market performance measure of Tobin's Q is also taken. Given the difficulty in the determination of the replacement cost of assets in Pakistani economy, Tobin's Q is defined as the ratio of sum of market value of equity plus book value of debts to the book value of total assets of firm (King and Santor, 2008).

Group Affiliation Dummy

The study develops a certain criteria to define a firm as an affiliate of a business group. It examines social ties, cross-directorate-ship interlocking and cross-shareholding interlocking. Further, information is obtained from a book "Who owns Pakistan".

Group Pyramid Dummy

Group pyramid dummy represents those firms which are subsidiaries of group affiliates. Dummy variable 1 is used if the firm is group subsidary and otherwise 0. This measure is similar to the group affiliation variable used by Lee et al. (2000).

Group Diversification

There is some controversy regarding the appropriateness of various measures of diversification. Therefore, the study uses four measures of diversification which would provide stronger conclusions if these lead to similar findings. The diversification measures are used to capture the effect of group diversification on firm performance. These measures include one continuous and three dummy variables (Lee et al., 2008; Carney et al., 2011). Group diversification shows the number of listed companies affiliated with an individual BG.

Group Diversification Dummy

A dummy variable 1 is assigned for firms belong to a business group having 4 or more group affiliates.

Least Diversified Dummy

The firms which are affiliated with a business group having 2 to 7 listed group affiliated firms.

Intermediate Diversified Dummy

It represents the firms affiliated with the business group having 8 to 13 affiliated firms.

Most Diversified Dummy

It represents those firms affiliated with a business group whose listed affiliated firms are 14 and above.

Inside Ownership

It represents percentage of shares held by directors, spouses, children and relatives (Ali Shah et al., 2009).

Relational Ownership

This variable represents percentage of shares held by associated/affiliated companies in the firm (Heugens et al., 2009).

Ownership Disparity

Divergence between control (voting rights) and ownership (cash flow rights) is captured through ownership disparity variable (Lemmon and Lins, 2003). Ownership disparity shows that an ultimate controller achieves an ultimate control over the firm through indirect shareholdings although having least direct shareholdings in the firm. A dummy variable 1 is used if affiliated/associated firms' ownership is 40% or more and direct ownership of ultimate controllers (directors) is less than 10% and otherwise 0.

Institutional Ownership

Institutional ownership is defined as percentage of shares held by institutions like banks, mutual funds, insurance companies and other joint stock companies except those firms which are the associates of the firm in question (Ali Shah et al., 2009).

Domestic Private Institutional Ownership

This variable represents percentage of shares held by private domestic financial institutions, commercial banks, mutual funds, insurance companies and other non-financial joint stock companies (Heugens et al., 2009).

Government Institutional Ownership

Government ownership represents percentage of shares held by the Government banks; other financial and investment institutions like NBP, ICP and NIT (Yu, 2013).

Ownership Concentration

The variable is constructed by taking the shareholdings of the largest 5 shareholders (Javid and Iqbal, 2010).

Slack

It is defined as retained earnings divided by firm's total assets (Rao and White, 1994).

List Age

It has been measured as number of years since company's listing on stock exchange (Guillen, 2000; Lee et al., 2008; Carney et al., 2011).

Leverage

The degree of financial leverage is measured by dividing the total debt of the firm by its total assets (Chang and Hong, 2000).

Size

Firm size is an important variable that may exert a strong effect on firm performance. It has been captured through company's total assets (in millions). The natural log of total assets is taken (Chang, 2003b; Huszar and Peek, 2009; Lee et al., 2008).

Growth

The change in sales in percentage of previous year is taken as a measure of growth and investment opportunities (Berger and Ofek, 1995; Huszar and Peek, 2009; Lee et al., 2008).

Risk

Firm risk is measured through standard deviation of return on capital employed.

Profitability

Firm profitability has been measured by earnings after interest and taxes divided by total assets of the firm (Berger and Ofek, 1995; Huszar and Peek, 2009).

Chapter 4

Results and Discussion

4.1 Business Groups and Firm Performance in Pakistan

4.1.1 Descriptive Statistics

Table 4.1 demonstrates the detail of industry whose firms are included in the sample of the study. Table 4.2 presents information related to business group in each year. The detail includes number of least, intermediate and most diversified business groups operating in Pakistan, average number of firms and minimum/-maximum number of firms belong to these three groups' categories in every year. Table 4.3 reports the detail of number of group firms and standalone firms in every year. This further includes number of firms belong to least, intermediate and most diversified BGs.

TABLE 4.1: Industry and Description

Industry #	Industry Description
1	Automobile assembler, automobile parts and accessories
2	Engineering, cable and electrical goods
3	Fuel and energy
4	Cement
5	Chemical and pharmaceutical
6	Food and personal care products, tobacco
7	Miscellaneous (jute, leather and tanneries, vanaspati & allied industries and technology & communication
8	Paper and board
9	Sugar and allied industries
10	Synthetics and rayon
11	Textile composite
12	Textile spinning
13	Glass and ceramics

TABLE 4.2: Information of Pakistani Business Groups in Every Year

Year	No. of groups				Avg no. of firms	Median no. of firms	Min no. of firms	Max no. of firms
	Least diversified	Intermediate diversified	Most diversified	All groups				
1993	27	11	7	45	2.756	2	1	10
1994	27	11	7	45	2.778	2	1	10
1995	26	12	7	45	2.622	2	1	9
1996	27	12	7	46	2.717	2	1	9
1997	26	12	7	45	2.933	2	1	10
1998	27	12	7	46	2.913	2	1	10
1999	28	12	7	47	2.872	2	1	10
2000	28	12	7	47	2.915	2	1	10
2001	35	14	7	56	3.500	3	1	13
2002	35	14	7	56	3.500	3	1	13
2003	35	14	7	56	3.482	3	1	13
2004	35	14	7	56	3.429	3	1	13
2005	35	14	7	56	3.393	3	1	13
2006	35	14	7	56	3.411	3	1	13
2007	35	14	7	56	3.375	3	1	13
2008	35	14	7	56	3.357	3	1	13
2009	35	14	7	56	3.357	3	1	13
2010	35	14	7	56	3.357	3	1	13
2011	34	14	7	55	3.309	3	1	12
2012	34	14	7	55	3.218	3	1	12

TABLE 4.3: Number of Group Firms and Standalone Firms in Every Year

Year	Group firms				Standalone firms
	Least diversified	Intermediate diversified	Most diversified	All firms	
1993	51	39	34	124	84
1994	52	40	33	125	89
1995	51	37	30	118	87
1996	54	39	32	125	91
1997	53	45	34	132	97
1998	54	47	33	134	100
1999	55	47	33	135	98
2000	56	47	34	137	98
2001	86	60	50	196	150
2002	86	60	50	196	149
2003	86	60	49	195	147
2004	86	60	47	193	146
2005	86	58	46	190	144
2006	87	58	46	191	146
2007	87	57	45	189	135
2008	87	56	45	188	133
2009	88	55	45	188	132
2010	88	55	45	188	126
2011	85	53	44	182	120
2012	84	50	43	177	114
				3303	2386

Table 4.4 demonstrates the comparisons of mean (median) excess value-sales across group firms and standalone firms. Similarly, Table 4.5 reports the comparative Excess value-sales for the least, intermediate and most diversified firms relative to standalone firms. The figures clearly show higher negative mean (median) Excess value for group firms than standalone firms in the whole sample and subsamples and the differences are statistically highly significant. The results suggest that

group firms underperform than their counterpart standalone firms. Moreover, the Excess values for least diversified, intermediate diversified and most diversified firms are again negative with relatively higher mean (values) when compared with standalone firms. The differences of mean (median) values of least, intermediate and most diversified firms are highly significant relative to standalone firms. These statistics clearly show lower performance of group affiliates than unaffiliated firms. The findings provide evidence of diversified group firms trading at discount in the whole sample period as well as in the sub-sample periods.

TABLE 4.4: Comparison of Excess Values for Group Firms and Standalone Firms

Variables	Firm	1993-12			1993-97			1998-02			2003-07			2008-12		
		Mean	Median	S.D.	Mean	Median	S.D.	Mean	Median	S.D.	Mean	Median	S.D.	Mean	Median	S.D.
Excess value-sales	Standalone	-0.014	-0.010	0.247	-0.004	0.000	0.248	-0.008	-0.014	0.250	-0.014	-0.009	0.246	-0.028	-0.027	0.245
	Group	-0.084***	-0.096***	0.255	-0.076***	-0.110***	0.271	-0.089***	-0.103***	0.253	-0.082***	-0.085***	0.238	-0.087***	-0.096***	0.264
	All	-0.055	-0.062	0.254	-0.047	-0.054	0.264	-0.055	-0.064	0.255	-0.054	-0.048	0.244	-0.063	-0.072	0.258

*T-test is used for comparison of mean values. Wilcoxon signed-rank test is used for comparison of median values. ***, ** and * show differences are significant at 1, 5 and 10 percent level.*

TABLE 4.5: Comparison of Excess Values for Non-diversified, Least Diversified, Intermediate Diversified and Most Diversified Firms

Variables	Firm	1993-12			1993-97			1998-02			2003-07			2008-12		
		Mean	Median	S.D.	Mean	Median	S.D.	Mean	Median	S.D.	Mean	Median	S.D.	Mean	Median	S.D.
Excess value-sales	Standalone	-0.014	-0.010	0.247	-0.004	0.000	0.248	-0.008	-0.014	0.250	-0.014	-0.009	0.246	-0.028	-0.027	0.245
	Least diversified	-0.105***	-0.134***	0.257	-0.085***	-0.166***	0.284	-0.110***	-0.137***	0.244	-0.115***	-0.112***	0.232	-0.103***	-0.138***	0.272
	Intermediate diversified	-0.067***	-0.065***	0.240	-0.038	-0.041	0.242	-0.088***	-0.074***	0.226	-0.070***	-0.048***	0.242	-0.066**	-0.073**	0.248
	Most diversified	-0.068***	-0.085***	0.268	-0.107***	-0.148***	0.278	-0.053*	-0.094**	0.292	-0.038	-0.020	0.238	-0.084***	-0.085***	0.266
	All	-0.055	-0.062	0.254	-0.047	-0.054	0.264	-0.055	-0.064	0.255	-0.054	-0.048	0.244	-0.063	-0.072	0.258

*T-test is used for comparison of mean values. Wilcoxon signed-rank test is used for comparison of median values. ***, ** and * show differences are significant at 1, 5 and 10 percent level.*

Table 4.6 presents the comparative mean (median) values of Excess profitability for group firms and standalone firms. The excess profitability is measured through two measures including Excess profitability (operating) and Excess profitability (net). The figures of both Excess profitability (operating) and Excess profitability (net) are relatively and significantly higher for group firms than standalone firms which suggest that group firms enjoy superior profitability in Pakistan. Further, Table 4.7 shows the relative figures of Excess profitability for least, intermediate and most diversified groups firms in comparison of standalone firms. In the lines of the above results, mean (median) values of Excess profitability (operating) and Excess profitability (net) are higher for least, intermediate and most diversified group firms than corresponding standalone firms. T-test and Wilcoxon signed-rank test indicate that differences of mean and median values are significant in most of the cases for least, intermediate and most diversified firms relative to standalone firms. The findings suggest that business groups diversified at various levels enjoy excess (higher) profitability than their counterpart standalone firms in Pakistan throughout the sample periods e.g., overall period and sub-periods. The findings support to political economy and resources sharing hypotheses.

TABLE 4.6: Comparison of Excess Profitability for Group Firms and Standalone Firms

Variables	Firm	1993-12			1993-97			1998-02			2003-07			2008-12		
		Mean	Median	S.D.	Mean	Median	S.D.	Mean	Median	S.D.	Mean	Median	S.D.	Mean	Median	S.D.
Excess profitability																
(operating)	Standalone	0.0005	0.000	0.156	0.001	0.000	0.122	-0.003	0.000	0.136	0.005	0.000	0.168	-0.002	0.000	0.179
	Group	0.030***	0.030***	0.128	0.043***	0.042***	0.113	0.037***	0.041***	0.123	0.031***	0.026***	0.119	0.016**	0.019***	0.149
	All	0.018	0.016	0.141	0.026	0.022	0.118	0.020	0.024	0.130	0.020	0.015	0.143	0.009	0.008	0.162
Excess profitability(net)	Standalone	-0.009	0.000	0.156	-0.012	0.000	0.139	-0.015	0.000	0.128	-0.003	0.000	0.167	-0.009	0.000	0.176
	Group	0.017***	0.023***	0.129	0.031***	0.039***	0.115	0.021***	0.034***	0.132	0.019***	0.018***	0.119	0.003	0.009*	0.144
	All	0.006	0.011	0.141	0.013	0.024	0.127	0.006	0.015	0.131	0.010	0.009	0.142	-0.002	0.003	0.158

*T-test is used for comparison of mean values. Wilcoxon signed-rank test is used for comparison of median values. ***, ** and * show differences are significant at 1, 5 and 10 percent level.*

TABLE 4.7: Comparison of Excess Profitability for Non-diversified, Least Diversified, Intermediate Diversified and Most Diversified Firms

Variables	Firm	1993-12			1993-97			1998-02			2003-07			2008-12		
		Mean	Median	S.D.	Mean	Median	S.D.	Mean	Median	S.D.	Mean	Median	S.D.	Mean	Median	S.D.
Excess profitability																
(operating)	Standalone	0.0005	0.000	0.156	0.001	0.000	0.122	-0.003	0.000	0.136	0.005	0.000	0.168	-0.002	0.000	0.179
	Least diversified	0.027***	0.029***	0.132	0.037***	0.042***	0.133	0.041***	0.044***	0.128	0.023**	0.026***	0.109	0.014	0.015**	0.152
	Intermediate diversified	0.027***	0.028***	0.129	0.049***	0.053***	0.094	0.037***	0.037***	0.112	0.032**	0.022***	0.137	-0.005	0.007	0.151
	Most diversified	0.041***	0.033***	0.119	0.045***	0.027***	0.098	0.030***	0.045***	0.127	0.044***	0.037***	0.111	0.044***	0.031***	0.134
	All	0.018	0.016	0.141	0.026	0.022	0.118	0.020	0.024	0.130	0.020	0.015	0.143	0.009	0.008	0.162
Excess profitability																
(net)	Standalone	-0.009	0.000	0.156	-0.012	0.000	0.139	-0.015	0.000	0.128	-0.003	0.000	0.167	-0.009	0.000	0.176
	Least diversified	0.016***	0.023***	0.133	0.031***	0.040***	0.140	0.027***	0.038***	0.144	0.014*	0.018***	0.104	0.000	0.004	0.143
	Intermediate diversified	0.012***	0.020***	0.127	0.038***	0.052***	0.091	0.019***	0.026***	0.110	0.016*	0.015***	0.136	-0.019	0.003	0.147
	Most diversified	0.027***	0.028***	0.124	0.024***	0.027***	0.095	0.014***	0.031***	0.136	0.033***	0.030***	0.120	0.034***	0.024***	0.136
	All	0.006	0.011	0.141	0.013	0.024	0.127	0.006	0.015	0.131	0.010	0.009	0.142	-0.002	0.003	0.158

*T-test is used for comparison of mean values. Wilcoxon signed-rank test is used for comparison of median values. ***, ** and * show differences are significant at 1, 5 and 10 percent level.*

In order to investigate the risk sharing role of business groups, the study does univariate analyses as presented in Table 4.8. Firm risk is measured by two proxies e.g., Risk-operating profits variability (standard deviation of operating profits) and Risk-net profits variability (standard deviation of net profits). The results indicate that mean values of both Risk-operating profits variability and Risk-net profits variability are significantly lower for groups firms than standalone firms. These results propose that group firms bear lower risk than standalone firms and hence play an active role in risk sharing among their group affiliates. Similarly, Table 4.9 highlights the mean values of Risk-operating profits variability and Risk-net profits variability for least, intermediate most diversified group relative to their corresponding standalone firms. The statistics reveal that both risk measures tend to show relatively lower values indicating that business groups diversified at different levels of diversification seem helping in reducing risk among their group affiliated firms. The findings support to risk sharing hypothesis as proposed by (Khanna and Yafeh, 2005).

TABLE 4.8: Risk-Profits Variability Comparisons for Group Firms and Standalone Firms

Variables	Firm	Mean				
		1993-12	1993-97	1998-02	2003-07	2008-12
Risk-operating profits variability	Standalone	0.062	0.04	0.058	0.067	0.074
	Group	0.051***	0.044	0.050*	0.049***	0.061*
	All	0.056	0.043	0.053	0.056	0.066
Risk-net profits variability	Standalone	0.062	0.046	0.058	0.067	0.071
	Group	0.050***	0.041	0.050*	0.048***	0.060*
	All	0.055	0.043	0.053	0.056	0.064

*T-test is used for comparison of mean values. Wilcoxon signed-rank test is used for comparison of median values. ***, ** and * show differences are significant at 1, 5 and 10 percent level.*

TABLE 4.9: Risk-Profits Variability Comparisons for Non-diversified, Least Diversified, Intermediate Diversified and Most Diversified Firms

Variables	Firm	Mean				
		1993-12	1993-97	1998-02	2003-07	2008-12
Risk-operating profits variability	Standalone	0.062	0.04	0.058	0.067	0.074
	Least diversified	0.053**	0.047	0.055	0.047**	0.061
	Intermediate diversified	0.051**	0.045	0.043**	0.054	0.059
	Most diversified	0.050**	0.04	0.051	0.044**	0.063
	All	0.056	0.043	0.053	0.056	0.066
Risk-net profits variability	Standalone	0.062	0.046	0.058	0.067	0.071
	Least diversified	0.051***	0.043	0.058	0.044***	0.058
	Intermediate diversified	0.049***	0.04	0.039***	0.054	0.059
	Most diversified	0.051**	0.039	0.05	0.046**	0.065
	All	0.055	0.043	0.053	0.056	0.064

*T-test is used for comparison of mean values. Wilcoxon signed-rank test is used for comparison of median values. ***, ** and * show differences are significant at 1, 5 and 10 percent level.*

TABLE 4.10: Comparison of Financial Characteristics for Group Firms and Standalone Firms

Variables	Firm	Whole period 1993-12		
		Mean	Median	St.Dev.
Tobin's Q	Standalone	1.347	0.971	1.613
	Group	1.111***	0.919***	0.916
	All	1.21	0.938	1.262
Profitability	Standalone	-0.010	0.003	0.162
	Group	0.011***	0.017***	0.128
	All	0.002	0.010	0.143
Dividend payout ratio	Standalone	0.115	0.000	0.392
	Group	0.175***	0.000***	0.404
	All	0.150	0.000	0.400
Dividend yield	Standalone	0.019	0.000	0.058
	Group	0.034***	0.000***	0.071
	All	0.028	0.000	0.066
Total assets	Standalone	1136	392	2732
	Group	3105***	910***	7989
	All	2279	656	6413
Sales	Standalone	971	385	1936
	Group	2682***	1020***	6661
	All	1965	684	5295
Listage	Standalone	27.212	21.000	12.832
	Group	30.628***	25.000***	35.446
	All	29.195	23	28.306
Current ratio	Standalone	1.185	0.874	1.483
	Group	1.368***	0.999***	1.676
	All	1.291	0.948	1.600
Fixed assets ratio	Standalone	0.573	0.596	0.239
	Group	0.534***	0.539***	0.220
	All	0.551	0.558	0.229
Leverage	Standalone	0.912	0.720	0.949
	Group	0.749***	0.668***	0.604
	All	0.817	0.689	0.772
Growth	Standalone	0.154	0.036	0.620
	Group	0.163	0.086***	0.536
	All	0.159	0.068	0.572
Risk	Standalone	0.231	0.051	0.554
	Group	0.167***	0.057	0.424
	All	0.194	0.054	0.484
Diversification	Standalone	1.000	1.000	0.000
	Group	8.562	7.000	6.066
	All	5.390	3.000	5.940

TABLE 4.11: Comparison of Financial Characteristics for Non-diversified, Least Diversified, Intermediate Diversified and Most Diversified Firms

Variables	Firm	Whole period 1993-12		
		Mean	Median	S.D.
Tobin's Q	Standalone	1.347	0.971	1.613
	Least diversified	1.093***	0.892***	1.066
	Intermediate diversified	1.092***	0.948**	0.675
	Most diversified	1.166***	0.936*	0.886
	All	1.21	0.938	1.262
Profitability	Standalone	-0.01	0.003	0.162
	Least diversified	0.007***	0.016***	0.131
	Intermediate diversified	0.007***	0.015***	0.126
	Most diversified	0.022***	0.024***	0.123
	All	0.002	0.010	0.143
Dividend payout ratio	Standalone	0.115	0.000	0.392
	Least diversified	0.191***	0.000***	0.429
	Intermediate diversified	0.148**	0.000***	0.382
	Most diversified	0.182***	0.000***	0.381
	All	0.150	0.000	0.400
Dividend yield	Standalone	0.019	0.000	0.058
	Least diversified	0.036***	0.000***	0.073
	Intermediate diversified	0.028***	0.000***	0.064
	Most diversified	0.037***	0.000***	0.075
	All	0.028	0.000	0.066
Total assets	Standalone	1136	392	2732
	Least diversified	1895***	839***	3451
	Intermediate diversified	2977***	938***	5467
	Most diversified	5429***	1022***	13828
	All	2279	656	6413
Sales	Standalone	971	385	1936
	Least diversified	1901***	956***	2984
	Intermediate diversified	2378***	1032***	4072
	Most diversified	4459***	1212***	11760
	All	1965	684	5295
List age	Standalone	27.212	21.000	12.832
	Least diversified	29.064***	22.000***	12.661
	Intermediate diversified	29.815***	26.000***	10.722
	Most diversified	34.438***	28.000***	68.027
	All	29.195	23.000	28.306
Current ratio	Standalone	1.185	0.874	1.483
	Least diversified	1.443***	0.981***	1.922
	Intermediate diversified	1.208	1.012***	1.285
	Most diversified	1.432***	1.000***	1.625
	All	1.291	0.948	1.6
Fixed assets ratio	Standalone	0.573	0.596	0.239
	Least diversified	0.538***	0.554***	0.224
	Intermediate diversified	0.530***	0.522***	0.21
	Most diversified	0.533***	0.533***	0.226
	All	0.551	0.558	0.229
Leverage	Standalone	0.912	0.72	0.949
	Least diversified	0.758***	0.675***	0.713
	Intermediate diversified	0.733***	0.687***	0.44
	Most diversified	0.751***	0.638***	0.569
	All	0.817	0.689	0.772
Growth	Standalone	0.154	0.036	0.620
	Least diversified	0.162	0.081***	0.547
	Intermediate diversified	0.158	0.102***	0.510
	Most diversified	0.169	0.079***	0.547
	All	0.159	0.068	0.572
Risk	Standalone	0.231	0.051	0.554
	Least diversified	0.168***	0.058	0.427
	Intermediate diversified	0.169***	0.053	0.437
	Most diversified	0.161***	0.057	0.402
	All	0.194	0.054	0.484
Diversification	Standalone	1.000	1.000	0.000
	Least diversified	3.202	3.000	1.098
	Intermediate diversified	9.067	9.000	1.697
	Most diversified	17.509	18.000	3.333
	All	5.390	3.000	5.940

Table 4.10 reports the financial characteristics across group firms and standalone firms in the whole sample of 1993-2012. Like Excess value, another market performance measure of Tobin's Q show similar trend. The mean (median) values are significantly lower for group firms than standalone firms which show that group firms perform lower relative to standalone firms in Pakistan. However, the accounting profitability measure show significantly higher mean (median) values of Profitability for group firms than standalone firms which suggest that group firms show superior accounting performance than standalone firms. The standard deviations of both Tobin's Q and Profitability are lower for group affiliates than unaffiliated firms indicating the risk sharing behavior of group firms as well.

Group firms are comparatively larger in size (in terms of both Total assets and Sales) and higher List age. Further, group firms seem significantly different from standalone firms in liquidity and growth and investment policies. They have relatively higher liquidity and growth opportunities than their counterpart standalone firms. However, group firms invest less in fixed assets and they have comparatively lower financial leverage. Although, it is easier for group firms to arrange debts due to internal markets mechanism and political connections but comparatively lower level of debt financing show that business groups attempts avoiding the additional monitoring of banks and other financial institutions. Moreover, group firms tend to show lower level of risk than their counterpart standalone firms.

Table 4.11 highlights the comparative mean (median) and standard deviation of financial characteristics for least diversified, intermediate diversified and most diversified firms relative to the corresponding standalone firms. Least, intermediate and most diversified group firms show relatively lower Tobin's Q whereas they have higher Profitability consistent with the above results. Similarly, the statistics draw attention to another distinguishing feature of firms belong to least, intermediate and most diversified BGs that these are significantly larger in size with higher mean (median) values of Total assets and Sales and have higher age of listing years than stand alone firms. Further, the diversified group firms have higher liquidity and growth and investment opportunities than standalone firms. Further, group firms diversified across various levels seem invest lower in fixed assets and have lower

financial leverage as well. Moreover, results underline that group firms are less risky and confirm the risk sharing among their affiliates being an important role of group headquarters in Pakistan.

Table 4.12 presents correlation matrix among the variables. There does not appear to be high correlations between any two of the independent variables. However, to evaluate more directly whether multicollinearity is present between the explanatory variables, the Variance Inflation Factor (VIF) procedure is undertaken and figures are reported in 4.13. VIF is the Variance Inflation Factor, defined as VIF = 1/ (1 - R2k). It represents the ratio of the actual variance of the estimated coefficient of the variable in question, to what it would have been in the absence of multicollinearity when R2k is zero. R2k is the coefficient of multiple determinations when one explanatory variable is regressed on constant and rest of the explanatory variables of the model. VIF values for all of the explanatory variables are reported in the table which shows that all of the VIF values are close to unity confirming that sample data do not suffer from any serious problem of multicollinearity.

TABLE 4.12: Correlation Analyses

Variable	1	2	3	4	5	6	7
Excess value-sales	1						
Group affiliation dummy	-0.134	1					
List age	-0.047	0.162	1				
Leverage	0.276	-0.069	-0.014	1			
Size	0.001	0.294	-0.002	-0.249	1		
Growth	-0.052	0.011	-0.033	0.010	0.033	1	
Profitability	-0.231	0.063	0.021	-0.274	0.134	0.117	1

All coefficients equal or greater than 0.10 are significant at 1 % level.

TABLE 4.13: Variance Inflation Factors

Variable	Coefficient variance	Centered VIF
Group affiliation dummy	0.000	1.103
Group diversification	0.000	1.083
Listage	0.000	1.032
Leverage	0.000	1.182
Size	0.000	1.184
Growth	0.000	1.018
Risk	0.000	1.077
Profitability	0.001	1.117
Constant	0.000	NA
Observation	4901	

4.1.2 Business Groups and Excess Value

Firstly, the study applies OLS estimation method across various panels. Panel A, B and C show the regression results when dependent variable is Excess value-sales and Panel D, E and F present the results when dependent variable is Excess value-EBIT. Similarly, Panel A and D demonstrates the regression results of Group affiliation dummy, Panel B and E gives the results of Group diversification and finally Panel C and F presents the results of group diversification across various levels e.g., Least diversified dummy, Intermediate diversified dummy and Most diversified dummy. Model 1 and 2 show the results of the whole period sample 1993-2012 and model 3 and 4, 5 and 6, 7 and 8 and 9 and 10 present the results of sub-period samples 1993-97, 1998-02, 2003-07 and 2008-12 respectively.

Panel A in Table 4.14 demonstrates the impact of group affiliation on firm performance when dependent variable is Excess value-sales. The Group affiliation dummy is negative in the whole period with coefficient value of -0.0709 ($p<0.001$) as shown in model 1. The relationship is consistently and significantly negative in

all of the sub-periods with coefficient values of -0.0881($p<0.001$) in 1993-97 period and -0.0874 ($p<0.001$) in 1998-02 period as shown in model 3 and 5. Model 7 and 9 show that Group affiliation dummy is significantly decreased having coefficient values of -0.0676 ($p<0.001$) in 2003-07 and -0.0700 ($p<0.001$) in 2008-12 periods. The figures demonstrate that results of Group affiliation dummy are unchanged even when industry dummies are included in the regression models. The coefficient value of group affiliation dummy is -0.0669 ($p<0.001$) in model 2 indicating that group firms trade at 6.69% discount during the whole period 1993-2012. The coefficient values of -0.0805 ($p<0.001$) and -0.0900 ($p<0.001$) as shown in model 4 and 6 tend to show an increase in group discount from 8.05% to 9% during1998-02 period. The coefficient value of -0.0543 ($p<0.001$) shown in model 8 indicate a sharp decline in group discount from 9% to 5.43% during 2003-07 period and finally coefficient of -0.0581 ($p<0.001$) in model 10 confirms the presence of group discount during in 2008-12 period. The results clearly indicate that group affiliation causes lower firm performance. The group affiliated firms consistently trade at discount in the whole period as well as in sub-periods in the post financial reforms and liberalization era in Pakistan. The findings are consistent with the studies of Lee et al. (2008); Ma et al. (2006); Lins and Servaes (2002); Joh (2003). The lower financial performance of group affiliated firms than standalone firms confirm that these firms are engaged in tunneling of firms resources at the expense of minority shareholders (MULLAINATHAN, 2002; Claessens et al., 2002; Bae et al., 2002; Faccio and Lang, 2002; Porta et al., 2002).

TABLE 4.14: Panel A: Group Affiliation and Excess Value-Sales-OLS

Variable	(1) Overall 1993-12		(2) 1993-97		(3) 1998-02		(4) 2003-07		(5)2008-12	
Group affiliation dummy	-0.0709***	-0.0669***	-0.0881***	-0.0805***	-0.0874***	-0.0900***	-0.0676***	-0.0543***	-0.0700***	-0.0581***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Listage	-0.0005**	-0.0005**	-0.0028***	-0.0027***	-0.0013**	-0.0015***	-0.0001	-0.0003	0.0027***	0.0026***
	0.0543	0.0513	0.0000	0.0000	0.0185	0.0066	0.7904	0.5780	0.0000	0.0000
Leverage	0.1493***	0.1555***	0.1367***	0.1570***	0.2022***	0.2115***	0.1605***	0.1725***	0.1267***	0.1382***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0232***	0.0231***	0.0364***	0.0181**	0.0328***	0.0271***	0.0279***	0.0349***	0.0171***	0.0236***
	0.0000	0.0000	0.0000	0.0295	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000
Growth	-0.0201***	-0.0193***	-0.0120	-0.0097	-0.0131	-0.0094	-0.0138	-0.0167	-0.0421***	-0.0440***
	0.0017	0.0020	0.4656	0.5265	0.3010	0.4441	0.1950	0.1084	0.0010	0.0004
Risk	0.0213***	0.0213***	0.0217	0.0182	0.0110	0.0113	0.0233*	0.0259*	0.0299*	0.0250
	0.0065	0.0053	0.2833	0.3302	0.4350	0.4033	0.0917	0.0528	0.0693	0.1189
Profitability	-0.2874***	-0.2881***	-0.1302*	-0.1912***	-0.4092***	-0.3769***	-0.2472***	-0.2397***	-0.2832***	-0.3136***
	0.0000	0.0000	0.0842	0.0073	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Constant	-0.2668***	-0.2148***	-0.2813***	0.1461**	-0.3333***	-0.1628***	-0.3152***	-0.4359***	-0.3076***	-0.4484***
	0.0000	0.0000	0.0000	0.0337	0.0000	0.0019	0.0000	0.0000	0.0000	0.0000
Observation	4901	4901	935	935	1178	1178	1477	1477	1311	1311
Sectors dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.1437	0.1877	0.1013	0.2431	0.2341	0.2952	0.1468	0.2103	0.1476	0.1993
F-statistics	118.492***	60.5814***	16.0424***	17.6687***	52.3992***	26.9460***	37.2725***	21.6818***	33.4138***	18.1624***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

Given the dichotomous nature of group affiliation, a continuous nature of measure is employed for group diversification. Further, group diversification may have varying performance impacts for firms belong to business groups diversified at various levels. In order to examine the performance impacts of group diversification across different levels, the study divides the business groups across three categories including least diversified, intermediate diversified and most diversified business groups and examine the comparative performance of firms affiliated with least diversified, intermediate diversified and most diversified business groups relative to standalone firms.

Panel B in Table 4.15 presents the results of Group diversification and Excess value-sales. Group diversification is consistently negatively related to Excess value-sales. The coefficient value is -0.0022 ($p<0.001$) during the whole period 1993-2012 as shown in model 1. The relationship is consistently negative and significant in all of the sub-periods except 2003-07 periods. The coefficient values are -0.0046 ($p<0.01$), -0.0027 ($p<0.05$), -0.0010 ($p>0.10$), -0.0023 ($p<0.10$) respectively during the 1993-97, 1998-02, 2003-07 and 2008-12 periods as shown in model 3, 5, 7 and 9. Model 2, 4, 6, 8 and 10 present that group diversification relationship is unchanged even when industry dummies are included in the regression models. The coefficient of Group diversification is -0.0019 ($p<0.01$) shown in model 2 which suggests the presence of group diversification discount during the whole period 1993-2012. The coefficients are -0.0027 ($p<0.10$), -0.0026 ($p<0.05$), -0.0004 ($p>0.10$) and -0.0021 ($p<0.10$) during the sub-periods 1993-97, 1998-02, 2003-07 and 2008-12 respectively as shown in model 4, 6, 8 and 10. The findings propose that group diversification hampers firm performance consistent with the studies of Lins and Servaes (2002); Lee et al. (2008); George and Kabir (2008). The results suggest that BGs use investment activities as a device controlling many firms with least capital invested. They attempt expropriation of firm resources from firms with least cash flow rights to firms with higher cash flow rights and thus causes serious agency conflicts among controlling shareholders and minority shareholders (Gutiérrez and Pombo, 2009; Claessens et al., 2002; Omran, 2009; Lan and Wang, 2004).

TABLE 4.15: Panel B: Group Diversification and Excess Value-Sales-OLS

Variable	(1) Overall 1993-12		(2) 1993-97		(3) 1998-02		(4) 2003-07		(5) 2008-12	
Group diversification	-0.0022***	-0.0019***	-0.0046***	-0.0027**	-0.0027**	-0.0026**	-0.0010	-0.0004	-0.0023*	-0.0021*
	0.0002	0.0011	0.0020	0.0553	0.0198	0.0241	0.3168	0.6705	0.0516	0.0659
Listage	-0.0006**	-0.0007**	-0.0028***	-0.0028***	-0.0015***	-0.0017***	-0.0004	-0.0006	0.0025***	0.0024***
	0.0198	0.0122	0.0001	0.0000	0.0079	0.0015	0.4014	0.2484	0.0000	0.0000
Leverage	0.1500***	0.1571***	0.1273***	0.1488***	0.2005***	0.2131***	0.1644***	0.1761***	0.1272***	0.1394***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0188***	0.0190***	0.0280***	0.0082	0.0250***	0.0186***	0.0219***	0.0294***	0.0140***	0.0213***
	0.0000	0.0000	0.0005	0.3127	0.0000	0.0014	0.0000	0.0000	0.0021	0.0000
Growth	-0.0201***	-0.0198***	-0.0090	-0.0072	-0.0128	-0.0104	-0.0135	-0.0172*	-0.0450***	-0.0465***
	0.0018	0.0017	0.5853	0.6412	0.3178	0.4076	0.2072	0.1005	0.0005	0.0002
Risk	0.0219***	0.0219***	0.0188	0.0156	0.0128	0.0119	0.0217	0.0246*	0.0324*	0.0263
	0.0056	0.0045	0.3558	0.4077	0.3677	0.3864	0.1207	0.0680	0.0502	0.1032
Profitability	-0.2889***	-0.2931***	-0.1586**	-0.2311***	-0.4255***	-0.3954***	-0.2469***	-0.2416***	-0.2718***	-0.3075***
	0.0000	0.0000	0.0358	0.0012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Constant	-0.2653***	-0.2218***	-0.2522***	0.1724**	-0.3162***	-0.1560***	-0.3043***	-0.4267***	-0.3079***	-0.4552***
	0.0000	0.0000	0.0000	0.0134	0.0000	0.0037	0.0000	0.0000	0.0000	0.0000
Observation	4901	4901	935	935	1178	1178	1477	1477	1311	1311
Sectors dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.1290	0.1747	0.0882	0.2281	0.2127	0.2728	0.1309	0.2002	0.1339	0.1906
F-statistics	104.6656***	55.5845***	13.9019***	16.3296***	46.4185***	24.2427***	32.7628***	20.4417***	29.9223***	17.2346***

****, ** and * represent coefficients significance at 1, 5 and 10%.*

Panel C in Table 4.16 presents the results of Least diversified dummy, Intermediated diversified dummy and Most diversified dummy when dependent variable is Excess value-sales. All of the three diversification dummies are consistently negatively related with Excess value-sales and the results are highly significant at various levels of significance. The coefficient values are -0.0883 ($p<0.001$), -0.0560 ($p<0.001$) and -0.0555 ($p<0.001$) respectively for Least, Intermediate and Most diversified dummies during the whole period 1993-2012 as shown is model 1. The coefficients are -0.1026 ($p<0.001$), -0.0468 ($p<0.10$) and -0.1126 ($p<0.001$) respectively during 1993-97 period; -0.10 ($p<0.001$), -0.0877 ($p<0.001$) and -0.0610 ($p<0.01$) respectively during 1998-02 period; -0.0920 ($p<0.001$), -0.0603 ($p<0.001$) and -0.0268 ($p>0.10$) respectively during 2003-07 period and finally -0.0819 ($p<0.001$), -0.0542 ($p<0.01$) and -0.0667 ($p>0.01$) respectively for Least diversified dummy, Intermediate diversified dummy and Most diversified dummy during 2008-12 period as shown in model 3, 5, 7 and 9.

The results are almost unchanged when industry dummies are included in the regression models. Model 2 shows the coefficient values of -0.0912 ($p<0.001$), -0.0341($p<0.001$) and -0.0589 ($p<0.001$) respectively for Least, Intermediate and Most diversified dummies during the whole period of 1993-2012. Model 4, 6, 8 and 10 gives the results of sub-periods which show that coefficients are -0.1185 ($p<0.001$), -0.0034 ($p>0.10$) and -0.0909 ($p<0.001$) respectively during 1993-97 period; -0.1134 ($p<0.001$), -0.0694 ($p<0.001$) and -0.0679 ($p<0.001$) respectively during 1998-02 period; -0.0851 ($p<0.001$), -0.0315 ($p<0.10$) and -0.0228 ($p>0.10$) respectively during 2003-07 period and finally these are -0.0726 ($p<0.001$), -0.0223 ($p>0.10$) and -0.0712 ($p<0.001$) respectively during 2008-12 period for Least diversified dummy, Intermediate diversified dummy and Most diversified dummy. The consistently and significantly negative coefficient signs of all of the three group diversification dummies indicate that firms affiliated with least, intermediate and most diversified business groups underperform than standalone firms during the whole period as well sub-periods in Pakistan.

Further, the results indicate a higher diversification discount for least diversified group affiliated firms relative to the firms affiliated with intermediate and most

diversified business groups. The results indicate that large diversified business groups are better than small diversified business groups.These results partially support to the results of earlier studies like Chang and Choi (1988) and Khanna and Palepu (2000b). Further, Khanna and Palepu, 2000b observe that group diversification initially declines the firm performance and however, it started to increase firm performance as group diversification exceeds a certain threshold level. They suggest small business groups are unable to develop skills and capabilities, internal processes or political clout to generate sufficient benefits to offset costs associated with group affiliation.

The control variables include firm list age, leverage, size, growth, risk and profitability. The results indicate that List age is significantly negatively related to Excess value-sales in the whole sample and sub-samples except 2008-12 period sub-sample where it is significantly positively related to Excess value-sales. The findings are consistent with the life cycle theory (Carney et al., 2009; George and Kabir, 2008; Guest and Sutherland, 2009). Leverage is positively related to excess value-sales and the relationship is highly significant. The positive performance impacts of leverage are consistent with the tax shield on debt and pecking order theory (Hansoge and Marisetty, 2011). The impact of firm Size is thoroughly positive in regression models and the relationships are highly significant. Large sized firms are better in a position to reap benefits of scales of economy and employ technology and managerial skills those might reasonably contribute to higher firm performance (Carney et al., 2009; George and Kabir, 2008; Purkayastha, 2013). Firm Growth variable is significantly negatively related to excess values. Risk variable is positively related (Carney et al., 2011) whereas Profitability variable is consistently and significantly negatively related to Excess value-sales.

TABLE 4.16: Panel C: Group Diversification Dummies and Excess Value-Sales-OLS

Variable	(1) Overall 1993-12		(2) 1993-97		(3) 1998-02		(4) 2003-07		(5) 2008-12	
Least diversified	-0.0883***	-0.0912***	-0.1026***	-0.1185***	-0.1000***	-0.1134***	-0.0920***	-0.0851***	-0.0819***	-0.0726***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Intermediated diversified	-0.0560***	-0.0341***	-0.0468**	0.0034	-0.0877***	-0.0694***	-0.0603***	-0.0315*	-0.0542***	-0.0223
	0.0000	0.0005	0.0548	0.8851	0.0000	0.0003	0.0004	0.0652	0.0044	0.2483
Most diversified	-0.0555***	-0.0589***	-0.1126***	-0.0909***	-0.0610***	-0.0679***	-0.0268	-0.0228	-0.0667***	-0.0712***
	0.0000	0.0000	0.0000	0.0002	0.0035	0.0009	0.1560	0.2186	0.0015	0.0006
Listage	-0.0005**	-0.0005**	-0.0028***	-0.0028***	-0.0014**	-0.0015***	-0.0002	-0.0003	0.0027***	0.0027***
	0.0428	0.0500	0.0001	0.0000	0.0124	0.0040	0.6728	0.5170	0.0000	0.0000
Leverage	0.1488***	0.1548***	0.1389***	0.1649***	0.2025***	0.2107***	0.1577***	0.1685***	0.1265***	0.1384***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0224***	0.0214***	0.0359***	0.0133	0.0316***	0.0244***	0.0263***	0.0327***	0.0164***	0.0223***
	0.0000	0.0000	0.0000	0.1090	0.0000	0.0000	0.0000	0.0000	0.0003	0.0000
Growth	-0.0201***	-0.0192***	-0.0111	-0.0089	-0.0140	-0.0110	-0.0135	-0.0160	-0.0413***	-0.0434***
	0.0017	0.0021	0.4984	0.5544	0.2683	0.3705	0.2012	0.1222	0.0012	0.0005
Risk	0.0215***	0.0218***	0.0240	0.0235	0.0105	0.0119	0.0234*	0.0253*	0.0297*	0.0252
	0.0061	0.0043	0.2339	0.2047	0.4565	0.3809	0.0894	0.0580	0.0704	0.1164
Profitability	-0.2881***	-0.2851***	-0.1241*	-0.1850***	-0.4041***	-0.3686***	-0.2545***	-0.2441***	-0.2826***	-0.3059***
	0.0000	0.0000	0.0992	0.0086	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Constant	-0.2607***	-0.1974***	-0.2812***	0.1789***	-0.3251***	-0.1330**	-0.3012***	-0.4110***	-0.3031***	-0.4391***
	0.0000	0.0000	0.0000	0.0093	0.0000	0.0128	0.0000	0.0000	0.0000	0.0000
Observation	4901	4901	935	935	1178	1178	1477	1477	1311	1311
Sectors dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.1457	0.1926	0.1060	0.2631	0.2349	0.2981	0.1522	0.2169	0.1476	0.2025
F-statistics	93.8736***	56.6538***	13.2990***	17.6702***	41.1621***	24.7984***	30.4390***	20.4656***	26.2034***	16.8376***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

The analyses are also done using estimations of random-effect Generalized Least square. The results of panel data confirm OLS results. Panel A in Table 4.17 presents that Group affiliation dummy is consistently and significantly negatively related to Excess value-sales in all of the models. The coefficients are -0.0840 ($p<0.001$), -0.0990 ($p<0.001$), -0.1183 ($p<0.001$), -0.0647 ($p<0.001$) and -0.0833 ($p<0.001$) in the overall period and sub-periods respectively as shown in model 1, 2, 3, 4 and 5 respectively. The findings suggest that group firms underperform than their counterpart standalone firms in Pakistan. The control variables show similar results to OLS results.

Similarly, Group diversification is also inversely related to Excess value-sales as shown in Panel B of Table 4.18. Model 1, 3, 5, 7 and 9 demonstrate that coefficient value is -0.0032 ($p<0.05$) in the whole period and -0.0046 ($p<0.10$), -0.0039 ($p<0.05$), -0.0011 ($p>0.10$) and -0.0039 ($p<0.05$) respectively in the sub-periods. These results suggest that group diversification harms group firms value in Pakistan. The firms belong to the diversified business groups underperform than their corresponding standalone firms. The findings are consistent with the earlier studies for instance Lins and Servaes (2002); Khanna and Palepu (2000a) among others.

Panel C in Table 4.19 shows performance of least diversified, intermediate diversified and most diversified group firms relative to standalone firms when dependent variable is Excess value-sales. Model 1 in Panel C shows that coefficient values are -0.1043 ($p<0.001$), -0.1328 ($p<0.001$), -0.0713 ($p<0.01$) are for Least diversified dummy, Intermediate diversified dummy and Most diversified dummy during the 1993-2012 period. The coefficients are still negative for all of the three diversification dummies in sub-periods with varying levels of significance. The results suggest that firms affiliated with least, intermediate and most diversified business groups underperform to standalone firms in Pakistan. These results are consistent with OLS results explained above. Noticeably, all of the control variables show similar results to OLS results.

TABLE 4.17: Panel A: Group Affiliation and Excess Value-Sales-RE-GLS

Variable	(1) Overall 1993-12	(2) 1993-97	(3) 1998-02	(4) 2003-07	(5) 2008-12
Group affiliation dummy	-0.0840***	-0.0990***	-0.1183***	-0.0647***	-0.0833***
	0.0000	0.0005	0.0000	0.0030	0.0006
Listage	-0.0023***	-0.0037***	-0.0017**	-0.0005	0.0032***
	0.0000	0.0004	0.0413	0.5187	0.0006
Leverage	0.1683***	0.1575***	0.2140***	0.1965***	0.1378***
	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0419***	0.0437***	0.0384***	0.0418***	0.0364***
	0.0000	0.0003	0.0000	0.0000	0.0000
Growth	-0.0349***	-0.0551***	-0.0468***	-0.0428***	-0.0477***
	0.0000	0.0000	0.0000	0.0000	0.0000
Risk	0.0135**	0.0470***	0.0109	0.0140	0.0128
	0.0427	0.0019	0.3264	0.2097	0.2987
Profitability	-0.2535***	-0.3035***	-0.3134***	-0.2392***	-0.1940***
	0.0000	0.0000	0.0000	0.0000	0.0000
Constant	-0.3376***	0.0112	-0.2020**	-0.4985***	-0.5547***
	0.0000	0.9144	0.0106	0.0000	0.0000
Observation	4901	935	1178	1477	1311
Sectors dummy	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.1398	0.1857	0.2442	0.1670	0.1370
F-statistics	42.9204***	12.8340***	21.0133***	16.5795***	11.9478***
Chi-square	88.2435***	63.9558***	43.2309***	35.4106***	43.9897***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.18: Panel B: Group Diversification and Excess Value-Sales-RE-GLS

Variable	(1) Overall 1993-12	(2) 1993-97	(3) 1998-02	(4) 2003-07	(5) 2008-12
Group diversification	-0.0032**	-0.0046*	-0.0039**	-0.0011*	-0.0039**
	0.0231	0.0546	0.0370	0.5491	0.0498
Listage	-0.0024***	-0.0039***	-0.0020**	-0.0008	0.0030***
	0.0000	0.0003	0.0193	0.3405	0.0016
Leverage	0.1689***	0.1527***	0.2138***	0.1995***	0.1383***
	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0408**	0.0366***	0.0306***	0.0382***	0.0345***
	0.0000	0.0021	0.0005	0.0000	0.0000
Growth	-0.0351***	-0.0543**	-0.0471***	-0.0431***	-0.0483***
	0.0000	0.0000	0.0000	0.0000	0.0000
Risk	0.0138**	0.0471***	0.0118	0.0140	0.0129
	0.0382	0.0019	0.2901	0.2105	0.2929
Profitability	-0.2545***	-0.3154***	-0.3170***	-0.2397***	-0.1917***
	0.0000	0.0000	0.0000	0.0000	0.0000
Constant	-0.3749***	0.0063	-0.2091**	-0.5099***	-0.5760***
	0.0000	0.9528	0.0103	0.0000	0.0000
Observation	4901	935	1178	1477	1311
Sectors dummy	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.1362	0.1782	0.2279	0.1623	0.1317
F-statistics	41.6649***	12.2525***	19.2857***	16.0482***	11.4551***
Chi-square	91.7364***	65.8082***	45.2405***	36.2848***	46.1064***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.19: Panel C: Group Diversification Dummies and Excess Value-Sales-RE-GLS

Variable	(1) Overall 1993-12	(2) 1993-97	(3) 1998-02	(4) 2003-07	(5) 2008-12
Least diversified	-0.1043***	-0.1328***	-0.1445***	-0.0939***	-0.0955***
	0.0000	0.0001	0.0000	0.0003	0.0010
Intermediated diversified	-0.0630***	-0.0294	-0.1010***	-0.0471	-0.0481
	0.0082	0.4433	0.0012	0.1160	0.1585
Most diversified	-0.0713***	-0.1145***	-0.0868***	-0.0307	-0.1005***
	0.0044	0.0056	0.0079	0.3442	0.0060
Listage	-0.0023***	-0.0038***	-0.0018**	-0.0006	0.0032***
	0.0000	0.0002	0.0315	0.4977	0.0006
Leverage	0.1680***	0.1594***	0.2127***	0.1941***	0.1376***
	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0413***	0.0403***	0.0355***	0.0404***	0.0356***
	0.0000	0.0007	0.0001	0.0000	0.0000
Growth	-0.0348***	-0.0545***	-0.0472***	-0.0425***	-0.0475***
	0.0000	0.0000	0.0000	0.0000	0.0000
Risk	0.0135**	0.0480***	0.0108	0.0138	0.0127
	0.0430	0.0015	0.3303	0.2160	0.3020
Profitability	-0.2538***	-0.3031***	-0.3112***	-0.2410***	-0.1923***
	0.0000	0.0000	0.0000	0.0000	0.0000
Constant	-0.3304***	0.0379	-0.1719**	-0.4807***	-0.5487***
	0.0000	0.7154	0.0333	0.0000	0.0000
Observation	4901	935	1178	1477	1311
Sectors dummy	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.1401	0.1902	0.2449	0.1683	0.1371
F-statistics	39.0072***	11.9710***	19.1768***	15.2206***	10.9074***
Chi-square	91.7463***	64.7353***	42.9738***	37.7152***	43.9008***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

4.1.2.1 Robustness Check

Panel D in Table 4.20 presents the results of Group affiliation dummy when dependent variable is Excess value-EBIT. The results are almost similar to the above results of Excess value-sales. The coefficient value of Group affiliation dummy is -0.0191 ($p<0.05$) in model 1 showing that group firms trade at 1.91% discount during the whole sample period of 1993-2012 period. Model 3 shows that coefficient value is 0.0098 ($p>0.10$) in 1993-97 which suggest that group firms do not perform significantly different from standalone during the early period of post financial reforms. However, the coefficient value of -0.0392 ($p<0.05$) in model 5 indicate that group firms started to trade at a discount of 3.92% during 1998-02 period. The group discount slightly decreases from 3.92% to 3.29% during 2003-07 period as shown by the coefficient value of -0.0329 ($p<0.05$) in model 7. The group discount continues to fall and finally coefficient value of 0.0065 ($p>0.10$) confirms that group firms do not perform significantly lower than standalone firms during 2008-12 period. The results are unchanged when industry dummies are included in the regression models as shown is model 2, 4, 6, 8 and 10. The corresponding figure is -0.0229 ($p<0.01$) in model 2 which suggests the presence of group discount of 2.29% during the whole period 1993-2012. Similarly, coefficient value of 0.0020 ($p>0.10$) in model 4 confirms the above results that group firms were not trading at discount at the early stage of post financial reforms era. The group discount is 4.48% in 1998-02 period which started to decrease to 2.65% in 2003-07 period as shown by the coefficient values of -0.0448 ($p<0.01$) and -0.0265 ($p<0.05$). However, the results indicate that group discount is still present during the 2008-12 period but it is insignificant as shown by the coefficient value of -0.0075 ($p>0.10$) in model 10. The results reveal that group firms do not trade at discount during the early periods of post financial reforms. Although, the group discount is present during the latter periods and however, it is not well pronounced during 2008-12 period. The findings again suggest that group firms are thoroughly underperform than standalone firms in Pakistan. These results are consistent with earlier studies of Lee et al. (2008) and Khanna and Palepu (2000a).

TABLE 4.20: Panel D: Group Affiliation and Excess Value-EBIT-OLS

	(1) Overall 1993-12		(2) 1993-97		(3) 1998-02		(4) 2003-07		(5) 2008-12	
Group affiliation dummy	-0.0191**	-0.0229***	0.0098	0.0020	-0.0392**	-0.0448***	-0.0329**	-0.0265**	0.0065	-0.0075
	0.0156	0.0036	0.6001	0.9139	0.0139	0.0049	0.0176	0.0493	0.6909	0.6282
Listage	0.0006**	0.0005*	0.0004	0.0008	-0.0009	-0.0005	0.0006	0.0003	0.0012	0.0006
	0.0337	0.1024	0.5160	0.2722	0.1419	0.4301	0.2814	0.5843	0.0508	0.3452
Leverage	0.1498***	0.1551***	0.1618***	0.1639***	0.1373***	0.1393***	0.1039***	0.1175***	0.1958***	0.2119***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	-0.0063**	0.0001	-0.0014	0.0038	-0.0117*	-0.0053	-0.0060	-0.0039	-0.0243***	-0.0122**
	0.0218	0.9665	0.8646	0.6609	0.0661	0.4282	0.2243	0.4336	0.0000	0.0330
Growth	0.0041	0.0049	-0.0187	-0.0241	0.0350**	0.0358**	-0.0177	-0.0187	0.0010	-0.0013
	0.5909	0.5139	0.3401	0.2124	0.0173	0.0135	0.1745	0.1365	0.9474	0.9275
Risk	-0.0443***	-0.0446***	-0.0519**	-0.0736***	-0.0173	-0.0159	-0.0406**	-0.0451**	-0.0787***	-0.0685***
	0.0000	0.0000	0.0132	0.0005	0.3001	0.3314	0.0333	0.0140	0.0017	0.0041
Profitability	-1.0814***	-1.0941***	-0.8761***	-0.7863***	-1.0147***	-1.0804***	-1.2894***	-1.4031***	-1.2990***	-1.3893***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Constant	0.0543***	0.0286	0.0059	-0.0201	0.0954**	0.1963**	0.1027***	0.0203	0.1737***	0.0896
	0.0067	0.3561	0.9096	0.7810	0.0319	0.0169	0.0067	0.7236	0.0003	0.1591
Observation	3463	3463	682	682	876	876	1010	1010	895	895
Sectors dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.2354	0.2617	0.1982	0.2313	0.2323	0.2744	0.2614	0.3347	0.2835	0.3715
F-statistics	153.2828***	65.5932***	25.0499***	12.3871***	38.8195***	18.4147***	52.0221***	27.7109***	51.5432***	28.8081***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

Panel E in Table 4.21 presents the results of Group diversification when dependent variable is Excess value-EBIT. The coefficient of Group diversification are -0.0023 ($p<0.001$) and -0.0018 ($p<0.01$) during the whole periods 1993-2012 as shown in model 1 and 2. Like the above results of Excess value-sales, Group diversification is consistently negatively related to Excess value-EBIT and however, the results are not significant in few of the sub-periods' regression models. The results confirm that group diversification harms firm performance in Pakistan. The findings suggest that members of the business group attempt expropriating the firms' resources at the cost of external shareholders through diversification activities and thus it is a major reason of the severe agency costs among the shareholders e.g., controlling (dominant) shareholders and minority shareholders (Lins and Servaes, 2002; Chang and Hong, 2000; Johnson and Tian, 2000).

Panel F in Table 4.22 presents the results of group diversification dummies when dependent variable is Excess value-EBIT. The results are almost similar to the above results presented in Panel E except the results of few models where the signs of Intermediate diversified dummy are positive. The negative coefficient values of group diversified dummies tend to confirm lower performance of group firms diversified at different levels when compared with standalone firms. The findings are consistent with the expectations (Chang and Choi, 1988; Khanna and Palepu, 2000b).

The control variables consist of firm list age, leverage, size, growth, risk and profitability. The results indicate that List age is significantly positively related to Excess value-sales. Leverage is positively related to Excess value-EBIT and the relationship is highly significant. The statistics show that Size variable is negatively related to Excess value-EBIT. Both Risk and Profitability variables are significantly negatively related to Excess value-EBIT.

TABLE 4.21: Panel E: Group Diversification and Excess Value-EBIT-OLS

Variable	(1) Overall 1993-12		(2) 1993-97		(3) 1998-02		(4) 2003-07		(5) 2008-12	
Group diversification	-0.0023***	-0.0018***	-0.0019	-0.0018	-0.0037***	-0.0033**	-0.0020*	-0.0015	-0.0004	0.0007
	0.0004	0.0055	0.1780	0.2147	0.0066	0.0163	0.0962	0.1728	0.7739	0.5738
Listage	0.0007**	0.0005	0.0006	0.0009	-0.0008	-0.0005	0.0005	0.0002	0.0013**	0.0005
	0.0243	0.1048	0.3592	0.1990	0.1883	0.4137	0.3311	0.6525	0.0416	0.4051
Leverage	0.1493***	0.1555***	0.1622***	0.1641***	0.1342***	0.1398***	0.1049***	0.1186***	0.1956***	0.2122***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	-0.0055**	0.0000	0.0031	0.0071	-0.0109*	-0.0060	-0.0065	-0.0046	-0.0233***	-0.0135**
	0.0433	0.9925	0.6876	0.3972	0.0887	0.3683	0.1906	0.3588	0.0000	0.0189
Growth	0.0042***	0.0050	-0.0199	-0.0250	0.0369**	0.0372**	-0.0169	-0.0184	0.0012	-0.0016
	0.5811	0.5018	0.3080	0.1940	0.0122	0.0103	0.1952	0.1442	0.9344	0.9110
Risk	-0.0435***	-0.0435***	-0.0481**	-0.0700***	-0.0168	-0.0149	-0.0394**	-0.0444**	-0.0795***	-0.0672***
	0.0000	0.0000	0.0222	0.0009	0.3139	0.3640	0.0390	0.0156	0.0015	0.0047
Profitability	-1.0755***	-1.0958***	-0.8615***	-0.7783***	-1.0172***	-1.0913***	-1.2809***	-1.4024***	-1.2947***	-1.3955***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Constant	0.0495**	0.0207	-0.0069	-0.0354	0.0872*	0.1733**	0.0977**	0.0185	0.1711***	0.0934**
	0.0136	0.5055	0.8941	0.6247	0.0513	0.0372	0.0111	0.7504	0.0005	0.1444
Observation	3463	3463	682	682	876	876	1010	1010	895	895
Sectors dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.2369	0.2616	0.2000	0.2331	0.2334	0.2726	0.2593	0.3333	0.2835	0.3715
F-statistics	154.5571***	65.5404***	25.3276***	12.5007***	39.0681***	18.2553***	51.4632***	27.5493***	51.5280***	28.8151***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.22: Panel F: Group Diversification Dummies and Excess Value-EBIT-OLS

Variable	(1) Overall 1993-12		(2) 1993-97		(3) 1998-02		(4) 2003-07		(5) 2008-12	
Least diversified	-0.0263***	-0.0307***	0.0119	0.0032	-0.0423**	-0.0499***	-0.0543***	-0.0438***	-0.0059	-0.0261***
	0.0050	0.0011	0.5823	0.8827	0.0240	0.0077	0.0009	0.0056	0.7585	0.1598
Intermediated diversified	0.0172**	0.0059	0.0359	0.0282	-0.0055	-0.0131	0.0115	0.0163	0.0489**	0.0101
	0.1001	0.5822	0.1409	0.2637	0.7883	0.5351	0.5221	0.3654	0.0313	0.6505
Most diversified	-0.0572***	-0.0434***	-0.0284	-0.0284	-0.0991***	-0.0816***	-0.0608***	-0.0502**	-0.0156	0.0068
	0.0000	0.0002	0.2773	0.2824	0.0001	0.0010	0.0055	0.0173	0.4957	0.7588
Listage	0.0007**	0.0005*	0.0006	0.0008	-0.0007	-0.0004	0.0006	0.0004	0.0013**	0.0006
	0.0163	0.0739	0.3943	0.2574	0.2668	0.5237	0.2343	0.4943	0.0409	0.3242
Leverage	0.1507***	0.1555***	0.1619***	0.1660***	0.1387***	0.1421***	0.1056***	0.1189***	0.1943***	0.2106***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	-0.0053*	-0.0001	-0.0008	0.0031	-0.0091	-0.0054	-0.0054	-0.0044	-0.0242***	-0.0135**
	0.0512	0.9592	0.9212	0.7277	0.1568	0.4227	0.2812	0.3800	0.0000	0.0194
Growth	0.0039	0.0047	-0.0191	-0.0243	0.0358**	0.0357**	-0.0174	-0.0188	0.0006	-0.0013
	0.6046	0.5318	0.3292	0.2075	0.0144	0.0135	0.1795	0.1335	0.9695	0.9259
Risk	-0.0421***	-0.0434	-0.0515	-0.0722	-0.0137	-0.0137	-0.0386	-0.0441	-0.0758	-0.0689
	0.0000	0.0000	0.0139	0.0006	0.4077	0.4022	0.0419	0.0157	0.0024	0.0038
Profitability	-1.0698***	-1.0853***	-0.8785***	-0.7932***	-1.0015***	-1.0656***	-1.2737***	-1.3792***	-1.2834***	-1.3845***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Constant	0.0457**	0.0290	0.0011	-0.0218	0.0746*	0.1941**	0.0955**	0.0196	0.1715***	0.1066*
	0.0232	0.3527	0.9838	0.7654	0.0959	0.0205	0.0131	0.7347	0.0004	0.0974
Observation	3463	3463	682	682	876	876	1010	1010	895	895
Sectors dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.2427	0.2648	0.2023	0.2336	0.2422	0.2785	0.2709	0.3417	0.2879	0.3725
F-statistics	124.2987***	60.3724***	20.1919***	11.3778***	32.0712***	17.0872***	42.6636***	25.9394***	41.1545***	26.2685***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

Table 4.23, 4.24 and 4.25 give the results of random effect Generalized Least Square regression models when dependent variable is Excess value-EBIT. Panel D of Table 4.23 shows coefficient values of -0.0268 (p<0.05), 0.120 (p>0.10), -0.0465 (p<0.05), -0.0297 (p<0.10) and -0.0058 (p>0.10) during the whole period and sub-periods. The results are significant in the overall period and sub-periods of 1998-02 and 2003-07. The findings clearly demonstrate that performance of group affiliated firms is lower than unaffiliated firms during the post financial reforms' period in Pakistan.

TABLE 4.23: Panel D: Group Affiliation and Excess Value-EBIT-RE-GLS

Variable	(1) Overall 1993-12	(2) 1993-97	(3) 1998-02	(4) 2003-07	(5) 2008-12
Group affiliation dummy	-0.0268**	0.0120	-0.0465**	-0.0297*	-0.0058
	0.0298	0.6309	0.0262	0.0863	0.7552
Listage	0.0006	0.0008	-0.0008	0.0000	0.0004
	0.1773	0.3695	0.2940	0.9470	0.5803
Leverage	0.1542***	0.1581***	0.1248***	0.1030***	0.2062***
	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0094**	0.0112	-0.0041	0.0024	-0.0117**
	0.0120	0.3267	0.6258	0.6957	0.0759
Growth	-0.0057	-0.0255	0.0155	-0.0276**	-0.0080
	0.4270	0.1295	0.2447	0.0192	0.5629
Risk	-0.0404***	-0.0626***	-0.0112	-0.0438**	-0.0675***
	0.0000	0.0047	0.5128	0.0147	0.0043
Profitability	-1.0322***	-0.8957***	-1.0754***	-1.2867***	-1.3904***
	0.0000	0.0000	0.0000	0.0000	0.0000
Constant	-0.0352	-0.0722	0.2198**	0.0404	0.0865
	0.3923	0.4451	0.0219	0.5534	0.2392
Observation	3463	682	876	1010	895
Sectors dummy	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.2143	0.1990	0.2330	0.2621	0.3336
F-statistics	50.7044***	10.4010***	14.9861***	19.8626***	24.5576***
Chi-square	45.9239***	59.2262***	26.9029***	25.6255***	10.9431***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

Panel E in Table 4.24 shows that Group diversification negatively affects firm

performance and however, the results are significant in the 1993-2012 and 1998-02 periods only. The statistics again confirm that group diversification adversely affects firm performance. The rest of the variables show similar statistics as shown in OLS regression results.

TABLE 4.24: Panel E: Group Diversification and Excess Value-EBIT-RE-GLS

Variable	(1) Overall 1993-12	(2) 1993-97	(3) 1998-02	(4) 2003-07	(5) 2008-12
Group diversification	-0.0025**	-0.0013	-0.0038**	-0.0021	0.0007
	0.0130	0.5259	0.0352	0.1491	0.6427
Listage	0.0006	0.0010	-0.0008	-0.0001	0.0003
	0.1756	0.3081	0.3005	0.9058	0.6422
Leverage	0.1547***	0.1590***	0.1260***	0.1043***	0.2062***
	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0097***	0.0150	-0.0037	0.0022	-0.0127*
	0.0096	0.1757	0.6670	0.7180	0.0545
Growth	-0.0057	-0.0263	0.0163	-0.0275**	-0.0082
	0.4207	0.1171	0.2216	0.0196	0.5532
Risk	-0.0397***	-0.0610***	-0.0097	-0.0435**	-0.0667***
	0.0001	0.0061	0.5707	0.0155	0.0047
Profitability	-1.0320***	-0.8871***	-1.0814***	-1.2838***	-1.3950***
	0.0000	0.0000	0.0000	0.0000	0.0000
Constant	-0.0455	-0.0854	0.1879*	0.0330	0.0895
	0.2673	0.3671	0.0539	0.6320	0.2257
Observation	3463	682	876	1010	895
Sectors dummy	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.2146	0.1992	0.2324	0.2612	0.3337
F-statistics	50.7959***	10.4134***	14.9444***	19.7780***	24.5603***
Chi-square	44.7983***	59.2893***	26.9110***	25.8295***	10.5688***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

Panel F in Table 4.25 shows that Least diversified dummy and Most diversified dummy are negatively related to excess value-EBIT and however, Intermediate diversified dummy is not significantly related to excess value-EBIT in any model. Again, these results reveal that group firms diversified at different levels underperform than standalone firms. The regression models include control variables like

list age, leverage, size, growth, risk and profitability. The results of these control variables are highly consistent with OLS results.

TABLE 4.25: Panel F: Group Diversification Dummies and Excess Value-EBIT-RE-GLS

Variable	(1) Overall 1993-12	(2) 1993-97	(3) 1998-02	(4) 2003-07	(5) 2008-12
Least diversified	-0.0312**	0.0090	-0.0469*	-0.0454**	-0.0231
	0.0355	0.7588	0.0558	0.0261	0.2977
Intermediated diversified	0.0050	0.0467	-0.0146	0.0155	0.0107
	0.7704	0.1638	0.6092	0.5082	0.6882
Most diversified	-0.0553***	-0.0240	-0.0893***	-0.0576**	0.0079
	0.0026	0.5042	0.0058	0.0299	0.7658
Listage	0.0006	0.0008	-0.0007	0.0000	0.0004
	0.1555	0.3699	0.3615	0.9762	0.5683
Leverage	0.1549***	0.1605***	0.1270***	0.1049***	0.2051***
	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0094**	0.0103	-0.0034	0.0018	-0.0129*
	0.0123	0.3698	0.6951	0.7684	0.0517
Growth	-0.0057	-0.0256	0.0159	-0.0277**	-0.0078
	0.4267	0.1284	0.2350	0.0187	0.5738
Risk	-0.0398***	-0.0613***	-0.0091	-0.0431**	-0.0679***
	0.0001	0.0058	0.5948	0.0160	0.0040
Profitability	-1.0287***	-0.9014***	-1.0683***	-1.2716***	-1.3879***
	0.0000	0.0000	0.0000	0.0000	0.0000
Constant	-0.0386	-0.0722	0.2067**	0.0373	0.1025
	0.3502	0.4502	0.0361	0.5857	0.1681
Observation	3463	682	876	1010	895
Sectors dummy	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.2160	0.2003	0.2351	0.2679	0.3338
F-statistics	46.4149***	9.5280***	13.8081***	18.5809***	22.3268***
Chi-square	45.0341***	58.4407***	26.8781***	25.2525***	11.1454***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

4.1.2.2 Group Affiliation Interaction Analyses

The interaction analyses are done to examine if resource sharing within group firms is value enhancing activity and beneficial for firm value or it destroys firm value? Groups firms enjoy internal market networks of resource sharing. These firms share their resources like finance, inputs, labor and managerial skills, product markets, brand names, reputation capital and even help in getting loans. The interaction analyses observe if firm's listing exposure, leverage and size significantly differently affect the performance of group affiliates than standalone firms.

Table 4.26 and 4.27 present the OLS regression results of group affiliation interaction analyses when dependent variable is Excess value-sales. The results of interactions between group affiliation and List age are significantly positive in most of the models. The significantly positive coefficients are well pronounced in the whole period sample 1993-2012 and subsamples of 2003-07 and 2008-12. The results suggest that performance impacts of firm's listing exposure are significantly different for group firms than standalone firms. As there are many firms under the umbrella of a business group and group members possess more valuable information about the stock market operations and well as market conditions, therefore greater market exposure benefits group firms. The interaction between group affiliation and Leverage and group affiliation and Size tend to show significantly positive coefficients in many models. The results are consistent with internal markets of group networks available for group firms sharing their resources like information, capital, assets and even political links in getting loans. Group firms are privileged because this mechanism of resource sharing is unavailable to standalone firms (Leff, 1978; Guillen, 2000; Khanna and Palepu, 1997; Peng et al., 2008).

Table 4.28 reports the panel data interaction results. The findings confirm the above OLS results. All of the interactive dummies are still positive which suggest that firm listing exposure, leverage and size variables positively contribute to the performance of group firms and further, the strength of relationship is significantly higher for these firms as compared to standalone firms in Pakistan. The results support to resources sharing hypothesis (Guillen, 2000).

TABLE 4.26: Interaction Analyses when Dep. Variable is Excess Value-Sales-OLS

Variable	(1) Overall 1993-12			(2) 1993-97			(3) 1998-02			(4) 2003-07			(5) 2008-12		
Group affiliation dummy	-0.0917***	-0.099***	-0.196***	-0.072***	-0.084**	-0.713***	-0.071***	-0.086***	-0.538***	-0.114***	-0.120***	-0.126**	-0.120***	-0.119***	0.037
	0.0000	0.000	0.000	0.003	0.028	0.000	0.001	0.002	0.000	0.000	0.000	0.032	0.000	0.000	0.559
Listage	-0.001***	-0.0005*	-0.0006**	-0.002**	-0.002***	-0.003***	-0.0008	-0.0013**	-0.0019***	-0.0014*	-0.0001	-0.0002	0.001*	0.002***	0.002**
	0.005	0.0524	0.021	0.036	0.000	0.000	0.339	0.018	0.000	0.054	0.799	0.745	0.082	0.000	0.000
Leverage	0.1493	0.1312	0.1513	0.1374	0.1400	0.1651	0.2028	0.2033	0.225	0.1603	0.1377	0.1600	0.1270	0.0967	0.1272
	0.0000	0.0000	0.0000	0.0000	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0227***	0.0238***	0.0126***	0.0380***	0.0363***	-0.0126	0.0336***	0.0327***	-0.0068	0.0273***	0.0288***	0.0228***	0.0169***	0.0177***	0.026***
	0.0000	0.0000	0.0005	0.0000	0.0000	0.2534	0.0000	0.0000	0.398	0.0000	0.0000	0.0007	0.0002	0.0001	0.0002
Growth	-0.0204***	-0.0201***	-0.0202***	-0.0118	-0.0121	-0.0148	-0.0133	-0.013	-0.0168	-0.0146	-0.0138	-0.0134	-0.042***	-0.0414***	-0.0426***
	0.0015	0.0016	0.0015	0.4731	0.4642	0.3600	0.2923	0.3042	0.1779	0.1685	0.1931	0.2052	0.001	0.0011	0.0008
Risk	0.0213***	0.0214***	0.0207***	0.0220	0.0217	0.0199	0.011	0.0109	0.0086	0.0239*	0.0195	0.0233*	0.0283*	0.0317*	0.0314*
	0.0066	0.0062	0.008	0.2772	0.2833	0.3151	0.4321	0.4423	0.5324	0.083	0.1593	0.0926	0.0854	0.0534	0.0565
Profit-ability	-0.285***	-0.2877***	-0.2879***	-0.1345*	-0.1288*	-0.153**	-0.4088***	-0.4093***	-0.4054***	-0.2403***	-0.245***	-0.2482***	-0.285***	-0.287***	-0.280***
	0.0000	0.0000	0.0000	0.075	0.0930	0.0377	0.0000	0.0000	0.0000	0.0000	0.000	0.0000	0.0000	0.0000	0.000
GA* Listage	0.0011**			-0.0013			-0.001			0.0023**			0.002*		
	0.0412			0.3384			0.3737			0.0217			0.085		
GA* Leverage		0.0377***			-0.0046			-0.0019			0.072***			0.064**	
		0.0094			0.9165			0.9544			0.006			0.0113	
GA* Size			0.0193***			0.106***			0.0735***			0.0089			-0.014***
			0.0001			0.000			0.000			0.306			0.088
Constant	-0.2524***	-0.256***	-0.200***	-0.299***	-0.283***	-0.026***	-0.347***	-0.333***	-0.111**	-0.285***	-0.301***	-0.282***	-0.278***	-0.289***	-0.370**
	0.0000	0.000	0.000	0.000	0.000	0.684	0.000	0.000	0.026	0.000	0.000	0.000	0.000	0.000	0.000
Obs.	4901	4901	4901	935	935	935	1178	1178	1178	1477	1477	1477	1311	1311	1311
Sector dummy	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Adj.R-square	0.1443	0.1447	0.1464	0.1012	0.1004	0.1397	0.234	0.2335	0.264	0.1493	0.1505	0.1468	0.148	0.151	0.148
F-stats	104.2***	104.6***	106.0***	14.1***	14.0***	19.9***	45.9***	45.8***	53.0***	33.3***	33.6***	32.7***	29.6***	30.1***	29.6***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.27: Interaction Analyses when Dep. Variable is Excess Value-Sales-OLS (Continued)

Variable	(1) Overall 1993-12			(2) 1993-97			(3) 1998-02			(4)2003-07			(5) 2008-12		
Group affiliation dummy	-0.084***	-0.088***	-0.211***	-0.068***	-0.066*	-0.655***	-0.079***	-0.080***	-0.491***	-0.071***	-0.091***	-0.161***	-0.086***	-0.101***	0.030
	0.000	0.000	0.000	0.002	0.069	0.000	0.000	0.003	0.000	0.003	0.000	0.005	0.008	0.000	0.637
Listage	-0.001**	-0.0005**	-0.0006**	-0.0021**	-0.0027***	-0.0034***	-0.0011	-0.0015***	-0.0021***	-0.0007	-0.0003	-0.0003	0.002**	0.0027***	0.002**
	0.0102	0.0490	0.0142	0.0262	0.0000	0.0000	0.1504	0.0066	0.0001	0.3195	0.5829	0.4897	0.0245	0.0000	0.000
Leverage	0.1555***	0.1415***	0.1576***	0.1577***	0.1706***	0.1829***	0.2119***	0.2187***	0.2314***	0.1725***	0.1562***	0.1714***	0.1381***	0.1111***	0.138**
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000
Size	0.0226***	0.0235***	0.0111***	0.0196**	0.0175**	-0.0273**	0.0278***	0.0267***	-0.0074	0.0345***	0.0352***	0.0261***	0.0233***	0.024***	0.030**
	0.0000	0.0000	0.0022	0.0216	0.0382	0.0136	0	0	0.367	0.0000	0.0000	0.0001	0.0000	0.0000	0.000
Growth	-0.0195***	-0.0194***	-0.0195***	-0.0098	-0.0101	-0.0115	-0.0095	-0.009	-0.0126	-0.0168	-0.0168*	-0.0161	-0.0441***	-0.0437***	-0.044**
	0.0018	0.0019	0.0017	0.5236	0.5123	0.4434	0.4412	0.4656	0.2997	0.1064	0.1048	0.1204	0.0004	0.0004	0.000
Risk	0.0213***	0.0214***	0.0205***	0.0185	0.0181	0.0164	0.0113	0.0107	0.0084	0.0261**	0.0231*	0.0261**	0.0244	0.0263*	0.026*
	0.0052	0.0051	0.0072	0.3237	0.3332	0.3721	0.4045	0.4331	0.5289	0.0509	0.0853	0.0513	0.1286	0.1015	0.102
Profit-ability	-0.285***	-0.288***	-0.289***	-0.194***	-0.184**	-0.206***	-0.377***	-0.377***	-0.381***	-0.237***	-0.239***	-0.242***	-0.314***	-0.317***	-0.311**
	0.000	0.000	0.000	0.006	0.011	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GA* List age	0.0009*			-0.001			-0.0006			0.0008			0.0011		
	0.0888			0.4298			0.5501			0.4017			0.3437		
GA* Leverage		0.0289**			-0.0183			-0.0122			0.0517**			0.057**	
		0.0424			0.6600			0.6982			0.0463			0.0214	
GA* Size			0.022***			0.097***			0.065***			0.016*			-0.012
			0.000			0.000			0.000			0.060			0.157
Constant	-0.198***	-0.205***	-0.148***	0.128*	0.139**	0.352***	-0.175***	-0.166***	0.003	-0.421***	-0.422***	-0.384***	-0.426***	-0.430***	-0.493**
	0.0000	0.0000	0.0000	0.0760	0.0477	0.0000	0.0019	0.0017	0.956	0.0000	0.0000	0.0000	0.0000	0.0000	0.000
Obs.	4901	4901	4901	935	935	935	1178	1178	1178	1477	1477	1477	1311	1311	1311
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-square	0.188	0.188	0.191	0.242	0.242	0.272	0.294	0.294	0.315	0.210	0.211	0.211	0.199	0.202	0.199
F-stats	57.7***	57.7***	58.8***	16.7***	16.7***	19.3***	25.6***	25.5***	28.0***	20.6***	20.8***	20.8***	17.2***	17.5***	17.3***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.28: Interaction Analyses when Dep. Variable is Excess Value-Sales-RE-GLS

Variable	(1) Overall 1993-12				(2)1993-97			(3)1998-02			(4)2003-07			(5)2008-12	
Group affiliation dummy	-0.075***	-0.0898***	-0.1856***	-0.0609*	-0.0314	-0.8531***	-0.1053***	-0.1031***	-0.5489***	-0.0659	-0.1601***	-0.1268	-0.0739	-0.0565*	-0.229
	0.001	0.0000	0.0001	0.1012	0.4678	0.0000	0.0031	0.0016	0.0000	0.1098	0.0000	0.1353	0.1774	0.0823	0.019
Listage	-0.002***	-0.0023***	-0.0024***	-0.0020	-0.0038***	-0.005***	-0.0013	-0.0017**	-0.0023***	-0.0006	-0.0005	-0.0006	0.0034**	0.0032***	0.003
	0.001	0.0000	0.0000	0.1742	0.0003	0.0000	0.2754	0.0397	0.0053	0.6439	0.5532	0.471	0.0168	0.0006	0.000
Leverage	0.168***	0.1643***	0.1686***	0.1596***	0.218***	0.1864***	0.2141***	0.2248***	0.2227***	0.1966***	0.1498***	0.1952***	0.1379***	0.1574***	0.138
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000
Size	0.042***	0.0419***	0.033***	0.0484***	0.0403***	-0.0183	0.0392***	0.0379***	-0.0026	0.0418***	0.0404***	0.037***	0.0365***	0.0359***	0.024**
	0.000	0.0000	0.0000	0.0001	0.0009	0.2587	0.0000	0.0000	0.8387	0.0000	0.0000	0.0000	0.0000	0.0000	0.022
Growth	-0.034***	-0.0349***	-0.0349***	-0.0558***	-0.0572***	-0.0571***	-0.0469***	-0.0463***	-0.0473***	-0.0429***	-0.044***	-0.0424***	-0.0477***	-0.0478***	-0.047**
	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000
Risk	0.013**	0.0135**	0.013*	0.0475***	0.0469***	0.0442***	0.0109	0.0111	0.0109	0.014	0.015	0.0138	0.0128	0.0124	0.012
	0.043	0.0432	0.0512	0.0017	0.0018	0.0031	0.3242	0.3159	0.3264	0.2101	0.1754	0.2148	0.2969	0.3118	0.326
Profit-ability	-0.253***	-0.253***	-0.252***	-0.305***	-0.28***	-0.278***	-0.312***	-0.312***	-0.313***	-0.239***	-0.230***	-0.239***	-0.193***	-0.189***	-0.192**
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GA* Listage	-0.000			-0.003			-0.0008			0.0001			-0.0004		
	0.599			0.114			0.6406			0.9725			0.8466		
GA* Leverage		0.0075			-0.0867**			-0.0197			0.1319***			-0.0332	
		0.6245			0.0392			0.5313			0.0000			0.2221	
GA* Size			0.0158**			0.1288***			0.071***			0.0094			0.020
			0.0196			0.0000			0.0000			0.4489			0.124
Constant	-0.345**	-0.334***	-0.288***	-0.045	-0.013	0.288**	-0.216**	-0.207***	0.009	-0.497***	-0.444***	-0.470***	-0.562***	-0.566***	-0.482***
	0.000	0.000	0.000	0.677	0.895	0.011	0.010	0.009	0.921	0.000	0.000	0.000	0.000	0.000	0.000
Obs.	4901	4901	4901	935	935	935	1178	1178	1178	1477	1477	1477	1311	1311	1311
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-square	0.139	0.139	0.140	0.186	0.188	0.209	0.243	0.243	0.256	0.166	0.175	0.166	0.136	0.137	0.137
F-stats	40.7***	40.7***	41.0***	12.2***	12.3***	14.0***	19.9***	19.9***	21.2***	15.7***	16.7***	15.7***	11.3***	11.4***	11.4
Chi-square	90.7***	88.6***	87.8***	63.3***	66.4***	63.4***	43.9***	44.2***	39.1***	35.3***	36.7***	39.4***	44.5***	52.1**	51.2

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

4.1.2.3 Robustness Check

Table 4.29 and 4.30 demonstrate the OLS regression results of group affiliation interaction analyses using excess value-EBIT. The results are highly consistent with OLS interaction results between group affiliation and firm age, size and growth when dependent variable was Excess value-sales. The statistics suggest that List age is negatively related to Excess value-EBIT whereas GA dummy*List age is significantly positive showing that firm exposure to stock exchange positively affects group firms' performance whereas it negatively affects standalone firms' performance. The coefficient of Leverage is positive and it is significantly positive for GA dummy*Leverage as well showing that strength of relationship of firm leverage is greater for group firm relative to standalone firms. Further, Size is negatively related whereas GA dummy*Size is positively related to Excess value-EBIT which suggest that impact of firm size is positive for group firms contrary to standalone firms where its impact is negative. The results of sub-periods samples are similar to whole period sample results. The results propose that group firms benefits from access to group's internal resources and capabilities like information, capital and loans and other inputs needed to accomplish business need and thus helpful in creating value for group firms consistent with resource sharing hypothesis.

Table 4.31 gives group affiliation interaction results for Excess value-EBIT using random effect Generalized Least Square regression. These results support OLS results explained above. Interaction between group affiliation and List age, Leverage and Size is positive showing that business groups create value through resource sharing networks among group firms in Pakistan. The findings support to internal markets and resource sharing hypothesis (Leff, 1978; Guillen, 2000; Khanna and Palepu, 2000b).

TABLE 4.29: Interaction Analyses when Dep. Variable is Excess Value-EBIT-OLS

Variable	(1)Overall 1993-12			(2)1993-97			(3)1998-02			(4)2003-07			(5)2008-12		
Group affiliation dummy	-0.062***	-0.054***	-0.083**	-0.017	-0.038	-0.009	-0.049*	-0.114***	-0.133	-0.073***	-0.042	-0.107	-0.142***	0.005	-0.162*
	0.000	0.000	0.022	0.478	0.344	0.925	0.050	0.001	0.107	0.005	0.112	0.110	0.000	0.84	0.055
Listage	-0.0007	0.0006**	0.0006*	-0.0009	0.0005	0.0004	-0.0013	-0.001	-0.001*	-0.0005*	0.0006	0.0005	-0.0023**	0.0012*	0.0012**
	0.119	0.034	0.059	0.402	0.507	0.5635	0.174	0.109	0.092	0.509	0.275	0.347	0.022	0.051	0.048
Leverage	0.149***	0.124***	0.150***	0.160***	0.114***	0.162***	0.136***	0.077**	0.142***	0.104***	0.099***	0.103***	0.194***	0.195***	0.196***
	0.000	0.000	0.000	0.000	0.009	0.000	0.000	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Size	-0.007***	-0.005**	-0.011***	-0.004	-0.000	-0.002	-0.012*	-0.009	-0.020**	-0.006	-0.005	-0.012*	-0.024***	-0.024***	-0.037***
	0.006	0.037	0.003	0.558	0.906	0.7953	0.056	0.145	0.038	0.172	0.239	0.098	0.000	0.000	0.000
Growth	0.003	0.003	0.0041	-0.019	-0.019	-0.018	0.0348**	0.0305**	0.0334**	-0.018	-0.018	-0.0167	0.0012	0.001	0.002
	0.6602	0.677	0.5894	0.3299	0.3197	0.3386	0.018	0.039	0.0235	0.1491	0.1668	0.2023	0.9371	0.9468	0.8872
Risk	-0.043***	-0.042***	-0.044***	-0.052**	-0.052**	-0.051**	-0.017	-0.013	-0.017	-0.037*	-0.040**	-0.040**	-0.080***	-0.078***	-0.082***
	0.000	0.000	0.0000	0.0116	0.012	0.0139	0.3072	0.4054	0.3034	0.053	0.0326	0.0336	0.0011	0.002	0.001
Profit-ability	-1.073***	-1.081***	-1.085***	-0.859***	-0.896***	-0.877***	-1.014**	-1.038**	-1.015**	-1.282**	-1.285***	-1.298**	-1.295**	-1.298**	-1.317**
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
GA* Listage	0.0023***			0.0023*			0.0007			0.0019*			0.0058***		
	0.0001			0.1005			0.5949			0.0729			0.0000		
GA* Leverage		0.0521***			0.0707			0.1107**			0.0135			0.0012	
		0.0057			0.1838			0.0162			0.6845			0.9715	
GA* Size			0.0097*			0.0032			0.0154			0.011			0.0226**
			0.0704			0.8442			0.2465			0.2579			0.0428
Constant	0.0852***	0.0685***	0.0887***	0.0413	0.0368	0.0146	0.1053**	0.1242***	0.1456**	0.1282***	0.1047***	0.1436***	0.2594***	0.1741***	0.2708***
	0.0001	0.0009	0.0013	0.4640	0.5195	0.8311	0.029	0.0068	0.0191	0.0015	0.0062	0.0061	0.0000	0.0005	0.0001
Obs.	3463	3463	3463	682	682	682	876	876	876	1010	1010	1010	895	895	895
Sector dummy	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Adj. R-square	0.238	0.236	0.235	0.200	0.199	0.1971	0.231	0.236	0.232	0.263	0.260	0.261	0.299	0.282	0.286
F-stats	136***	135***	134***	22***	22***	21***	33***	34***	34***	46***	45***	45***	48***	45***	45***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.30: Interaction Analyses when Dep. Variable is Excess Value-EBIT-OLS (Continued)

Variable	(1)Overall 1993-12			(2)1993-97			(3)1998-02			(4)2003-07			(5)2008-12		
Group affiliation dummy	-0.063**	-0.047**	-0.076**	-0.023	-0.023	-0.027	-0.058**	-0.116**	-0.103	-0.077**	-0.023	-0.083	-0.136**	0.007	-0.239**
	0.000	0.001	0.036	0.356	0.580	0.789	0.024	0.000	0.213	0.003	0.357	0.197	0.000	0.783	0.003
Listage	-0.0007	0.0005*	0.0004	-0.0004	0.0008	0.0007	-0.0009	-0.0005	-0.0006	-0.0011	0.0003	0.0002	-0.0023**	0.0006	0.0006
	0.111	0.0979	0.1533	0.6929	0.2574	0.3219	0.3119	0.3817	0.3597	0.1777	0.5896	0.6636	0.0162	0.3438	0.3364
Leverage	0.154***	0.137***	0.155***	0.162***	0.138***	0.164***	0.138***	0.082**	0.142***	0.11***	0.119***	0.1173***	0.209***	0.223***	0.213***
	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Size	-0.001	0.000	-0.004	0.000	0.004	0.001	-0.006	-0.002	-0.010	-0.005	-0.003	-0.008	-0.013**	-0.0123**	-0.030***
	0.659	0.87	0.300	0.997	0.629	0.906	0.360	0.664	0.287	0.296	0.430	0.233	0.023	0.032	0.000
Growth	0.004	0.004	0.004	-0.024	-0.024	-0.024	0.035**	0.031**	0.034**	-0.019	-0.018	-0.018	-0.000	-0.001	-0.000
	0.554	0.572	0.513	0.209	0.209	0.209	0.014	0.032	0.016	0.123	0.140	0.153	0.967	0.917	0.989
Risk	-0.043***	-0.043***	-0.044***	-0.0739***	-0.073***	-0.073***	-0.0156	-0.012	-0.0159	-0.040**	-0.045**	-0.045**	-0.069***	-0.0709***	-0.074***
	0.000	0.000	0.000	0.0004	0.0005	0.000	0.342	0.447	0.334	0.026	0.014	0.014	0.003	0.003	0.001
Profit-ability	-1.085**	-1.093**	-1.097**	-0.769**	-0.797**	-0.787**	-1.078**	-1.099**	-1.081**	-1.391**	-1.4043***	-1.408**	-1.378**	-1.392**	-1.415**
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
GA* Listage	0.0021***			0.0021			0.0008			0.0025**			0.0049***		
	0.0003			0.1345			0.5127			0.0228			0.0001		
GA* Leverage		0.0356*			0.0367			0.1048**			-0.0042			-0.0213	
		0.0584			0.5032			0.0214			0.8974			0.497	
GA* Size			0.008			0.005			0.0095			0.0084			0.0309***
			0.1343			0.7702			0.4732			0.3671			0.0037
Constant	0.067**	0.039	0.054	0.021	-0.004	-0.008	0.212**	0.220***	0.223**	0.066	0.019	0.049	0.185***	0.081	0.211***
	0.040	0.214	0.125	0.779	0.950	0.919	0.013	0.007	0.013	0.275	0.739	0.451	0.006	0.206	0.005
Obs.	3463	3463	3463	682	682	682	876	876	876	1010	1010	1010	895	895	895
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-square	0.264	0.262	0.262	0.232	0.230	0.230	0.273	0.278	0.274	0.337	0.334	0.334	0.381	0.371	0.376
F-stats	63.1***	62.5***	62.4***	11.8***	11.7***	11.7***	17.5***	17.8***	17.5***	26.6***	26.3***	26.3***	28.6***	27.3***	28.0***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.31: Interaction Analyses when Dep. Variable is Excess Value-EBIT-RE-GLS

Variable	(1)Overall 1993-12			(2)1993-97			(3)1998-02			(4)2003-07			(5)2008-12		
Group affiliation dummy	-0.0533***	-0.049***	-0.068	-0.004	-0.039	-0.074	-0.058*	-0.103**	-0.169	-0.083**	-0.040	-0.059	-0.143***	0.020	-0.232**
	0.007	0.009	0.141	0.902	0.427	0.577	0.084	0.011	0.106	0.013	0.184	0.449	0.000	0.497	0.011
Listage	-0.0002	0.0006	0.0005	0.0001	0.0009	0.0007	-0.0012	-0.0008	-0.001	-0.0014	0.0000	-0.0001	-0.0027**	0.0004	0.0004
	0.7596	0.1703	0.2255	0.9524	0.3384	0.4681	0.2992	0.2911	0.2177	0.1575	0.9534	0.9092	0.0181	0.5775	0.5803
Leverage	0.1538***	0.137***	0.154***	0.157***	0.105**	0.160***	0.124***	0.079**	0.128***	0.104***	0.097***	0.102***	0.2035***	0.226***	0.207***
	0.000	0.000	0.000	0.000	0.039	0.000	0.000	0.0360	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Size	0.008**	0.009**	0.005	0.008	0.0124	0.003	-0.004	-0.002	-0.015	0.000	0.002	-0.000	-0.013**	-0.011*	-0.029***
	0.026	0.010	0.264	0.449	0.277	0.803	0.575	0.769	0.222	0.896	0.667	0.995	0.044	0.074	0.002
Growth	-0.0057	-0.0062	-0.0056	-0.0252	-0.0255	-0.0259	0.0153	0.0131	0.0145	-0.0278**	-0.0281**	-0.0272**	-0.0067	-0.0084	-0.0071
	0.4232	0.3815	0.4294	0.1335	0.1285	0.1236	0.2521	0.3309	0.2794	0.0183	0.0169	0.0213	0.6279	0.5446	0.6113
Risk	-0.04***	-0.039***	-0.040***	-0.062***	-0.062***	-0.0617***	-0.011	-0.009	-0.010	-0.041**	-0.043**	-0.043**	-0.067***	-0.070***	-0.073***
	0.000	0.000	0.000	0.004	0.004	0.005	0.517	0.578	0.527	0.021	0.014	0.014	0.004	0.003	0.001
Profit-ability	-1.03***	-1.032***	-1.032***	-0.888***	-0.922***	-0.896***	-1.074***	-1.086***	-1.077***	-1.279***	-1.283***	-1.288***	-1.383***	-1.394***	-1.412***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GA* Listage	0.0014*			0.0014			0.0007			0.0025*			0.0053***		
	0.0899			0.4670			0.6479			0.0655			0.0004		
GA* Leverage		0.0320			0.0721			0.0812*			0.0145			-0.0369	
		0.1183			0.2314			0.1022			0.6786			0.2722	
GA* Size			0.0063			0.0147			0.0200			0.0044			0.0305**
			0.3539			0.5103			0.2320			0.6972			0.0118
Constant	-0.009	-0.023	-0.014	-0.045	-0.0423	-0.038	0.232**	0.240**	0.280***	0.088	0.044	0.055	0.193**	0.072	0.207**
	0.830	0.574	0.750	0.650	0.666	0.721	0.020	0.012	0.009	0.225	0.520	0.479	0.013	0.335	0.017
Obs.	3463	3463	3463	682	682	682	876	876	876	1010	1010	1010	895	895	895
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-square	0.215	0.214	0.214	0.198	0.199	0.198	0.232	0.234	0.233	0.264	0.260	0.261	0.345	0.333	0.339
F-stats	48.42***	48.28***	48.21***	9.87***	9.92***	9.86***	14.22***	14.40***	14.30***	19.13***	18.78***	18.86***	24.56***	23.37***	23.92***
Chi-square	47.77***	48.39***	45.66***	61.52***	60.39***	58.67***	27.11***	29.06***	25.69***	25.88***	35.70***	26.40***	11.87***	10.46***	10.67***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

4.1.3 Business Groups and Excess Profitability

Firstly, OLS regression results are discussed. Panel A and D demonstrate the regression results of Group affiliation dummy, Panel B and E gives the results of Group diversification and finally Panel C and F presents the results of group diversification dummies. Similarly, Panel A, B and C show the regression results when dependent variable is Excess profitability (operating) and Panel D, E and F present the results when dependent variable is Excess profitability (net). Model 1 and 2 show the results of the whole period sample 1993-2012 and model 3 and 4, 5 and 6, 7 and 8 and 9 and 10 present the results of subsamples of 1993-97, 1998-02, 2003-07 and 2008-12 periods respectively.

Panel A in Table 4.32 presents the results of group affiliation and Excess profitability (operating). The Group affiliation dummy is consistently positive in all of the models. Model 1 shows that coefficient is 0.0236 ($p<0.001$) in the whole period. Model 3 shows that coefficient is 0.0369 ($p<0.001$) in 1993-97 period which continuously decreases in the next sub-periods. The coefficients are 0.0313 ($p<0.001$) and 0.0215 ($p<0.01$) respectively in 1998-02 and 2003-07 periods and finally it drops to 0.0087 ($p>0.10$) in the final sub-period of 2008-12. The results are unchanged even when industry dummies are included. Group firms enjoy about 2.41% Excess profitability (operating) during the whole period 1993-2012 as shown by the coefficient value of 0.0241 ($p<0.001$) in model 2. Model 4, 6 and 8 indicate that Excess profitability (operating) is 3.84% ($p<0.001$) during the 1993-97 period which started to decrease to 3.19% ($p<0.001$) during 1998-02 period and the corresponding figure is 1.77% ($p<0.10$) during 2003-07 period. Finally, group firms yield no significantly higher profitability in the last sub-period of 2008-12 as shown by the insignificant coefficient value of 0.93% ($p>0.10$) in model 10.

The results clearly propose that group firms enjoy superior profitability than standalone firms in Pakistan. The findings are consistent with market failure theory (Leff, 1978). In developing countries where market institutions those support business transactions are not well developed, business groups provide internal markets and share resources among their affiliates (Barney, 1991; Chang and Hong, 2000; Khanna and Rivkin, 2001).

TABLE 4.32: Panel A: Group Affiliation and Excess Profitability (Operating)-OLS

Variable	(1) Overall 1993-12		(2) 1993-97		(3) 1998-02		(4) 2003-07		(5) 2008-12	
Group affiliation dummy	0.0236***	0.0241***	0.0369***	0.0384***	0.0313***	0.0319***	0.0215***	0.0177**	0.0087	0.0093
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0019	0.0109	0.2929	0.2734
Listage	0.0001	0.0001	0.0008***	0.0010***	0.0001	0.0001	0.0007**	0.0005*	-0.0004	-0.0003
	0.5342	0.6945	0.0037	0.0005	0.6104	0.6670	0.0114	0.0852	0.2377	0.3512
Leverage	-0.0410***	-0.0413***	-0.0655***	-0.0665***	-0.0439***	-0.0441***	-0.0333***	-0.0364***	-0.0366***	-0.038***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0284***	0.0278***	0.0348***	0.0337***	0.0247***	0.0238***	0.0216***	0.0209***	0.0359***	0.0380***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	0.0001	0.0000	0.0000
Risk	-0.0135***	-0.0134***	-0.0100	-0.0148**	-0.0282***	-0.0285***	0.0154**	0.0155**	-0.0390***	-0.038***
	0.0004	0.0004	0.1750	0.0450	0.0000	0.0000	0.0238	0.0216	0.0000	0.0000
Constant	0.0329***	0.0427***	0.0405***	0.0258	0.0373***	0.0191	0.0110	0.0910***	0.0450***	0.0224
	0.0000	0.0000	0.0000	0.1164	0.0000	0.2567	0.2212	0.0000	0.0001	0.2722
Observation	5689	5689	1072	1072	1393	1393	1676	1676	1548	1548
Sectors dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.0638	0.0661	0.1430	0.1688	0.0893	0.0879	0.0439	0.0748	0.0639	0.0655
F-statistics	78.5197***	24.6668***	36.7401***	14.5939***	28.2878***	8.8908***	16.3682***	8.9708***	22.1249***	7.3778***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

Panel B in Table 4.33 demonstrates the impact of Group diversification on Excess profitability (operating). The results indicate that Group diversification is significantly positively related to Excess profitability (operating). Model 1 shows the coefficient of 0.0019 ($p<0.001$) in the whole period sample. Model 3, 5, 7 and 9 report the coefficients of 0.0025 ($p<0.001$), 0.0014 ($p<0.05$), 0.0019 ($p<0.001$) and 0.0015 ($p<0.05$) respectively for the subsamples of 1993-97, 1998-02, 2003-07 and 2008-12. The statistics clearly confirm that Group diversification positively affects excess profitability and however, there is a gradual declining trend in the strength of relationship e.g., the coefficient of 0.0025 in 1993-97 falls to 0.0015 in 2008-12 period. Model 2, 4, 6, 8 and 10 report that results are similar and are significant at various levels of significance when industry dummies are included in the models. The findings support market failure theory (Leff, 1978) and resource sharing argument (Chang and Choi, 1988; Guillen, 2000) which suggest that diversified business groups develop capabilities and skills those are beneficial in getting various resources and market access to repeatedly entering new industries. The decrease in accounting profitability is consistent because the privileges associated with affiliation to diversified business groups evolve differently as markets gets mature (George and Kabir, 2008). The financial reforms in early 1990s put Pakistani market on the track of development and transitions and with the development of financial and other institutions, the advantageous effect of group affiliation may disappear (Lee et al., 2008; Khanna and Palepu, 2000a).

TABLE 4.33: Panel B: Group Diversification and Excess Profitability (Operating)-OLS

Variable	(1) Overall 1993-12		(2) 1993-97		(3) 1998-02		(4) 2003-07		(5) 2008-12	
Group diversification	0.0019***	0.0020***	0.0025***	0.0025***	0.0014**	0.0013**	0.0019***	0.0020***	0.0015**	0.0017**
	0.0000	0.0000	0.0000	0.0000	0.0121	0.0228	0.0007	0.0005	0.0248	0.0119
Listage	0.0001	0.0001	0.0008***	0.0010***	0.0002	0.0002	0.0007**	0.0005	-0.0004	-0.0004
	0.5691	0.6946	0.0062	0.0007	0.5630	0.5510	0.0131	0.1091	0.1790	0.2538
Leverage	-0.0416***	-0.0421***	-0.0652***	-0.0667***	-0.0456***	-0.046***	-0.0343***	-0.037***	-0.0362***	-0.0373***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0284***	0.0280***	0.0342***	0.0336***	0.0242***	0.0234***	0.0216***	0.0211***	0.0362***	0.0383***
	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	0.0001	0.0001	0.0000	0.0000
Risk	-0.0137***	-0.0136***	-0.0106	-0.0155**	-0.0293***	-0.029***	0.0158**	0.0159**	-0.0385***	-0.0371***
	0.0003	0.0003	0.1533	0.0373	0.0000	0.0000	0.0207	0.0181	0.0000	0.0001
Constant	0.0371***	0.0517***	0.0486***	0.0455***	0.0488***	0.0393**	0.0139*	0.0943***	0.0428***	0.0211
	0.0000	0.0000	0.0000	0.0039	0.0000	0.0150	0.1013	0.0000	0.0001	0.2864
Observation	5689	5689	1072	1072	1393	1393	1676	1676	1548	1548
Sectors dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.0632	0.0660	0.1354	0.1596	0.0796	0.0776	0.0449	0.0781	0.0663	0.0686
F-statistics	77.7296***	24.6456***	34.5508***	13.7144***	25.0699***	7.8897***	16.7487***	9.3417***	22.9688***	7.7043***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

Panel C in Table 4.34 presents the results of least, intermediated and most diversified dummies when dependent variable is Excess profitability (operating). The positive signs of coefficients of all of the three diversification dummies prove that firms affiliated with least, intermediate and most diversified business groups perform better than corresponding standalone firms in Pakistan in terms of accounting profitability. The results are significant in the whole period and sub-periods for the Most diversified dummy and however these are insignificant in last two sub-periods for Least diversified dummy and Intermediate diversified dummy. These results are consistent with the studies of Khanna and Palepu (2000b,a). Large diversified business group may strive to such capabilities like those are normally not available to non-diversified firms like improved debt capacity, economies of scale, reciprocal buying and selling Kim et al. (2004b); George and Kabir (2008).

TABLE 4.34: Panel C: Group Diversification Dummies and Excess Profitability (Operating)-OLS

Variable	(1) Overall 1993-12		(2) 1993-97		(3) 1998-02		(4) 2003-07		(5) 2008-12	
Least diversified	0.0204***	0.0207***	0.0350***	0.0383***	0.0359***	0.0381***	0.0132	0.0085	0.0068	0.0058
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1166	0.3139	0.4929	0.5620
Intermediate diversified	0.0201***	0.0178***	0.0394***	0.0354***	0.0305***	0.0297***	0.0223**	0.0151	-0.0096	-0.0133
	0.0001	0.0008	0.0000	0.0003	0.0011	0.0024	0.0197	0.1236	0.4005	0.2661
Most diversified	0.0341***	0.0378***	0.0367***	0.0419***	0.0245**	0.0239**	0.0358***	0.0378***	0.0359***	0.0429***
	0.0000	0.0000	0.0003	0.0001	0.0170	0.0232	0.0006	0.0004	0.0038	0.0008
Listage	0.0001	0.0000	0.0008***	0.0010***	0.0002	0.0001	0.0007**	0.0004	-0.0004	-0.0004
	0.6432	0.7868	0.0040	0.0006	0.5565	0.6087	0.0162	0.1119	0.1675	0.2632
Leverage	-0.041***	-0.042***	-0.065***	-0.0667***	-0.044***	-0.0438***	-0.0337***	-0.0372***	-0.0365***	-0.038***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0283***	0.0278***	0.0348***	0.0337***	0.0249***	0.0241***	0.0217***	0.0211***	0.0354***	0.0379***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	0.0001	0.0000	0.0000
Risk	-0.013***	-0.013***	-0.0100	-0.0149**	-0.028***	-0.0285***	0.0156**	0.0156**	-0.0384***	-0.037***
	0.0004	0.0004	0.1751	0.0445	0.0000	0.0000	0.0220	0.0207	0.0000	0.0001
Constant	0.0333***	0.0450***	0.0404***	0.0265	0.0369***	0.0166	0.0119	0.0946***	0.0464***	0.0271
	0.0000	0.0000	0.0000	0.1090	0.0000	0.3262	0.1838	0.0000	0.0001	0.1847
Observation	5689	5689	1072	1072	1393	1393	1676	1676	1548	1548
Sector dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.0645	0.0674	0.1415	0.1675	0.0887	0.0877	0.0451	0.0775	0.0690	0.0729
F-statistics	57.031***	22.653***	26.224***	12.9673***	20.344***	8.0403***	12.2934***	8.4097***	17.3819***	7.3987***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

Panel data analyses are also done using random-effect Generalized Least square as shown in 4.35, 4.36 and 4.37. Panel A in Table 4.35 presents the Group affiliation dummy results when dependent variable is Excess profitability (operating). The statistics show that group affiliated firms yield 2.64% (p<0.001) higher excess profitability than standalone independent firms during the whole sample period. The corresponding figures are 4.05% (p<0.001), 3.27% (p<0.001), 1.68% (p<0.10) and 1.02% (p>0.10) respectively in the consecutive subsamples. The statistics reveal an Excess profitability (operating) of 4.05% during 1993-97 period falls to 1.02% during 2008-12 period and however, the latter figure is not significant. The statistics confirm OLS regression results.

TABLE 4.35: Panel A: Group Affiliation and Excess Profitability (Operating)-RE-GLS

Variable	(1) Overall 1993-12	(2) 1993-97	(3) 1998-02	(4) 2003-07	(5) 2008-12
Group affiliation dummy	0.0264***	0.0405***	0.0327***	0.0168*	0.0102
	0.0004	0.0001	0.0010	0.0885	0.4128
Listage	-0.0006***	0.0009**	0.0001	0.0004	-0.0005
	0.0097	0.0368	0.7971	0.3159	0.2700
Leverage	-0.0359***	-0.0498***	-0.0403***	-0.0460***	-0.0487***
	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0270***	0.0284***	0.0215***	0.0252***	0.0332***
	0.0000	0.0000	0.0001	0.0000	0.0000
Risk	-0.0033	-0.0148**	-0.0131**	0.0212***	-0.0205**
	0.3706	0.0469	0.0472	0.0022	0.0204
Constant	0.0519***	0.0205	0.0199	0.0973***	0.0344
	0.0030	0.4015	0.4035	0.0000	0.2559
Observation	5689	1072	1393	1676	1548
Sector dummy	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.0390	0.0807	0.0423	0.0578	0.0472
F-statistics	7.4119***	6.8731***	4.6138***	7.0432***	5.5058***
Chi-square	40.5073***	19.7835***	25.7977***	22.2766***	8.5891***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

Panel B in Table 4.36 reports the results of Group diversification and Excess profitability (operating). The figures confirm the results of OLS. Group diversification

is consistently positively related to excess profitability (operating).

TABLE 4.36: Panel B: Group Diversification and Excess Profitability (Operating)-RE-GLS

Variable	(1) Overall 1993-12	(2) 1993-97	(3) 1998-02	(4) 2003-07	(5) 2008-12
Group diversification	0.0023***	0.0028***	0.0015*	0.0020**	0.0019*
	0.0003	0.0020	0.0654	0.0130	0.0641
Listage	-0.0006***	0.0009**	0.0001	0.0004	-0.0006
	0.0100	0.0435	0.7187	0.3638	0.2117
Leverage	-0.0363***	-0.0495***	-0.0418***	-0.0466***	-0.0484***
	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0271***	0.0282***	0.0213***	0.0253***	0.0333***
	0.0000	0.0000	0.0001	0.0000	0.0000
Risk	-0.0034	-0.0151**	-0.0134**	0.0214***	-0.0202**
	0.3592	0.0432	0.0425	0.0020	0.0218
Constant	0.0598***	0.0404*	0.0379*	0.0997***	0.0329
	0.0004	0.0854	0.1008	0.0000	0.2610
Observation	5689	1072	1393	1676	1548
Sector dummy	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.0391	0.0753	0.0368	0.0597	0.0489
F-statistics	7.4251***	6.4478***	4.1305***	7.2565***	5.6822***
Chi-square	41.2423***	19.4883***	27.3691***	21.3405***	8.4446***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

In the same way, least diversified, intermediate diversified and most diversified group affiliated firms tend to outperform their corresponding standalone independent firms as shown in Panel C of 4.37. One noticeable fact is that most diversified group firms show superior profitability relative to standalone firms thoroughly in the whole period and sub-period samples. The results of control variables are similar to above discussed OLS results.

The control variables include firm list age, leverage, growth and risk. The coefficient signs of List age variable are mixed. It is significantly positively related to excess profitability (operating) in some models whereas the relationship is significantly negative in few models as well. Leverage is consistently negatively related

to Excess profitability (operating) in the whole period sample and sub-period samples. The results are highly significant. Firm Growth shows consistently positive relationship with Excess profitability (operating) in the whole sample and sub-samples. The impact of Risk variable is significantly negative in the whole period sample and sub-period samples except in 2003-07 sub-period sample when it affects significantly positively the excess profitability (operating).

TABLE 4.37: Panel C: Group Diversification Dummies and Excess Profitability (Operating)-RE-GLS

Variable	(1) Overall 1993-12	(2) 1993-97	(3) 1998-02	(4) 2003-07	(5) 2008-12
Least diversified	0.0204**	0.0386***	0.0374***	0.0069	0.0064
	0.0264	0.0037	0.0025	0.5669	0.6682
Intermediated diversified	0.0226**	0.0398***	0.0312**	0.0148	-0.0131
	0.0361	0.0073	0.0279	0.2894	0.4577
Most diversified	0.0415***	0.0446***	0.0261*	0.0375**	0.0462**
	0.0003	0.0054	0.0826	0.0125	0.0153
Listage	-0.0006***	0.0009**	0.0001	0.0004	-0.0006
	0.0085	0.0406	0.7657	0.3645	0.2219
Leverage	-0.0360***	-0.0497***	-0.0402***	-0.0466***	-0.0487***
	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0271***	0.0283***	0.0216***	0.0254***	0.0332***
	0.0000	0.0000	0.0001	0.0000	0.0000
Risk	-0.0033	-0.0148**	-0.0131**	0.0211***	-0.0203**
	0.3694	0.0470	0.0483	0.0023	0.0214
Constant	0.0541***	0.0214	0.0183	0.1010***	0.0389
	0.0020	0.3855	0.4447	0.0000	0.1971
Observation	5689	1072	1393	1676	1548
Sector dummy	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.0358	0.0786	0.0411	0.0588	0.0504
F-statistics	12.1278***	6.0725***	4.1406***	6.5036***	5.3221***
Chi-square	40.1897***	19.8340***	25.6980***	21.5332***	8.2992***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

4.1.3.1 Robustness Check

Tables 4.38, 4.39 and 4.40 demonstrate the OLS regression results when dependent variable is Excess profitability (net). Panel D in Table 4.38 reports the results showing the impact of Group affiliation dummy on Excess profitability (net). Similar to the above results, group firms yield 1.75% Excess profitability (net) than standalone firms as shown by coefficient of 0.0175 ($p<0.001$) in model 1. In the same lines as reported above, the Excess profitability (net) is 3.66% ($p<0.001$) in 1993-97 period and it started to decrease and the corresponding figures are 2.42% ($p<0.001$) and 1.36% ($p<0.10$) in consecutive two sub-periods of 1998-02 and 2003-07. The coefficient value of 0.15 ($p>0.10$) suggest that group firms lose their advantageous profitability position over standalone firms during the 2008-12 period. Model 2, 4, 6, 8 and 10 present the results of regression models after including industry dummies. The coefficient value of Group affiliation dummy is 0.0167 ($p<0.001$) as shown in model 2. The respective values are 0.0354 ($p<0.001$), 0.0235 ($p<0.001$), 0.0091 ($p>0.10$) and 0.0005 ($p>0.10$) in consecutive 4 sub-periods. These results confirm that group firms are enjoying higher excess profitability in the post financial reforms and liberalization era. However, they continuously decline in profitability and finally they do not show significantly superior profitability during 2008-12 periods. The findings again support to market failure and resources sharing argument (Leff, 1978; Guillen, 2000).

Panel E in Table 4.39 presents the results of Group diversification when dependent variable is Excess profitability (net). Like the above regression results, Group diversification is again positively related to Excess profitability (net) in the whole period sample and subsamples. The results are significant in all of the models at different levels. The results confirm that group diversification enhances firm profitability consistent with internal markets argument (Khanna and Palepu, 2000b).

TABLE 4.38: Panel D: Group Affiliation and Excess Profitability (Net)-OLS

Variable	(1) Overall 1993-12		(2) 1993-97		(3) 1998-02		(4) 2003-07		(5) 2008-12	
Group affiliation dummy	0.0175***	0.0167***	0.0366***	0.0354***	0.0242***	0.0235***	0.0136*	0.0091	0.0015	0.0005
	0.0000	0.0000	0.0000	0.0000	0.0003	0.0006	0.0513	0.1963	0.8496	0.9524
Listage	-0.0001	0.0000	0.0009***	0.0012***	-0.0003	-0.0002	0.0004	0.0004	-0.0005	-0.0003
	0.6864	0.9754	0.0015	0.0001	0.1881	0.4609	0.1071	0.2037	0.1419	0.4196
Leverage	-0.0517***	-0.0516***	-0.0902***	-0.0928***	-0.0701***	-0.0701***	-0.0370***	-0.039***	-0.0401***	-0.0406***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0268***	0.0265***	0.0341***	0.0343***	0.0280***	0.0270***	0.0148***	0.0155***	0.0369***	0.0369***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0080	0.0052	0.0000	0.0000
Risk	-0.0263***	-0.0254***	-0.0237***	-0.0258***	-0.0342***	-0.0330***	-0.0051	-0.0045	-0.0466***	-0.0460***
	0.0000	0.0000	0.0021	0.0009	0.0000	0.0000	0.4578	0.5099	0.0000	0.0000
Constant	0.0394***	0.0580***	0.0486***	0.0445***	0.0574***	0.0627***	0.0200**	0.0995***	0.0451***	0.0269
	0.0000	0.0000	0.0000	0.0097	0.0000	0.0001	0.0277	0.0000	0.0001	0.1728
Observation	5689	5689	1072	1072	1393	1393	1676	1676	1548	1548
Sector dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.0885	0.0910	0.1996	0.2115	0.1585	0.1612	0.0384	0.0665	0.0804	0.0818
F-statistics	111.5026***	34.4837***	54.4194***	18.9600***	53.4381***	16.7377***	14.3616***	8.0231***	28.0635***	9.1115***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.39: Panel E: Group Diversification and Excess Profitability (Net)-OLS

Variable	(1) Overall 1993-12		(2) 1993-97		(3) 1998-02		(4) 2003-07		(5) 2008-12	
Group diversification	0.0014***	0.0015***	0.0018***	0.0017***	0.0011**	0.0010*	0.0014**	0.0013**	0.0013**	0.0014**
	0.0000	0.0000	0.0023	0.0044	0.0443	0.0726	0.0170	0.0276	0.0474	0.0443
Listage	-0.0001	0.0000	0.0009***	0.0012***	-0.0003	-0.0002	0.0004	0.0003	-0.0005*	-0.0004
	0.6454	0.9976	0.0015	0.0001	0.2119	0.5405	0.1217	0.2492	0.0871	0.2690
Leverage	-0.0521***	-0.0521***	-0.0906***	-0.0934***	-0.0714***	-0.0717***	-0.0376***	-0.039***	-0.0394***	-0.040***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0268***	0.0266***	0.0334***	0.0341***	0.0276***	0.0268***	0.0148***	0.0167***	0.0369***	0.0368***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0080	0.0048	0.0000	0.0000
Risk	-0.0264***	-0.0256***	-0.0241***	-0.0263***	-0.0350***	-0.0338***	-0.0048	-0.0041	-0.0458***	-0.045***
	0.0000	0.0000	0.0018	0.0008	0.0000	0.0000	0.4895	0.5462	0.0000	0.0000
Constant	0.0423***	0.0639***	0.0603***	0.0652***	0.0663***	0.0774***	0.0212**	0.1000***	0.0402***	0.0212
	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0141	0.0000	0.0002	0.2663
Observation	5689	5689	1072	1072	1393	1393	1676	1676	1548	1548
Sector dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.0884	0.0913	0.1868	0.2000	0.1528	0.1559	0.0394	0.0683	0.0828	0.0843
F-statistics	111.3701***	34.6060***	50.2036***	17.7361***	51.2214***	16.1246***	14.7580***	8.2262***	28.9148***	9.3739***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

Panel F in Table 4.40 demonstrates the results of diversification dummies when dependent variable is Excess profitability (net). The signs of Most diversified dummy are consistently and significantly positive in all of the regression models. However, the positive coefficient signs turned to negative in the final sub-period of 2008-12 for Least diversified dummy and Intermediate diversified dummy. Clearly, the results confirm that firms affiliated with diversified business groups enjoy monopoly power and yield higher excess profitability relative to standalone firms in Pakistan.

Firm list age, leverage, growth and risk variables are included as control variables in the regression models. The coefficient signs of List age variable are mixed. It is significantly positively related to excess profitability in some models whereas the relationship is significantly negative in few models as well. Leverage is consistently negatively related to both measures of excess profitability in the whole sample and subsamples. The results are highly significant. Firm Growth shows consistently positive relationship with Excess (net) profitability in the whole sample and subsamples. The impact of Risk variable is significantly negative and however, it affects significantly positively the excess (operating) profitability in the 2003-07 subsample only.

TABLE 4.40: Panel F: Group Diversification Dummies and Excess Profitability (Net)-OLS

Variable	(1) Overall 1993-12		(2) 1993-97		(3) 1998-02		(4) 2003-07		(5) 2008-12	
Least diversified	0.0164***	0.0149***	0.0414***	0.0416***	0.0303***	0.0292***	0.0080	0.0026	-0.0012	-0.0038
	0.0003	0.0012	0.0000	0.0000	0.0003	0.0006	0.3510	0.7644	0.8980	0.6954
Intermediated diversified	0.0117**	0.0107**	0.0384***	0.0318***	0.0211**	0.0216**	0.0103	0.0053	-0.0177	-0.0203*
	0.0210	0.0430	0.0001	0.0019	0.0193	0.0229	0.2862	0.5981	0.1101	0.0781
Most diversified	0.0269***	0.0272***	0.0262**	0.0289***	0.0179*	0.0159	0.0284***	0.0259**	0.0315***	0.0338***
	0.0000	0.0000	0.0130	0.0076	0.0720	0.1195	0.0074	0.0162	0.0085	0.0063
Listage	-0.0001	0.0000	0.0010***	0.0012***	-0.0003	-0.0002	0.0004	0.0003	-0.0005*	-0.0003
	0.5879	0.9531	0.0010	0.0001	0.2212	0.5118	0.1358	0.2433	0.0893	0.3171
Leverage	-0.0518***	-0.0518***	-0.0904***	-0.0932***	-0.0700***	-0.0698***	-0.0374***	-0.039***	-0.0400***	-0.0408***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0267***	0.0266***	0.0342***	0.0343***	0.0282***	0.0274***	0.0149***	0.016***	0.0364***	0.0369***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0074	0.0046	0.0000	0.0000
Risk	-0.0262***	-0.0254***	-0.0238***	-0.0258***	-0.0342***	-0.0331***	-0.0049	-0.0044	-0.0459***	-0.0453***
	0.0000	0.0000	0.0020	0.0009	0.0000	0.0000	0.4832	0.5188	0.0000	0.0000
Constant	0.0398***	0.0597***	0.0483***	0.0423**	0.0569***	0.0604***	0.0209**	0.1025***	0.0466***	0.0315
	0.0000	0.0000	0.0000	0.0147	0.0000	0.0002	0.0218	0.0000	0.0000	0.1094
Observation	5689	5689	1072	1072	1393	1393	1676	1676	1548	1548
Sector dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.0892	0.0917	0.1995	0.2111	0.1582	0.1609	0.0392	0.0679	0.0871	0.0892
F-statistics	80.5546***	31.2258***	39.1335***	16.9211***	38.3805***	15.0516***	10.7683***	7.4180***	22.0799***	8.9733***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

Tables 4.41, 4.42 and 4.43 report the results of panel data analyses. The statistics show that group affiliated firms outperform standalone firms when dependent variable is Excess profitability (net) as shown in Panel D of Table 4.41. The statistics reveal excess profitability figures of 1.82% (p<0.01) in the whole sample and 3.69% (p<0.001), 2.49% (p<0.01), 0.77% (p>0.10) and 0.05% (p<0.10) respectively in the four consecutive subsamples. Noticeably, although group firm perform better than standalone firms; however, there is a gradual decline in Excess profitability (net) likewise Excess profitability (operating). The figures reveal that Excess profitability (net) falls from 1.82% 0.05% during the sub-period of 1993-97 to 2008-12.

TABLE 4.41: Panel D: Group Affiliation and Excess Profitability (Net)-RE-GLS

Variable	(1) Overall 1993-12	(2) 1993-97	(3) 1998-02	(4) 2003-07	(5) 2008-12
Group affiliation dummy	0.0182***	0.0369***	0.0249***	0.0077	0.0005
	0.0075	0.0008	0.0079	0.4030	0.9653
Listage	-0.0005**	0.0010**	-0.0001	0.0003	-0.0005
	0.0280	0.0243	0.6953	0.4348	0.2951
Leverage	-0.0521***	-0.0807***	-0.0624***	-0.0491***	-0.0571***
	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0259***	0.0271***	0.0247***	0.0190***	0.0330***
	0.0000	0.0000	0.0000	0.0003	0.0000
Risk	-0.0155***	-0.0263***	-0.0201***	0.0003	-0.0281***
	0.0000	0.0008	0.0019	0.9621	0.0011
Constant	0.0677***	0.0457*	0.0572**	0.1069***	0.0430
	0.0000	0.0708	0.0107	0.0000	0.1321
Observation	5689	1072	1393	1676	1548
Sector dummy	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.0618	0.1182	0.0900	0.0534	0.0660
F-statistics	11.4051***	9.9706***	9.1024***	6.5540***	7.4292***
Chi-square	41.1938***	16.7876***	45.8470***	52.8542***	19.2866***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

Table 4.42 presents the results showing the impact of Group diversification on Excess profitability (net). Group diversification is positively related to Excess

profitability (net) in throughout the regression models.

TABLE 4.42: Panel E: Group Diversification and Excess Profitability (Net)-RE-GLS

Variable	(1) Overall 1993-12	(2) 1993-97	(3) 1998-02	(4) 2003-07	(5) 2008-12
Group diversification	0.0017***	0.0020**	0.0012	0.0013*	0.0014
	0.0030	0.0359	0.1315	0.0936	0.1397
Listage	-0.0005**	0.0010**	-0.0001	0.0002	-0.0006
	0.0272	0.0246	0.7624	0.5005	0.2073
Leverage	-0.0524***	-0.0807***	-0.0636***	-0.0492***	-0.0565***
	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0259***	0.0269***	0.0246***	0.0191***	0.0330***
	0.0000	0.0000	0.0000	0.0003	0.0000
Risk	-0.0156***	-0.0265***	-0.0204***	0.0006	-0.0277***
	0.0000	0.0008	0.0016	0.9371	0.0012
Constant	0.0726***	0.0666***	0.0709***	0.1062***	0.0369
	0.0000	0.0064	0.0010	0.0000	0.1820
Observation	5689	1072	1393	1676	1548
Sector dummy	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.0620	0.1108	0.0865	0.0546	0.0673
F-statistics	11.4489***	9.3393***	8.7499***	6.6887***	7.5678***
Chi-square	41.2049***	16.5291***	47.6979***	52.1890***	19.1033***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

Table 4.43 shows the comparative performance of group firms diversified at various levels relative to standalone firms. The figures reveal that group firms diversified at least, intermediate and most diversified level enjoy Excess profitability (net) than their corresponding standalone firms in Pakistan. The relationships are unchanged even in sub-periods. However, there evolve an interesting trend in Excess profitability of least diversified and intermediate diversified group firms that they were earning Excess profitability (net) of 4.2% and 3.4% respectively above than standalone firms during the initial sub-period of 1993-97 which started to decline and finally turned to insignificantly negative coefficients of -0.40% and -2.12% respectively in the final sub-period of 2008-12.However, most diversified group firms were enjoying 3.14% Excess profitability (net) which they still yield at 3.58% above

than standalone firms even in the last sub-period of 2008-12. The findings suggest that most diversified group firms enjoy superior profitability throughout the sample periods whereas firms affiliated with least diversified and intermediate diversified business groups have lost their position. The findings are again consistent with Chang and Choi (1988) and Khanna and Palepu (2000b).

TABLE 4.43: Panel F: Group Diversification Dummies and Excess Profitability (Net)-RE-GLS

Variable	(1) Overall 1993-12	(2) 1993-97	(3) 1998-02	(4) 2003-07	(5) 2008-12
Least diversified	0.0143*	0.0420***	0.0298**	0.0007	-0.0040
	0.0883	0.0022	0.0102	0.9528	0.7746
Intermediated diversified	0.0139	0.0340**	0.0243*	0.0037	-0.0212
	0.1554	0.0268	0.0678	0.7744	0.2042
Most diversified	0.0304***	0.0314*	0.0169	0.0253*	0.0358**
	0.0034	0.0574	0.2304	0.0702	0.0460
Listage	-0.0005**	0.0010**	-0.0001	0.0003	-0.0005
	0.0249	0.0222	0.7348	0.4868	0.2412
Leverage	-0.0522***	-0.0808***	-0.0622***	-0.0497***	-0.0570***
	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0259***	0.0271***	0.0248***	0.0191***	0.0330***
	0.0000	0.0000	0.0000	0.0003	0.0000
Risk	-0.0155***	-0.0263***	-0.0200***	0.0003	-0.0279***
	0.0000	0.0008	0.0019	0.9627	0.0011
Constant	0.0695***	0.0439*	0.0553**	0.1099***	0.0474*
	0.0000	0.0859	0.0141	0.0000	0.0954
Observation	5689	1072	1393	1676	1548
Sector dummy	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.0574	0.1164	0.0889	0.0538	0.0693
F-statistics	19.2401***	8.8415***	8.1521***	6.0142***	7.0639***
Chi-square	40.7531***	16.9403***	45.6469***	51.9474***	19.0378***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

4.1.3.2 Group Affiliation Interaction Analyses

Tables 4.44 and 4.45 report the OLS results of group affiliation interactive analyses when dependent variable is Excess profitability (operating). The sign of interaction between GA dummy and List age is negative. It indicates that at the start of life cycle, firm enjoys higher profits and as the firm gets matured the growth and investment opportunities are restricted and therefore, profits potential also started to decrease consistent with the life cycle theory. The coefficients of interaction between group affiliation and Leverage are negative in the regression models except 1993-97 sub-period. The business groups are not only concerned with the profits maximization but they are also motivated in group stability. They transfer funds (loans) from one firm with surplus cash flows to another with shortage of funds and also large business groups have their own banks as well. As loans are available within business group, therefore, these group firms are not subject to strong monitoring of banks (who are concerned with the safeguard of their money as well as growth of their investment) as faced by standalone firms. Further, the ultimate controllers in business groups provide loans at non market rates and use these loans as a device of tunneling firm resources from firms where they have lower cash flow rights to other firms where they have higher cash flow rights. Therefore, the recipient firm may face excess burden of interest, therefore, leverage is not affecting positively the performance of group firms. The positive sign of interaction between group affiliation and Leverage is consistent with resource sharing argument and pecking order theory. Table 4.45 highlights the OLS regression results after the industry dummies are included in the regression models. These results are similar to the above presented results.

Further, the results of pool data analyses confirm the above OLS group affiliation interaction results. The resuls are reported in Table 4.46. The results using random effect-GLS remain unchanged.

TABLE 4.44: Interaction Analyses when Dep. Variable is Excess Profitability (Operating)-OLS

Variable	(1) Overall 1993-12		(2) 1993-97		(3) 1998-02		(4) 2003-07		(5) 2008-12	
Group affiliation dummy	0.0366***	0.0343***	0.0530***	0.0147	0.0179	0.0657***	0.0456***	0.0392***	-0.0022	0.0096
	0.0000	0.0000	0.0000	0.2422	0.1196	0.0000	0.0007	0.0004	0.9069	0.4455
Listage	0.0005**	0.0001	0.0015***	0.0008***	-0.0003	0.0001	0.0013***	0.0007**	-0.0006	-0.0004
	0.0279	0.5769	0.0002	0.0036	0.4907	0.6245	0.0012	0.0132	0.2145	0.2364
Leverage	-0.0412***	-0.0356***	-0.0656***	-0.0799***	-0.0438***	-0.0269***	-0.0333***	-0.0259***	-0.0364***	-0.0361***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0003	0.0000	0.0001	0.0000	0.0000
Growth	0.0285***	0.0283***	0.0343***	0.0346***	0.0247***	0.0255***	0.0220***	0.0213***	0.0358***	0.0359***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	0.0000	0.0000
Risk	-0.0137***	-0.0132***	-0.0096	-0.0114	-0.0281***	-0.0272***	0.0146**	0.0166**	-0.0390***	-0.0391***
	0.0003	0.0005	0.1950	0.1232	0.0000	0.0000	0.0325	0.0153	0.0000	0.0000
GA dummy*List age	-0.0007**		-0.0013**		0.0008		-0.0011**		0.0004	
	0.0173		0.0217		0.1491		0.0372		0.5246	
GA dummy*Leverage		-0.0134**		0.0285**		-0.0440***		-0.0226**		-0.0011
		0.0238		0.0357		0.0002		0.0426		0.9209
Constant	0.0262***	0.0282***	0.0330***	0.0524***	0.0438***	0.0224**	-0.0016	0.0044	0.0510***	0.0446***
	0.0000	0.0000	0.0002	0.0000	0.0000	0.0151	0.8799	0.6457	0.0007	0.0003
Observation	5689	5689	1072	1072	1393	1393	1676	1676	1548	1548
Sector dummy	No	No	No	No	No	No	No	No	No	No
Adj.R-square	0.0646	0.0645	0.1464	0.1457	0.0900	0.0976	0.0458	0.0456	0.0636	0.0633
F-statistics	66.4319***	66.3327***	31.6199***	31.4522***	23.9389***	26.0892***	14.3926***	14.3517***	18.4978***	18.4272***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.45: Interaction Analyses when Dep. Variable is Excess Profitability (Operating)-OLS (Continued)

Variable	(1) Overall 1993-12		(2) 1993-97		(3) 1998-02		(4) 2003-07		(5) 2008-12	
Group affiliation dummy	0.0360***	0.0354***	0.0528***	0.0161	0.0196*	0.0664***	0.0351**	0.0309***	-0.0018	0.0114
	0.0000	0.0000	0.0000	0.2023	0.0979	0.0000	0.0106	0.0061	0.9273	0.3807
Listage	0.0004*	0.0000	0.0016***	0.0010***	-0.0002	0.0001	0.0009**	0.0005*	-0.0006	-0.0003
	0.0671	0.7693	0.0001	0.0004	0.5476	0.7209	0.0244	0.0985	0.2817	0.3446
Leverage	-0.0414***	-0.0355***	-0.0664***	-0.0811***	-0.0441***	-0.0268***	-0.0365***	-0.0309***	-0.0375***	-0.0365***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000
Growth	0.0280***	0.0278***	0.0332***	0.0336***	0.0238***	0.0248***	0.0211***	0.0206***	0.0378***	0.0379***
	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	0.0001	0.0002	0.0000	0.0000
Risk	-0.0136***	-0.0132***	-0.0144*	-0.0160**	-0.0282***	-0.0277***	0.0148**	0.0163**	-0.0377***	-0.0379***
	0.0003	0.0005	0.0510	0.0307	0.0000	0.0000	0.0280	0.0160	0.0000	0.0000
GA dummy*List age	-0.0006**		-0.0011**		0.0007		-0.0008		0.0004	
	0.0338		0.0386		0.1991		0.1415		0.5380	
GA dummy*Leverage		-0.0141**		0.0286**		-0.0443***		-0.0167		-0.0025
		0.0190		0.0356		0.0003		0.1359		0.8280
Constant	0.0351***	0.0374***	0.0171	0.0382**	0.0267	0.0042	0.0801***	0.0852***	0.0296	0.0214
	0.0003	0.0001	0.3115	0.0285	0.1351	0.8067	0.0000	0.0000	0.2082	0.3071
Observation	5689	5689	1072	1072	1393	1393	1676	1676	1548	1548
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.0666	0.0668	0.1714	0.1715	0.0883	0.0961	0.0755	0.0755	0.0651	0.0649
F-statistics	23.5612***	23.6210***	14.0307***	14.0406***	8.4925***	9.2216***	8.5985***	8.6023***	6.9862***	6.9662***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.46: Interaction Analyses when Dep. Variable is Excess Profitability (Operating)-RE-GLS

Variable	(1) Overall 1993-12		(2) 1993-97		(3) 1998-02		(4) 2003-07		(5) 2008-12	
Group affiliation dummy	0.0342***	0.0179*	0.0499***	-0.0217	0.0114	0.0485***	0.0361*	0.0295*	-0.0040	-0.0227
	0.0031	0.0626	0.0008	0.1821	0.4961	0.0008	0.0614	0.0503	0.8913	0.1998
Listage	-0.0004	-0.0006**	0.0013**	0.0010**	-0.0005	0.0001	0.0009	0.0004	-0.0009	-0.0005
	0.2936	0.0120	0.0336	0.0236	0.3517	0.8394	0.1246	0.3347	0.2548	0.3365
Leverage	-0.0361***	-0.0406***	-0.0499***	-0.0898***	-0.0401***	-0.0321***	-0.0461***	-0.0408***	-0.0485***	-0.0670***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0003	0.0000	0.0000	0.0000	0.0000
Growth	0.0271***	0.0270***	0.0282***	0.0288***	0.0214***	0.0219***	0.0253***	0.0252***	0.0331***	0.0334***
	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000
Risk	-0.0034	-0.0035	-0.0147**	-0.0167**	-0.0128*	-0.0133**	0.0208***	0.0215***	-0.0204**	-0.0189**
	0.3584	0.3443	0.0487	0.0216	0.0530	0.0418	0.0027	0.0019	0.0208	0.0307
GA dummy*List age	-0.0004		-0.0007		0.0012		-0.0009		0.0005	
	0.3748		0.3689		0.1137		0.2437		0.5865	
GA dummy*Leverage		0.0102		0.0795***		-0.0199		-0.0162		0.0381***
		0.1657		0.0000		0.1394		0.2639		0.0088
Constant	0.0468**	0.0562***	0.0148	0.0534**	0.0331	0.0124	0.0852***	0.0918***	0.0436	0.0512*
	0.0111	0.0014	0.5561	0.0347	0.1904	0.6018	0.0008	0.0001	0.2090	0.0974
Observation	5689	5689	1072	1072	1393	1393	1676	1676	1548	1548
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.0389	0.0394	0.0805	0.0960	0.0431	0.0442	0.0580	0.0579	0.0467	0.0503
F-statistics	7.2180***	7.2980***	6.5143***	7.6871***	4.4850***	4.5720***	6.7279***	6.7222***	5.2107***	5.5541***
Chi-square	41.820***	62.796***	24.111***	66.002***	27.981***	65.599***	22.848***	22.1085***	8.6694***	38.8679***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

4.1.3.3 Robustness Check

Tables 4.47 and 4.48 present the results of group affiliation interactive analyses using OLS when dependent variable is Excess profitability (net). Both GA dummy*List age and GA dummy*Leverage are negatively signed indicating that firm's list age and leverage lowers group firms' performance and the negative performance impacts are greater than corresponding standalone firms. Table 4.48 reports the results when industry dummies are included in the regression models. The statistics suggest that group affiliation interactive results remain unchanged even after when industry dummies are included.

Table 4.49 gives the group affiliation interaction results using panel data analyses. The results show that GA dummy*List age is negatively related to Excess profitability (net) indicating that group firms' exposure to stock exchange does not enhance their profitability. Further, GA dummy*Leverage shows mixed results. It is positively related in few models whereas opposite is true in some of the regression models.

TABLE 4.47: Interaction Analyses when Dep. Variable is Excess Profitability (Net)-OLS

Variable	(1) Overall 1993-12		(2) 1993-97		(3) 1998-02		(4) 2003-07		(5) 2008-12	
Group affiliation dummy	0.0388***	0.0309***	0.0588***	0.0152	0.0259**	0.0588***	0.0416**	0.0314***	-0.0049	0.0069
	0.0000	0.0000	0.0000	0.2446	0.0208	0.0000	0.0024	0.0054	0.7885	0.5691
Listage	0.0006***	-0.0001	0.0018***	0.0009***	-0.0003	-0.0004	0.0012***	0.0004	-0.0006	-0.0005
	0.0072	0.6283	0.0000	0.0015	0.4356	0.1784	0.0044	0.1190	0.2174	0.1335
Leverage	-0.0520***	-0.0449***	-0.0904***	-0.1041***	-0.0701***	-0.0530***	-0.0371***	-0.0296***	-0.0400***	-0.0372***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0270***	0.0267***	0.0335***	0.0339***	0.0280***	0.0287***	0.0152***	0.0145***	0.0368***	0.0368***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0062	0.0093	0.0000	0.0000
Risk	-0.0266***	-0.0260***	-0.0230***	-0.0250***	-0.0342***	-0.0331***	-0.0061	-0.0040	-0.0466***	-0.0469***
	0.0000	0.0000	0.0026	0.0012	0.0000	0.0000	0.3788	0.5682	0.0000	0.0000
GA dummy*List age	-0.0011***		-0.0018***		-0.0001		-0.0013**		0.0002	
	0.0001		0.0022		0.8561		0.0174		0.6973	
GA dummy*Leverage		-0.0168***		0.0275*		-0.0442***		-0.0228**		-0.0065
		0.0044		0.0513		0.0001		0.0445		0.5560
Constant	0.0283***	0.0336***	0.0383***	0.0600***	0.0566***	0.0424***	0.0054	0.0134	0.0486***	0.0428***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.6191	0.1655	0.0008	0.0003
Observation	5689	5689	1072	1072	1393	1393	1676	1676	1548	1548
Sector dummy	No	No	No	No	No	No	No	No	No	No
Adj.R-square	0.0909	0.0897	0.2059	0.2017	0.1579	0.1667	0.0410	0.0401	0.0799	0.0800
F-statistics	95.7410***	94.3882***	47.2754***	46.1036***	44.5062***	47.4267***	12.9461***	12.6635***	23.3986***	23.4342***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.48: Interaction Analyses when Dep. Variable is Excess Profitability (Net)-OLS (Continued)

Variable	(1) Overall 1993-12		(2) 1993-97		(3) 1998-02		(4) 2003-07		(5) 2008-12	
Group affiliation dummy	0.0352***	0.0276***	0.0559***	0.0120	0.0227**	0.0555***	0.0291**	0.0188*	-0.0125	0.0036
	0.0000	0.0000	0.0000	0.3663	0.0487	0.0000	0.0367	0.0997	0.5144	0.7730
Listage	0.0005**	0.0000	0.0020***	0.0012***	-0.0002	-0.0002	0.0009**	0.0004	-0.0005	-0.0003
	0.0135	0.9477	0.0000	0.0001	0.5608	0.4170	0.0373	0.2221	0.2738	0.4074
Leverage	-0.0518***	-0.0460***	-0.0926***	-0.1082***	-0.0701***	-0.0540***	-0.0391***	-0.0349***	-0.0403***	-0.0389***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0267***	0.0265***	0.0336***	0.0342***	0.0270***	0.0280***	0.0158***	0.0154***	0.0367***	0.0368***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0045	0.0058	0.0000	0.0000
Risk	-0.0258***	-0.0252***	-0.0252***	-0.0270***	-0.0330***	-0.0324***	-0.0053	-0.0039	-0.0459***	-0.0462***
	0.0000	0.0000	0.0011	0.0005	0.0000	0.0000	0.4430	0.5676	0.0000	0.0000
GA dummy*List age	-0.0009***		-0.0016***		0.0000		-0.0009*		0.0005	
	0.0009		0.0050		0.9330		0.0961		0.4541	
GA dummy*Leverage		-0.0136**		0.0301**		-0.0411***		-0.0123		-0.0037
		0.0227		0.0341		0.0005		0.2806		0.7425
Constant	0.0463***	0.0529***	0.0322*	0.0576***	0.0632***	0.0489***	0.0870***	0.0953***	0.0354	0.0254
	0.0000	0.0000	0.0687	0.0016	0.0003	0.0035	0.0000	0.0000	0.1200	0.2095
Observation	5689	5689	1072	1072	1393	1393	1676	1676	1548	1548
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.0926	0.0916	0.2167	0.2142	0.1606	0.1681	0.0675	0.0666	0.0816	0.0813
F-statistics	33.2388***	32.8804***	18.4276***	18.1689***	15.7968***	16.6215***	7.7395***	7.6429***	8.6340***	8.6063***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.49: Interaction Analyses when Dep. Variable is Excess Profitability (Net)-RE-GLS

Variable	(1) Overall 1993-12		(2) 1993-97		(3) 1998-02		(4) 2003-07		(5) 2008-12	
Group affiliation dummy	0.0381***	0.0127	0.0540***	-0.0173	0.0183	0.0457***	0.0292*	0.0151	-0.0176	-0.031**
	0.0004	0.1598	0.0004	0.3083	0.2459	0.0010	0.1041	0.2891	0.5186	0.0618
Listage	0.0001	-0.0004**	0.0017***	0.0010**	-0.0003	-0.0002	0.0008	0.0003	-0.0009	-0.0004
	0.7589	0.0328	0.0063	0.0172	0.5192	0.6269	0.1217	0.4499	0.2128	0.3644
Leverage	-0.0524***	-0.0551***	-0.0809***	-0.1159***	-0.0623***	-0.0519***	-0.0493***	-0.0461***	-0.0568***	-0.075***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0261***	0.0259***	0.0269***	0.0274***	0.0247***	0.0253***	0.0191***	0.0189***	0.0329***	0.033***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0003	0.0004	0.0000	0.0000
Risk	-0.0158***	-0.0157***	-0.0260***	-0.0279***	-0.0200***	-0.0202***	-0.0002	0.0006	-0.0280***	-0.026***
	0.0000	0.0000	0.0009	0.0003	0.0020	0.0016	0.9825	0.9356	0.0011	0.0018
GA dummy*List age	-0.0010**		-0.0014		0.0004		-0.0010		0.0007	
	0.0178		0.1125		0.6021		0.1633		0.4615	
GA dummy*Leverage		0.0067		0.0692***		-0.0263**		-0.0095		0.037***
		0.3559		0.0000		0.0434		0.4949		0.0078
Constant	0.0546***	0.0704***	0.0354	0.0749***	0.0612***	0.0477**	0.0934***	0.1036***	0.0548*	0.0594**
	0.0012	0.0000	0.1734	0.0044	0.0100	0.0335	0.0001	0.0000	0.0942	0.0411
Observation	5689	5689	1072	1072	1393	1393	1676	1676	1548	1548
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.0624	0.0621	0.1197	0.1276	0.0894	0.0944	0.0539	0.0531	0.0657	0.0691
F-statistics	11.229***	11.174***	9.565***	10.213***	8.5906***	9.0607***	6.2964***	6.2138***	7.0395***	7.379***
Chi-square	40.728***	67.467***	23.905***	48.639***	46.271***	71.393***	56.161***	53.942***	21.342***	65.25***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

4.1.4 Business Groups and Risk Sharing

Panel A, B and C present the regression results when dependent variable is Risk-operating profits variability and Panel D, E and F show the results when dependent variable is Risk-net profits variability. Further, Panel A and D give the regression results of Group affiliation dummy, Panel B and E demonstrates the results of Group diversification and finally Panel C and F presents the results of group diversification dummies. Moreover, model 1 and 2 give the results of the whole sample 1993-2012 and model 3 and 4, 5 and 6, 7 and 8 and 9 and 10 present the results of subsamples 1993-97, 1998-02, 2003-07 and 2008-12 respectively. Models 1, 3, 5, 7 and 9 represent the regressions where industry dummies are not included in models whereas the regression model 2, 4, 6, 8 and 10 include industry dummies. Table 4.50, 4.51 and 4.52 present the OLS results.

The results of Panel A in Table 4.50 show the impact of group affiliation on risk-operating profits variability. The coefficient of Group affiliation dummy is -0.0078 ($p<0.01$) in the whole sample as shown in model 1. The corresponding figures are 0.0052 ($p>0.10$), -0.0098 ($p<0.05$), -0.0140 ($p<0.05$) and -0.0075 ($p>0.10$) respectively in the four consecutive subsamples as shown in model 3, 5, 7 and 9. The statistics suggest that group firms bear lower Risk-operating profits variability. Similarly, the results reported in model 2, 4, 6, 8 and 10 included industry dummies in the regression models and confirm the above results. Model 2 shows that coefficient is -0.0081 ($p<0.01$) which indicates that group firms enjoy lower risk than standalone firms. The coefficient of 0.0060 ($p>0.10$) in model 4 shows that group firms are not engaged in risk sharing during the initial sample period. However, coefficients of -0.0110 ($p<0.05$) and -0.0152 ($p<0.05$) as shown in model 6 and 8 reveal that group firms bear lower risk than standalone firms. The findings confirm the risk sharing role of BGs in the latter periods of 1998-02 and 2003-07. Again, BGs do not seem strongly influential in smoothing their income flows during as shown by the insignificant coefficient value of -0.0051 ($p>0.10$) in model 10. The lower Risk-operating profits variability of group firms than standalone firms is consistent with risk sharing hypothesis (Lincoln and Gerlach, 2004; Khanna and Yafeh, 2005; Estrin et al., 2009; Gedajlovic and Shapiro, 2002).

TABLE 4.50: Panel A: Group Affiliation and Risk-Operating Profits Variability-OLS

Variable	(1) Overall 1993-12		(2) 1993-97		(3) 1998-02		(4) 2003-07		(5) 2008-12	
Group affiliation dummy	-0.0078***	-0.0081***	0.0052	0.0060	-0.0098**	-0.0110**	-0.0140**	-0.0152**	-0.0075	-0.0051
	0.0059	0.0052	0.2201	0.1685	0.0275	0.0159	0.0161	0.0110	0.2517	0.4460
Operating profits	0.0680***	0.0693***	-0.0116	-0.0160	0.1161***	0.1160***	0.1593***	0.1690***	-0.0071	-0.0144
	0.0000	0.0000	0.5269	0.3908	0.0000	0.0000	0.0000	0.0000	0.7175	0.4671
Listage	0.0006***	0.0006***	0.0003**	0.0004**	0.0003*	0.0003	0.0005**	0.0005**	0.0007***	0.0007**
	0.0000	0.0000	0.0426	0.0133	0.0652	0.1611	0.0348	0.0268	0.0039	0.0144
Leverage	0.0484***	0.0482***	0.0158***	0.0158***	0.0337***	0.0336***	0.0534***	0.0527***	0.0621***	0.0624***
	0.0000	0.0000	0.0003	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0015	0.0017	0.0131***	0.0135***	-0.0091**	-0.0091**	0.0078*	0.0094**	-0.0030	-0.0039
	0.5405	0.4794	0.0007	0.0005	0.0193	0.0196	0.0953	0.0481	0.6072	0.4976
Constant	0.0046	0.0055	0.0218***	0.0436***	0.0193***	0.0107	0.0008	0.0064	0.0008	-0.0076
	0.1984	0.4267	0.0001	0.0000	0.0006	0.3265	0.9134	0.6476	0.9306	0.6401
Observation	5689	5689	1072	1072	1393	1393	1676	1676	1548	1548
Sector dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.0815	0.0821	0.0239	0.0349	0.0713	0.0821	0.1043	0.1049	0.1143	0.1164
F-statistics	101.9514***	30.9173***	6.2373***	3.4235***	22.3765***	8.3280***	40.0123***	12.5432***	40.9237***	12.9934***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

In order to examine the impact of group diversification on firm risk, the regression analyses are done and the results are reported in Panel B and E. In regression results of Panel B in Table 4.51, dependent variable is Risk-operating profits variability. Model 1 shows that coefficient of Group diversification is -0.0007 ($p<0.01$) during the whole period 1993-2012. Model 3, 5, 7 and 9 illustrate that coefficients are 0.0000 ($p>0.10$), -0.0008 ($p<0.05$), -0.0013 ($p<0.01$) and -0.0003 ($p>0.10$) respectively during the sub-periods of 1993-97, 1998-02, 2003-07 and 2008-12. In the same lines, the results are unchanged when industry dummies are included in the regressions. The coefficient is -0.0007 ($p<0.01$) in model 2 which suggests that group diversification significantly reduces operating profits variability during the whole period. Although an insignificant coefficient value of 0.0002 ($p>0.10$) indicates that group diversification is not influential in affecting the risk sharing among group affiliates during the 1993-97 period as shown in model 4, the coefficients of -0.0009 ($p<0.05$) and -0.0013 ($p<0.01$) as shown in model 6 and 8 confirm the key role of group diversification in smoothing their earnings in the latter periods of 1998-02 and 2003-07. However, the insignificant coefficient value of -0.0001 ($p>0.10$) tend to show a negligible effect of group diversification on Risk-operating profits variability during the 2008-12 period. The negative relationship of group diversification on risk in most of the regression models indicates that group diversification reduces Risk-operating profits variability in Pakistan. Business groups help in reducing risk and provide insurance function to their member firms through different ways like helping in getting loans, transferring cash flows from one firm with surplus funds to another in shortage of funds, etc. (Khanna and Yafeh, 2005; Estrin et al., 2009).

TABLE 4.51: Panel B: Group Diversification and Risk-Operating Profits Variability-OLS

Variable	(1) Overall 1993-12		(2) 1993-97		(3) 1998-02		(4) 2003-07		(5) 2008-12	
Group diversification	-0.0007***	-0.0007***	0.0000	0.0002	-0.0008**	-0.0009**	-0.0013***	-0.0013**	-0.0003	-0.0001
	0.0029	0.0041	0.9335	0.6400	0.0303	0.0165	0.0065	0.0109	0.5740	0.7906
Operating profits	0.0686***	0.0694***	-0.0084	-0.0131	0.1140***	0.1132***	0.1616***	0.1703***	-0.0066	-0.0145
	0.0000	0.0000	0.6454	0.4797	0.0000	0.0000	0.0000	0.0000	0.7353	0.4638
Listage	0.0006***	0.0006***	0.0004**	0.0004**	0.0003*	0.0003	0.0005**	0.0005**	0.0007***	0.0006**
	0.0000	0.0000	0.0362	0.0117	0.0551	0.1444	0.0315	0.0275	0.0050	0.0179
Leverage	0.0485***	0.0484***	0.0158***	0.0158***	0.0339***	0.0340***	0.0541***	0.0537***	0.0624***	0.0626***
	0.0000	0.0000	0.0003	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0015	0.0017	0.0128***	0.0134***	-0.0088**	-0.0088**	0.0078*	0.0092*	-0.0033	-0.0042
	0.5462	0.4914	0.0009	0.0005	0.0236	0.0246	0.0970	0.0521	0.5683	0.4746
Constant	0.0036	0.0025	0.0243***	0.0473***	0.0177***	0.0061	-0.0010	0.0012	-0.0017	-0.0105
	0.2958	0.7012	0.0000	0.0000	0.0010	0.5584	0.8860	0.9296	0.8492	0.5063
Observation	5689	5689	1072	1072	1393	1393	1676	1676	1548	1548
Sector dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.0817	0.0821	0.0225	0.0334	0.0712	0.0821	0.1052	0.1049	0.1137	0.1162
F-statistics	102.2342***	30.9453***	5.9292***	3.3133***	22.3405***	8.3243***	40.3755***	12.5441***	40.6977***	12.9590***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

The strength of risk sharing among group affiliates may be different for business groups diversified at different levels. Three diversified dummies including least, intermediate and most diversified dummy are constructed relative to standalone firms. Panel C and F report the results of diversification dummies for both Risk-operating profits variability and Risk-net profits variability respectively. Model 1 of Panel C in Table 4.52 shows significant coefficients of -0.0058 ($p<0.10$), -0.0076 ($p<0.10$) and -0.0118 ($p<0.01$) respectively for Least diversified, Intermediate diversified and most diversified group affiliates in the whole sample. The corresponding figures are -0.0063 ($p<0.10$), -0.0076 ($p<0.10$) and -0.0120 ($p<0.01$) after the industry dummies are included in the regression model as shown in model 2. The subsamples tend to show results in the same lines of the whole sample results. However, the results are not significant at conventional levels in 1993-97 and 2008-12 subsamples consistent with the results of Group diversification reported in Panel B and E. The negative coefficients figures suggest that firms affiliated with business groups diversified at different levels exert higher strength of risk sharing relative to standalone firms in Pakistan.

In the regression models, a few control variables like operating profits, list age, leverage and growth are included. The Operating profits variable show mixed results. It is significantly positively related in the whole sample and sub-samples except 1993-97 and 2008-12 subsamples where a significantly inverse relationship prevails. Firm List age and Leverage are consistently positively related to Risk-operating profits variability. Firm Growth is positively related to risk variable and the relationship is significant at various levels of significance as well. However, it is significantly negatively related to risk in the subsample of 1998-02.

TABLE 4.52: Panel C: Group Diversification Dummies and Risk-Operating Profits Variability-OLS

Variable	(1) Overall 1993-12		(2) 1993-97		(3) 1998-02		(4) 2003-07		(5) 2008-12	
Least diversified	-0.0058*	-0.0063*	0.0075	0.0076	-0.0048	-0.0062	-0.0119*	-0.0136*	-0.0085	-0.0062
	0.0947	0.0742	0.1536	0.1559	0.3886	0.2772	0.0969	0.0607	0.2815	0.4425
Intermediated diversified	-0.0076*	-0.0076*	0.0063	0.0059	-0.0172***	-0.0162**	-0.0095	-0.0108	-0.0085	-0.0064
	0.0527	0.0622	0.2726	0.3310	0.0045	0.0105	0.2408	0.2036	0.3569	0.5068
Most diversified	-0.0118***	-0.0120***	-0.0002	0.0032	-0.0087	-0.0127*	-0.0240***	-0.0235**	-0.0044	-0.0016
	0.0059	0.0064	0.9745	0.6152	0.1947	0.0621	0.0069	0.0103	0.6581	0.8795
Operating profits	0.0686***	0.0698***	-0.0110	-0.0158	0.1160***	0.1153***	0.1607***	0.1703***	-0.0079	-0.0152
	0.0000	0.0000	0.5498	0.3960	0.0000	0.0000	0.0000	0.0000	0.6886	0.4451
Listage	0.0006***	0.0006***	0.0004**	0.0004**	0.0003*	0.0003	0.0005**	0.0006**	0.0007***	0.0007**
	0.0000	0.0000	0.0336	0.0121	0.0612	0.1430	0.0286	0.0239	0.0044	0.0158
Leverage	0.0484***	0.0482***	0.0158***	0.0158***	0.0338***	0.0336***	0.0537***	0.0530***	0.0621***	0.0624***
	0.0000	0.0000	0.0003	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0015	0.0017	0.0131***	0.0135***	-0.0090**	-0.0089**	0.0076	0.0092*	-0.0029	-0.0039
	0.5429	0.4851	0.0007	0.0005	0.0209	0.0237	0.1035	0.0522	0.6118	0.5054
Constant	0.0044	0.0047	0.0216***	0.0428***	0.0191***	0.0094	0.0002	0.0050	0.0010	-0.0070
	0.2208	0.4968	0.0001	0.0000	0.0007	0.3904	0.9770	0.7217	0.9113	0.6665
Observation	5689	5689	1072	1072	1393	1393	1676	1676	1548	1548
Sector dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.0815	0.0820	0.0233	0.0335	0.0723	0.0823	0.1045	0.1046	0.1132	0.1154
F-statistics	73.0626***	27.7384***	4.6538***	3.0607***	16.5029***	7.5704***	28.9126***	11.2988***	29.2220***	11.6232***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

The results of panel data analyses are similar to OLS results. The coefficient of Group affiliation dummy is -0.0100 ($p<0.05$) in the whole sample as shown in model 1 of Panel A of Table 4.53. The coefficients are consistently negative in the subsamples except for 1993-97 and however, these are not highly significant. The findings indicate that Risk-operating profits variability is significantly lower for group firms than standalone firms in Pakistan.

TABLE 4.53: Panel A: Group Affiliation and Risk-Operating Profits Variability-RE-GLS

Variable	(1) Overall 1993-12	(2) 1993-97	(3) 1998-02	(4) 2003-07	(5) 2008-12
Group affiliation dummy	-0.0100**	0.0063	-0.0129**	-0.0149	-0.0066
	0.0456	0.1904	0.0247	0.1188	0.4654
Operating profits	0.0758***	-0.0274	0.1284***	0.1538***	0.0070
	0.0000	0.1487	0.0000	0.0000	0.7261
Listage	0.0008***	0.0005**	0.0003	0.0005	0.0007**
	0.0000	0.0155	0.1873	0.1744	0.0433
Leverage	0.0424***	0.0145***	0.0254***	0.0504***	0.0615***
	0.0000	0.0017	0.0000	0.0000	0.0000
Growth	0.0013	0.0125***	-0.0091**	0.0111***	-0.0081
	0.5762	0.0009	0.0135	0.0072	0.1336
Constant	0.0059	0.0449***	0.0179	0.0082	-0.0071
	0.6175	0.0001	0.1929	0.7131	0.7473
Observation	5689	1072	1393	1676	1548
Sector dummy	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.0480	0.0276	0.0553	0.0658	0.0732
F-statistics	17.8748***	2.8992***	5.7966***	7.9446***	8.1881***
Chi-square	30.3015***	29.3291***	49.1666***	1.7299***	13.6209***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

Table 4.54 shows the results of group diversification and Table 4.55 reports the results of group diversification dummies. The results indicate that Group diversification is significantly negatively related to Risk. The coefficient value is -0.0009 ($p<0.05$) as shown in model 1 of Panel B. Similar trend is shown in subsamples.

TABLE 4.54: Panel B: Group Diversification and Risk-Operating Profits Variability-RE-GLS

Variable	(1) Overall 1993-12	(2) 1993-97	(3) 1998-02	(4) 2003-07	(5) 2008-12
Group diversification	-0.0009**	0.0002	-0.0011**	-0.0012	-0.0003
	0.0373	0.6111	0.0242	0.1209	0.7381
Operating profits	0.0759***	-0.0251	0.1264***	0.1544***	0.0071
	0.0000	0.1842	0.0000	0.0000	0.7257
Listage	0.0008***	0.0005**	0.0003	0.0005	0.0007*
	0.0000	0.0140	0.1715	0.1751	0.0504
Leverage	0.0426***	0.0145***	0.0258***	0.0512***	0.0617***
	0.0000	0.0018	0.0000	0.0000	0.0000
Growth	0.0013	0.0123***	-0.0089**	0.0110***	-0.0083
	0.5864	0.0011	0.0159	0.0078	0.1268
Constant	0.0028	0.0488***	0.0129	0.0033	-0.0106
	0.8034	0.0000	0.3254	0.8802	0.6213
Observation	5689	1072	1393	1676	1548
Sector dummy	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.0481	0.0262	0.0554	0.0658	0.0729
F-statistics	17.9026***	2.8009***	5.8031***	7.9436***	8.1557***
Chi-square	30.7129***	29.8655***	50.2825***	1.9634	13.5460***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

In the same lines, group diversification dummies are consistently negative as shown in Panel C in Table 4.55. Model 1 reports that coefficients are -0.0076 ($p>0.10$), -0.0097 ($p>0.10$) and -0.0147 ($p<0.10$) respectively for Least diversified, Intermediate diversified and Most diversified group firms relative to standalone firms. The negative coefficient signs indicate that group firms enjoy lower standard deviation of operating profits variability than their counterpart standalone firms in Pakistan. The results confirm that diversified business groups tend to play a key role of risk sharing among their group affiliates. The results show consistent results for control variables as discussed for OLS.

TABLE 4.55: Panel C: Group Diversification Dummies and Risk-Operating Profits Variability-RE-GLS

Variable	(1) Overall 1993-12	(2) 1993-97	(3) 1998-02	(4) 2003-07	(5) 2008-12
Least diversified	-0.0076	0.0080	-0.0075	-0.0135	-0.0072
	0.2176	0.1832	0.2914	0.2480	0.5105
Intermediated diversified	-0.0097	0.0058	-0.0186**	-0.0104	-0.0086
	0.1753	0.3889	0.0221	0.4448	0.5103
Most diversified	-0.0147*	0.0040	-0.0155*	-0.0229	-0.0033
	0.0538	0.5753	0.0732	0.1168	0.8149
Operating profits	0.0760***	-0.0275	0.1280***	0.1542***	0.0067
	0.0000	0.1472	0.0000	0.0000	0.7403
Listage	0.0008***	0.0005**	0.0003	0.0005	0.0007**
	0.0000	0.0144	0.1709	0.1661	0.0458
Leverage	0.0424***	0.0144***	0.0254***	0.0506***	0.0614***
	0.0000	0.0020	0.0000	0.0000	0.0000
Growth	0.0013	0.0125***	-0.0089**	0.0110***	-0.0081
	0.5821	0.0010	0.0152	0.0076	0.1339
Constant	0.0051	0.0442***	0.0166	0.0069	-0.0066
	0.6655	0.0001	0.2289	0.7585	0.7654
Observation	5689	1072	1393	1676	1548
Sector dummy	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.0477	0.0258	0.0551	0.0650	0.0718
F-statistics	15.9974***	2.5768***	5.2684***	7.1237***	7.2992***
Chi-square	30.1530***	29.1748***	49.2946***	1.9173	13.8774***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

4.1.4.1 Robustness Check

Panel D in Table 4.56 reports the regression results of Group affiliation dummy when dependent variable is Risk-net profits variability. The results confirm the results discussed above. The coefficients are -0.0076 ($p<0.01$) in the whole sample and 0.0009 ($p>0.10$), -0.0075 ($p>0.10$), -0.0140 ($p<0.05$) and -0.0047 ($p>0.10$) in the consecutive sub-periods as shown in model 1, 3, 5, 7 and 9. The coefficient of -0.0073 ($p<0.05$) reported in model 2 suggests that business groups play a key role in risk sharing among their group affiliates during the whole sample period 1993-2012. Business groups do not tend to show risk sharing behavior during the initial period 1993-97 as shown the insignificant coefficient of 0.0033 ($p>0.10$) in model 4. However, the coefficients of -0.0078 ($p<0.10$), -0.0151 ($p<0.05$) and -0.0024 ($p>0.10$) respectively reported in model 6, 8 and 10 confirm that business groups effectively engaged in smoothing their earnings. The negative coefficient values of group affiliation dummies in most of the regression models confirm that group firms bear lower level of risk-net profits variability than standalone firms in Pakistan. The findings are again consistent with risk sharing hypothesis (Khanna and Yafeh, 2005; Estrin et al., 2009).

TABLE 4.56: Panel D: Group Affiliation and Risk-Net Profits Variability-OLS

Variable	(1) Overall 1993-12		(2) 1993-97		(3) 1998-02		(4) 2003-07		(5) 2008-12	
Group affiliation dummy	-0.0076***	-0.0073**	0.0009	0.0033	-0.0075	-0.0078	-0.0140**	-0.0151**	-0.0047	-0.0024
	0.0072	0.0118	0.8322	0.4454	0.1126	0.1063	0.0190	0.0141	0.4580	0.7076
Operating profits	0.0094	0.0103	-0.1198***	-0.1240***	0.0757***	0.0768***	0.0955***	0.1052***	-0.0524***	-0.0599***
	0.3437	0.3038	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0052	0.0016
Listage	0.0005***	0.0006***	0.0004**	0.0005***	0.0005**	0.0004**	0.0004	0.0004*	0.0005**	0.0004*
	0.0000	0.0000	0.0127	0.0050	0.0123	0.0490	0.1089	0.0822	0.0420	0.0867
Leverage	0.0495***	0.0489***	0.0254***	0.0250***	0.0405***	0.0405***	0.0532***	0.0523***	0.0590***	0.0584***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0036	0.0039	0.0128***	0.0130***	-0.0068*	-0.0073*	0.0097**	0.0113**	0.0008	-0.0001
	0.1394	0.1093	0.0009	0.0007	0.0978	0.0778	0.0442	0.0198	0.8836	0.9855
Constant	0.0084**	0.0028	0.0247***	0.0217**	0.0133**	0.0048	0.0068	0.0136	0.0084	-0.0063
	0.0204	0.6855	0.0000	0.0344	0.0253	0.6766	0.3898	0.3470	0.3462	0.6882
Observation	5689	5689	1072	1072	1393	1393	1676	1676	1548	1548
Sector dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.0850	0.0857	0.0991	0.1060	0.0735	0.0757	0.0850	0.0852	0.1202	0.1231
F-statistics	106.6188***	32.3582***	24.5587***	8.9386***	23.0815***	7.7052***	32.1026***	10.1755***	43.2607***	13.7712***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

The results reported in Panel E in Table 4.57 confirm the group diversification as an important factor affecting Risk-net profits variability. Model 1 shows a significant coefficients value of -0.0006 ($p<0.05$) in the whole sample. Model 3, 5, 7 and 9 show the corresponding figures of 0.0000 ($p>0.10$), -0.0009 ($p<0.05$), -0.0010 ($p<0.05$) and 0.0001 ($p>0.10$) respectively in the subsamples. Models 2, 4, 6, 8 and 10 report the similar results as explained earlier. Group diversification is significantly negatively related to Risk-net profits variability in the whole sample with a coefficient value is -0.0005 ($p<0.005$) as shown in model 2. Again, group diversification does not seem strongly affecting risk sharing among group affiliates in the subsamples of 1993-97 and 2008-12. However, coefficients of -0.0010 ($p<0.05$) and -0.0009 ($p<0.10$) confirm that group diversification causes smoothing of income flows among group affiliates in the 1998-02 and 2003-07 subsamples.

Further, Panel F in Table 4.58 confirms the similar statistics for diversified dummies when dependent variable is Risk-net profits variability. The coefficients are significantly negative and reported figures are -0.0064 ($p<0.10$), -0.0086 ($p<0.05$) and -0.0087 ($p<0.05$) respectively for Least diversified, Intermediate diversified and Most diversified in the whole sample as shown in model 1. The respective figures are -0.0062 ($p<0.10$), -0.0088 ($p<0.05$) and -0.0076 ($p<0.10$) when industry dummies are included in regression as shown in model 2. The results show similar trend of relationships in the subsamples. The results again confirm that group headquarters smooth income flows to bring group stability.

TABLE 4.57: Panel E: Group Diversification and Risk-Net Profits Variability-OLS

Variable	(1) Overall 1993-12		(2) 1993-97		(3) 1998-02		(4) 2003-07		(5) 2008-12	
Group diversification	-0.0006**	-0.0005**	0.0000	0.0002	-0.0009**	-0.0010**	-0.0010**	-0.0009*	0.0001	0.0003
	0.0175	0.0404	0.9689	0.6165	0.0193	0.0131	0.0377	0.0678	0.8266	0.5456
Operating profits	0.0095	0.0099	-0.1193***	-0.1229***	0.0749***	0.0759***	0.0969***	0.1055***	-0.0528***	-0.0608***
	0.3364	0.3210	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0049	0.0014
Listage	0.0005***	0.0006***	0.0004	0.0005	0.0005	0.0004	0.0004	0.0004	0.0005	0.0004
	0.0000	0.0000	0.0128**	0.0052**	0.0081**	0.0344**	0.1155*	0.0999*	0.0566*	0.1181*
Leverage	0.0498***	0.0492***	0.0254***	0.0250***	0.0404***	0.0406***	0.0540***	0.0534***	0.0594***	0.0587***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0036	0.0039	0.0127***	0.0130***	-0.0065	-0.0070*	0.0097**	0.0112**	0.0006	-0.0002
	0.1406	0.1123	0.0009	0.0007	0.1129	0.0920	0.0444	0.0212	0.9107	0.9726
Constant	0.0068**	-0.0005	0.0251***	0.0234**	0.0136**	0.0032	0.0036	0.0069	0.0056	-0.0093
	0.0489	0.9433	0.0000	0.0176	0.0168	0.7695	0.6279	0.6207	0.5144	0.5386
Observation	5689	5689	1072	1072	1393	1393	1676	1676	1548	1548
Sector dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.0847	0.0853	0.0991	0.1057	0.0755	0.0781	0.0843	0.0837	0.1199	0.1232
F-statistics	106.2743***	32.2198***	24.5490***	8.9151***	23.7228***	7.9340***	31.8436***	10.0007***	43.1460***	13.7864***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.58: Panel F: Group Diversification Dummies and Risk-Net Profits Variability-OLS

Variable	(1) Overall 1993-12		(2) 1993-97		(3) 1998-02		(4) 2003-07		(5) 2008-12	
Least diversified	-0.0064*	-0.0062*	0.0014	0.0039	0.0013	0.0009	-0.0144*	-0.0162**	-0.0076	-0.0054
	0.0679	0.0800	0.7883	0.4649	0.8277	0.8877	0.0504	0.0307	0.3123	0.4789
Intermediated diversified	-0.0086**	-0.0088**	0.0012	0.0018	-0.0184***	-0.0170**	-0.0089	-0.0107	-0.0061	-0.0056
	0.0284	0.0314	0.8401	0.7658	0.0042	0.0117	0.2831	0.2191	0.4903	0.5446
Most diversified	-0.0087**	-0.0076*	-0.0003	0.0040	-0.0081	-0.0113	-0.0200**	-0.0184*	0.0031	0.0074
	0.0411	0.0858	0.9590	0.5317	0.2534	0.1201	0.0281	0.0506	0.7420	0.4510
Operating profits	0.0096	0.0103	-0.1196***	-0.1240***	0.0753***	0.0756***	0.0960***	0.1055***	-0.0543***	-0.0620***
	0.3340	0.3047	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0040	0.0011
Listage	0.0006***	0.0006***	0.0004**	0.0005***	0.0005***	0.0004**	0.0004*	0.0004*	0.0005*	0.0004*
	0.0000	0.0000	0.0123	0.0050	0.0098	0.0373	0.1001	0.0807	0.0510	0.1029
Leverage	0.0495***	0.0488***	0.0254***	0.0248***	0.0406***	0.0405***	0.0532***	0.0524***	0.0590***	0.0584***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0036	0.0039*	0.0128***	0.0131***	-0.0066	-0.0068*	0.0095**	0.0112**	0.0009	0.0001
	0.1401	0.1095	0.0009	0.0007	0.1107	0.0995	0.0478	0.0209	0.8663	0.9876
Constant	0.0083**	0.0026	0.0247***	0.0217**	0.0130**	0.0025	0.0065	0.0132	0.0090	-0.0047
	0.0216	0.7036	0.0000	0.0353	0.0290	0.8299	0.4107	0.3642	0.3166	0.7650
Observation	5689	5689	1072	1072	1393	1393	1676	1676	1548	1548
Sector dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.0847	0.0854	0.0975	0.1044	0.0773	0.0786	0.0845	0.0844	0.1197	0.1229
F-statistics	76.1912***	28.9624***	17.5204***	7.9383***	17.6679***	7.2482***	23.0780***	9.1248***	31.0602***	12.4116***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

Tables 4.59, 4.60 and 4.61 demonstrate the results of Panel data analyses. Panel D in Table 4.59 show the impact of group affiliation on Risk-net profits variability. The coefficient value is -0.0093 (p<0.10) and it is significant at conventional level as shown in model 1. The coefficients are still negative except 1993-97 period and are not highly significant. The results argue that Risk-net profits variability is significantly lower for group firms than standalone firms in Pakistan.

TABLE 4.59: Panel D: Group Affiliation and Risk-Net Profits Variability-RE-GLS

Variable	(1) Overall 1993-12	(2) 1993-97	(3) 1998-02	(4) 2003-07	(5) 2008-12
Group affiliation dummy	-0.0093*	0.0042	-0.0100	-0.0161*	-0.0035
	0.0571	0.4210	0.1189	0.0886	0.6835
Operating profits	0.0153	-0.1423***	0.1049***	0.1038***	-0.0406**
	0.1358	0.0000	0.0000	0.0000	0.0352
Listage	0.0007***	0.0005***	0.0004*	0.0005	0.0005
	0.0000	0.0099	0.0994	0.2071	0.1629
Leverage	0.0420***	0.0255***	0.0334***	0.0476***	0.0566***
	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0030	0.0119***	-0.0066*	0.0119***	-0.0048
	0.2042	0.0013	0.0823	0.0064	0.3563
Constant	0.0054	0.0216*	0.0105	0.0161	-0.0043
	0.6391	0.0750	0.4948	0.4679	0.8340
Observation	5689	1072	1393	1676	1548
Sector dummy	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.0439	0.0996	0.0463	0.0454	0.0775
F-statistics	16.3538***	8.4076***	4.9759***	5.6839***	8.6438***
Chi-square	32.7619***	28.6950***	49.7087***	2.6425***	16.2104***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

The results indicate that Group diversification is significantly negatively related to Risk. The coefficient is -0.0007 (p<0.10) as shown in model 1 of Panel E in Table 4.60. Similar trend is shown in subsamples. The findings suggest that group diversification helps firms in reducing risk.

TABLE 4.60: Panel E: Group Diversification and Risk-Net Profits Variability-RE-GLS

Variable	(1) Overall 1993-12	(2) 1993-97	(3) 1998-02	(4) 2003-07	(5) 2008-12
Group diversification	-0.0007*	0.0003	-0.0012**	-0.0010	0.0002
	0.0995	0.5581	0.0251	0.1956	0.7279
Operating profits	0.0152	-0.1414***	0.1041***	0.1041***	-0.0412
	0.1379	0.0000	0.0000	0.0000	0.0329**
Listage	0.0007***	0.0005**	0.0005*	0.0005	0.0004
	0.0000	0.0102	0.0778	0.2280	0.2002
Leverage	0.0422***	0.0255***	0.0336***	0.0486***	0.0569***
	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0029	0.0119***	-0.0064*	0.0117***	-0.0049
	0.2085	0.0013	0.0913	0.0069	0.3493
Constant	0.0018	0.0238**	0.0085	0.0092	-0.0078
	0.8685	0.0415	0.5644	0.6681	0.6974
Observation	5689	1072	1393	1676	1548
Sector dummy	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.0437	0.0994	0.0481	0.0446	0.0775
F-statistics	16.2874***	8.3864***	5.1383***	5.6000***	8.6452***
Chi-square	33.4088***	28.9507***	49.3926***	2.9127***	16.3722***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

In the same lines, group diversification dummies are consistently negative as shown in model F of Table 4.61. Model 1 shows that coefficients are -0.0076 ($p>0.10$), -0.0113 ($p<0.10$) and -0.0103 ($p>0.10$) respectively for Least diversified, Intermediate diversified and Most diversified group firms in the whole period sample. Similar statistics are shown in the results of sub-period samples. The results confirm that diversified business groups tend to play a key role of risk sharing among their group affiliates. The results show consistent results for control variables as discussed for OLS.

TABLE 4.61: Panel F: Group Diversification Dummies and Risk-Net Profits Variability-RE-GLS

Variable	(1) Overall 1993-12	(2) 1993-97	(3) 1998-02	(4) 2003-07	(5) 2008-12
Least diversified	-0.0076	0.0047	-0.0007	-0.0166	-0.0060
	0.2094	0.4649	0.9269	0.1516	0.5518
Intermediated diversified	-0.0113	0.0025	-0.0200**	-0.0126	-0.0073
	0.1098	0.7347	0.0278	0.3520	0.5478
Most diversified	-0.0103	0.0053	-0.0143	-0.0196	0.0064
	0.1700	0.4930	0.1395	0.1782	0.6258
Operating profits	0.0153	-0.1426***	0.1041***	0.1039***	-0.0420**
	0.1342	0.0000	0.0000	0.0000	0.0301
Listage	0.0007***	0.0005**	0.0004*	0.0005	0.0005
	0.0000	0.0101	0.0841	0.2050	0.1808
Leverage	0.0419***	0.0254***	0.0335***	0.0477***	0.0565***
	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0029	0.0119***	-0.0064*	0.0118***	-0.0048
	0.2055	0.0013	0.0925	0.0066	0.3649
Constant	0.0052	0.0218*	0.0084	0.0157	-0.0028
	0.6550	0.0766	0.5873	0.4841	0.8909
Observation	5689	1072	1393	1676	1548
Sector dummy	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.0434	0.0979	0.0477	0.0442	0.0768
F-statistics	14.5935***	7.4606***	4.6708***	5.0763***	7.7738***
Chi-square	32.5578***	28.6343***	49.6457***	2.6586***	16.9246***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

4.1.4.2 Group Affiliation Interaction Analyses

Table 4.62 and 4.63 present the OLS regression results of group affiliation interaction analyses when dependent variable is Risk-operating profits variability. The results indicate that impact of list age, leverage and growth is significantly different for group firms than standalone firms. The significantly positive coefficients of List age, Leverage and Growth and significantly negative coefficients of GA*List age, GA*Leverage and GA*Growth clearly demonstrate that firm listing exposure, leverage and growth and investment policies lowers Risk-operating profits variability for group affiliated firms.

Table 4.64 reports the results of group affiliation interaction analyses of firm list age, leverage and growth using random-effect Generalized Least Square estimations. The reported figures suggest that firm list age, leverage and growth variables differently affect the Risk-operating profits variability of group firms than standalone firms. Similar to OLS results, the coefficients of group affiliation interactive dummies with List age, Leverage and Growth are significantly negative which propose that that firm listing exposure, leverage and growth and investment policies lowers risk level of diversified group affiliates.

TABLE 4.62: Interaction Analyses when Dep. Var is Risk-Operating Profits Variability-OLS

Variable	(1) Overall 1993-12				(2)1993-97			(3)1998-02			(4)2003-07			(5)2008-12	
Group affiliation dummy	0.009**	-0.0002	-0.006**	0.022***	-0.005	0.009**	-0.0063	-0.0042	-0.011**	0.019*	-0.035***	-0.0105*	0.0002	0.027***	-0.0072
	0.0762	0.9732	0.0301	0.0002	0.5129	0.0335	0.4013	0.5827	0.0126	0.096	0.0002	0.0853	0.9889	0.0053	0.2871
Operating profits	0.0667***	0.067***	0.067***	-0.016	-0.012	-0.010	0.116***	0.114***	0.115***	0.154***	0.161***	0.158***	-0.006	-0.004*	-0.007
	0.0000	0.0000	0.0000	0.3534	0.4861	0.5580	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.7308	0.8000	0.7115
Listage	0.0011***	0.0006***	0.0006***	0.001***	0.0003**	0.0003**	0.0004*	0.0003*	0.0003*	0.0014***	0.0005**	0.0005**	0.0009**	0.0007***	0.0008***
	0.0000	0.0000	0.0000	0	0.0419	0.0558	0.0895	0.0658	0.0657	0.0001	0.0302	0.0291	0.0232	0.0088	0.0039
Leverage	0.048***	0.0523***	0.0484***	0.0154***	0.009	0.0159***	0.0337***	0.0365***	0.0335***	0.053***	0.0445***	0.0533***	0.062***	0.0809***	0.0621***
	0.0000	0.0000	0.0000	0.0004	0.1435	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0018	0.0015	0.0062*	0.0128***	0.013***	0.0227***	-0.0091**	-0.009**	-0.0152***	0.0085*	0.0081*	0.0174***	-0.0029	-0.0038	-0.0017
	0.4716	0.5471	0.0753	0.0008	0.0007	0.0000	0.0192	0.0217	0.004	0.0691	0.0836	0.0088	0.6155	0.509	0.8584
GA* Listage	-0.0008***			-0.0013***			-0.0002			-0.0016***			-0.0003		
	0.0001			0.0001			0.5578			0.0008			0.5712		
GA* Leverage		-0.0096**			0.0131			-0.0072			0.0272***			-0.0423***	
		0.0351			0.1114			0.3554			0.004			0.0000	
GA* Growth			-0.0092*			-0.0263***			0.0132*			-0.0189**			-0.002
			0.0578			0.0008			0.0878			0.042			0.8693
Constant	-0.0039	0.0014	0.0039	0.0145**	0.0274***	0.0203***	0.0175***	0.017***	0.0202***	-0.0161*	0.0085	-0.0012	-0.0035	-0.0145	0.0006
	0.3476	0.7242	0.2884	0.0101	0.0000	0.0002	0.0062	0.0058	0.0004	0.0781	0.2943	0.8751	0.7722	0.1396	0.9461
Obs.	5689	5689	5689	1072	1072	1072	1393	1393	1393	1676	1676	1676	1548	1548	1548
Sector dummy	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Adj. R-square	0.0839	0.0821	0.0819	0.0373	0.0253	0.0332	0.0709	0.0712	0.0726	0.1098	0.1082	0.106	0.1139	0.1262	0.1137
F-stats	87.85***	85.75***	85.59***	7.91***	5.62***	7.13***	18.69***	18.78***	19.15***	35.43***	34.87***	34.09***	34.14***	38.22***	34.08***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.63: Interaction Analyses when Dep. Var is Risk-Operating Profits Variability-OLS (Continued)

Variable	(1)Overall 1993-12			(2)1993-97			(3)1998-02			(4)2003-07			(5)2008-12		
Group affiliation dummy	0.010**	0.000	-0.006**	0.021***	-0.004	0.010**	-0.002	-0.001	-0.012***	0.018	-0.035***	-0.011*	0.006	0.033***	-0.005
	0.043	0.889	0.025	0.0004	0.540	0.022	0.788	0.839	0.007	0.111	0.0002	0.059	0.674	0.001	0.459
Operating profits	0.0678***	0.0688***	0.069***	-0.021	-0.0175	-0.0148	0.1169***	0.113***	0.115***	0.164***	0.170***	0.168***	-0.0141	-0.0130	-0.0144
	0.0000	0.0000	0.0000	0.2516	0.3464	0.4238	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4759	0.5079	0.4679
Listage	0.001***	0.0006***	0.0006***	0.0011***	0.0004**	0.0004**	0.0005**	0.0003	0.0003	0.0014***	0.0006**	0.0006**	0.0009**	0.0006**	0.0007**
	0.0000	0.0000	0.0000	0.0000	0.0119	0.0151	0.0439	0.1698	0.1575	0.0001	0.02	0.022	0.0259	0.0358	0.0145
Leverage	0.047***	0.052***	0.048***	0.015***	0.0085	0.015***	0.033***	0.038***	0.033***	0.052***	0.044***	0.052***	0.062***	0.082***	0.062***
	0.0000	0.0000	0.0000	0.0004	0.1708	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0020	0.0017	0.0064*	0.0132***	0.0135***	0.0236***	-0.0091**	-0.0088**	-0.0145***	0.0099**	0.0097**	0.0187***	-0.0038	-0.0045	-0.004
	0.4127	0.4864	0.0661	0.0006	0.0005	0.0000	0.0194	0.025	0.0061	0.0368	0.0397	0.0052	0.5109	0.4338	0.6793
GA* Listage	-0.0009***			-0.0012***			-0.0005			-0.0016***			-0.0005		
	0.0000			0.0003			0.1472			0.0009			0.4109		
GA* Leverage		-0.0109**			0.0138*			-0.012			0.0262***			-0.0454***	
		0.0178			0.0970			0.1267			0.0066			0.0000	
GA* Growth			-0.0091*			-0.0273***			0.0117			-0.0185**			0.0001
			0.0592			0.0005			0.1316			0.0481			0.9964
Constant	-0.0063	0.0014	0.0047	0.0348***	0.0498***	0.0418***	0.0052	0.0067	0.0117	-0.0146	0.0152	0.0049	-0.0153	-0.0261	-0.0076
	0.3972	0.8448	0.4935	0.0009	0.0000	0.0000	0.6555	0.5483	0.2833	0.3429	0.2915	0.7279	0.4152	0.1159	0.6413
Observation	5689	5689	5689	1072	1072	1072	1393	1393	1393	1676	1676	1676	1548	1548	1548
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-square	0.0849	0.0828	0.0825	0.0459	0.0365	0.0451	0.0829	0.083	0.083	0.1103	0.1083	0.1064	0.1163	0.1298	0.1159
F-stats	30.32***	29.53***	29.41***	4.02***	3.38***	3.97***	7.98***	8.00***	7.99***	12.53***	12.30***	12.08***	12.30***	13.82***	12.26***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.64: Interaction Analyses when Dep. Var is Risk-Operating Profits Variability-RE-GLS

Variable	(1)Overall 1993-12			(2)1993-97			(3)1998-02			(4)2003-07			(5)2008-12		
Group affiliation dummy	0.0088	-0.0014	-0.008*	0.022***	-0.0035	0.010**	-0.0031	-0.0108	-0.014**	0.0213	-0.0135	-0.0097	0.0039	0.033***	-0.007
	0.2722	0.8366	0.094	0.000	0.6714	0.035	0.7447	0.2261	0.0134	0.2514	0.3370	0.3170	0.8555	0.009	0.438
Operating profits	0.075***	0.0761***	0.0757***	-0.0311*	-0.0285	-0.0259	0.1292***	0.128***	0.1271***	0.1521***	0.1538***	0.1534***	0.0072	0.0118	0.0072
	0.0000	0.0000	0.0000	0.0991	0.1327	0.169	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.7187	0.5561	0.7196
Listage	0.0014***	0.0008***	0.0008***	0.0011***	0.0005**	0.0005**	0.0006*	0.0003	0.0003	0.0014***	0.0005	0.0005	0.001*	0.0006*	0.0007**
	0.0000	0.0000	0.0000	0.0000	0.0135	0.0167	0.0682	0.1892	0.1853	0.0098	0.1726	0.1623	0.0801	0.0757	0.0443
Leverage	0.0422***	0.047***	0.0424***	0.0144***	0.0079	0.0144***	0.0253***	0.0265***	0.025***	0.05***	0.051***	0.0508***	0.0613***	0.0836***	0.0615***
	0.0000	0.0000	0.0000	0.0017	0.2238	0.0017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0015	0.0013	0.0063*	0.0123***	0.0126***	0.0222***	-0.0091**	-0.009**	-0.015***	0.0112***	0.0111***	0.0238***	-0.0081	-0.0086	-0.0104
	0.5161	0.5864	0.0543	0.0011	0.0008	0.0000	0.0135	0.0139	0.0024	0.0066	0.0069	0.0000	0.1363	0.1129	0.244
GA* Listage	-0.0009***			-0.0013***			-0.0006			-0.0017**			-0.0004		
	0.0030			0.0008			0.2074			0.0233			0.5829		
GA* Leverage		-0.0104*			0.0126			-0.0027			-0.0018			-0.0471***	
		0.0625			0.1502			0.7543			0.891			0.0000	
GA* Growth			-0.0099**			-0.0256***			0.0131*			-0.0265***			0.0036
			0.0312			0.0008			0.0733			0.0011			0.7467
Constant	-0.0063	0.0015	0.0051	0.0357***	0.0504***	0.0431***	0.0118	0.0169	0.0191	-0.0143	0.0076	0.0061	-0.0139	-0.0274	-0.0068
	0.6087	0.9031	0.6663	0.0019	0.0000	0.0001	0.4177	0.2279	0.1645	0.5576	0.7367	0.7865	0.5828	0.2176	0.7595
Obs.	5689	5689	5689	1072	1072	1072	1393	1393	1393	1676	1676	1676	1548	1548	1548
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-square	0.0496	0.0484	0.0486	0.0373	0.0289	0.0372	0.0557	0.0548	0.0566	0.0684	0.0654	0.0711	0.0727	0.0846	0.0727
F-stats	17.49***	17.07***	17.12***	3.44***	2.87***	3.43***	5.56***	5.48***	5.64***	7.82***	7.51***	8.11***	7.73***	8.93***	7.73***
Chi-square	32.49***	28.75***	30.93***	31.55***	32.69***	30.28***	49.22***	61.62***	49.67***	1.29***	21.50***	3.80***	14.64***	12.81***	14.82***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

4.1.4.3 Robustness Check

Table 4.65 and 4.66 present the OLS regression results of group affiliation interaction analyses when dependent variable is Risk-net profits variability. The findings reveal list age, leverage and growth variables differently affect Risk-net profits variability for group firms than standalone firms. The statistics confirm a significantly positive coefficients of List age, Leverage and Growth and significantly negative coefficients of GA*List age, GA*Leverage and GA*Growth which clearly demonstrate that firm listing exposure, leverage and growth and investment policies lowers Risk-net profits variability for group affiliated firms relative to standalone firms in Pakistan.

Table 4.67 reports the results of group affiliation interaction analyses of firm list age, leverage and growth using random-effect Generalized Least Square estimations. The results are consistent with OLS results. The coefficients of group affiliation interactive dummies with List age, Leverage and Growth are significantly negative which propose that that listing exposure, leverage and growth and investment policies lowers Risk-net profits variability of group firms than standalone firms.

TABLE 4.65: Interaction Analyses when Dep. Var is Risk-Net Profits Variability-OLS

Variable	(1)Overall 1993-12			(2)1993-97			(3)1998-02			(4)2003-07			(5)2008-12		
Group affiliation dummy	0.0032	-0.0002	-0.0062**	0.0182***	-0.011	0.005	-0.0088	0.0005	-0.0079*	0.0133	-0.0294***	-0.0124**	-0.0105	0.027***	-0.0035
	0.5314	0.9698	0.0338	0.0023	0.149	0.2517	0.2698	0.9477	0.0984	0.2587	0.0023	0.0482	0.4709	0.0049	0.5946
Operating profits	0.0086	0.0089	0.0092	-0.125***	-0.121***	-0.118***	0.075***	0.073***	0.075***	0.091***	0.097***	0.095***	-0.052***	-0.050***	-0.053***
	0.3858	0.3693	0.3542	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.005	0.0068	0.0047
Listage	0.0009***	0.0005***	0.0006***	0.0011***	0.0004**	0.0004**	0.0004	0.0005**	0.0005**	0.0011***	0.0004*	0.0004*	0.0004	0.0004*	0.0005**
	0.0000	0.0000	0.0000	0.0000	0.0124	0.0174	0.1126	0.0125	0.0124	0.002	0.1006	0.1022	0.3420	0.0748	0.0399
Leverage	0.049***	0.053***	0.049***	0.024***	0.017***	0.025***	0.040***	0.044***	0.040***	0.052***	0.046***	0.053***	0.059***	0.075***	0.059***
	0.0000	0.0000	0.0000	0.0000	0.0043	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0038	0.0036	0.0081**	0.0125***	0.0127***	0.0223***	-0.0068*	-0.0066	-0.0087	0.0102**	0.0099**	0.0142**	0.0008	0.0001	0.0061
	0.1218	0.142	0.019	0.0010	0.0009	0.0000	0.0981	0.1101	0.1197	0.0331	0.0399	0.0375	0.8909	0.9888	0.5099
GA* Listage	-0.0005***			-0.0014***			0.0001			-0.0013***			0.0002		
	0.0101			0.0001			0.8416			0.007			0.657		
GA* Leverage		-0.0094**			0.0153*			-0.0102			0.0197**			-0.037***	
		0.0402			0.0618			0.2169			0.0417			0.000	
GA* Growth			-0.0089*			-0.0261***			0.0041			-0.0089			-0.0081
			0.0662			0.0008			0.6184			0.3490			0.4744
Constant	0.0028	0.0052	0.007**	0.017***	0.031***	0.023***	0.014**	0.0101	0.013**	-0.0073	0.0123	0.0058	0.0117	-0.0053	0.0077
	0.4974	0.1855	0.0362	0.0020	0.0000	0.0000	0.0389	0.1200	0.0229	0.4411	0.1386	0.465	0.3123	0.5759	0.3936
Obs.	5689	5689	5689	1072	1072	1072	1393	1393	1393	1676	1676	1676	1548	1548	1548
Sector dummy	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Adj. R-square	0.0859	0.0855	0.0853	0.112	0.1012	0.1077	0.0728	0.0738	0.073	0.0884	0.0867	0.0849	0.1197	0.1303	0.1199
F-stats	90.04***	89.60***	89.44***	23.51***	21.09***	22.54***	19.22***	19.49***	19.26***	28.06***	27.49***	26.89***	36.06***	39.64***	36.12***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.66: Interaction Analyses when Dep. Var is Risk-Net Profits Variability-OLS (Continued)

Variable	(1)Overall 1993-12			(2)1993-97			(3)1998-02			(4)2003-07			(5)2008-12		
Group affiliation dummy	0.004	0.001	-0.006**	0.020***	-0.009	0.007*	-0.005	0.002	-0.008*	0.012	-0.029***	-0.013**	-0.006	0.031***	-0.001
	0.367	0.820	0.047	0.000	0.244	0.093	0.496	0.754	0.101	0.309	0.002	0.034	0.693	0.001	0.820
Operating profits	0.009	0.009	0.0101	-0.129***	-0.125***	-0.122***	0.077***	0.074***	0.076***	0.101***	0.106***	0.104***	-0.059***	-0.058***	-0.060***
	0.352	0.329	0.312	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001
Listage	0.0009***	0.0006***	0.0006***	0.0012***	0.0005***	0.0005***	0.0005*	0.0004*	0.0004**	0.0011***	0.0005*	0.0004*	0.0004	0.0004	0.0005*
	0.0000	0.0000	0.0000	0.0000	0.0043	0.0057	0.1008	0.0524	0.0488	0.002	0.0697	0.0766	0.3523	0.1655	0.0838
Leverage	0.048***	0.053***	0.048***	0.024***	0.016***	0.024***	0.040***	0.045***	0.040***	0.051***	0.046***	0.052***	0.058***	0.076***	0.058***
	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Growth	0.004*	0.0039	0.008**	0.012***	0.013***	0.023***	-0.007*	-0.006*	-0.0084	0.011**	0.011**	0.015**	-0.0001	-0.0006	0.0039
	0.0943	0.1117	0.0153	0.0009	0.0007	0.0000	0.0779	0.0953	0.1339	0.0157	0.0171	0.0231	0.9803	0.9123	0.6712
GA* Listage	-0.0006***			-0.0013***			-0.0001			-0.0013***			0.0001		
	0.0053			0.0001			0.7279			0.0088			0.7954		
GA* Leverage		-0.0105**			0.0159**			-0.0132			0.0187*			-0.0402***	
		0.0234			0.056			0.114			0.0581			0.0000	
GA* Growth			-0.0089			-0.0269			0.0024			-0.0085			-0.0062
			0.0675			0.0006			0.7722			0.3777			0.5846
Constant	-0.0048	-0.0011	0.0021	0.0122	0.028***	0.019*	0.0034	0.0005	0.005	-0.0034	0.0199	0.0129	-0.0039	-0.0226	-0.0069
	0.5179	0.8748	0.765	0.2427	0.0083	0.0514	0.7808	0.9689	0.6642	0.8316	0.1799	0.3732	0.8268	0.1552	0.6614
Obs.	5689	5689	5689	1072	1072	1072	1393	1393	1393	1676	1676	1676	1548	1548	1548
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-square	0.0868	0.0864	0.0861	0.1181	0.1083	0.1152	0.0751	0.0767	0.0751	0.0884	0.0866	0.0851	0.1225	0.1343	0.1227
F-stats	31.02***	30.86***	30.75***	9.43***	8.64***	9.20***	7.27***	7.42***	7.27***	10.02***	9.82***	9.65***	13.00***	14.33***	13.01***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.67: Interaction Analyses when Dep. Var is Risk-Net Profits Variability-RE-GLS

Variable	(1)Overall 1993-12			(2)1993-97			(3)1998-02			(4)2003-07			(5)2008-12		
Group affiliation dummy	0.0016	-0.0033	-0.0078	0.0212***	-0.0075	0.0081	-0.0077	-0.0024	-0.0102	0.0142	-0.0143	-0.0132	-0.0078	0.031**	-0.0031
	0.8413	0.6199	0.1138	0.0033	0.3934	0.1261	0.4776	0.8099	0.1153	0.4423	0.3121	0.1702	0.6925	0.0118	0.7196
Operating profits	0.0148	0.0154	0.0152	-0.145***	-0.144***	-0.141***	0.105***	0.103***	0.104***	0.102***	0.103***	0.103***	-0.040**	-0.036*	-0.040**
	0.1471	0.1301	0.1371	0.0000	0.000	0.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.035	0.055	0.034
Listage	0.001***	0.0007***	0.0007***	0.0012***	0.0006***	0.0005**	0.0005	0.0004	0.0004*	0.0012**	0.0005	0.0005	0.0004	0.0004	0.0005
	0.0000	0.0000	0.0000	0.0000	0.0082	0.0104	0.1736	0.107	0.0996	0.0243	0.2076	0.1979	0.4587	0.2424	0.1605
Leverage	0.041***	0.045***	0.041***	0.025***	0.017***	0.025***	0.033***	0.037***	0.033***	0.047***	0.048***	0.047***	0.056***	0.075***	0.056
	0.000	0.000	0.000	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Growth	0.0031	0.0029	0.0078**	0.0117***	0.012***	0.021***	-0.006*	-0.006*	-0.007	0.012***	0.011***	0.019***	-0.004	-0.005	-0.003
	0.186	0.2078	0.0177	0.0015	0.001	0.0000	0.082	0.092	0.147	0.005	0.006	0.001	0.351	0.322	0.711
GA* Listage	-0.0005*			-0.0013***			-0.0001			-0.0014*			0.0002		
	0.0820			0.0008			0.7854			0.0565			0.8072		
GA* Leverage		-0.0073			0.015*			-0.0096			-0.0023			-0.04***	
		0.1904			0.1013			0.2990			0.8619			0.0001	
GA* Growth			-0.0096**			-0.0248***			0.0018			-0.0151*			-0.0025
			0.0375			0.0009			0.8161			0.0796			0.8145
Constant	-0.0017	0.0023	0.0046	0.0119	0.0283**	0.02*	0.009	0.0069	0.0107	-0.0027*	0.0154	0.0149	-0.0015	-0.0216	-0.0046
	0.8908	0.8425	0.6877	0.3337	0.0265	0.0971	0.5795	0.6592	0.4885	0.91	0.4969	0.5024	0.9505	0.3005	0.8242
Obs.	5689	5689	5689	1072	1072	1072	1393	1393	1393	1676	1676	1676	1548	1548	1548
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-square	0.0444	0.044	0.0443	0.1084	0.1011	0.108	0.0456	0.0464	0.0456	0.047	0.0449	0.0465	0.0767	0.0869	0.0771
F-stats	15.67***	15.54***	15.66***	8.65***	8.08***	8.62***	4.69***	4.76***	4.69***	5.59***	5.37***	5.53***	8.13***	9.17***	8.18***
Chi-square	34.46***	31.49***	33.78***	27.48***	30.56***	28.60***	50.26***	54.89***	49.73***	2.84***	14.56***	5.82***	18.83***	14.96***	18.26***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

4.2 Group Affiliation, Ownership Structure and Firm Performance

Table 4.68 shows comparative descriptive statistics for both group firms and standalone firms. The study compares the performance measures of group firms with their counterpart standalone firms and it is noticed that group firms underperform than standalone firms in terms of ROS and Tobin's Q and however, these show slightly higher performance than stand alone firms in terms of ROA. Both ROA and ROS are accounting performance measures. However, ROA is used as a measure of financial performance and ROS is used as a measure of operating performance.

The institutional ownership variables like Institutional ownership, domestic private institutional ownership and Government ownership tend to show that institutional investors invest relatively more in group firms than standalone firms in Pakistan. Whereas, ownership disparity seems relatively higher in group firms than standalone firms showing that substantial control enhancing practices are experienced in Pakistani group firms and ownership-control disparity is relatively higher in group firms than standalone firms. Similarly, relational ownership is higher in group firms than standalone firms and however, inside ownership is lower in group firms than standalone firms. Group firms are larger in size and show higher potential of growth and investment opportunities than standalone firms. Group firms finance lesser portion of their assets through debts when compared with standalone firms and further group firms exhibit relatively lower risk.

4.2.1 Descriptive Results

Table 4.69 shows the correlations between variables. The correlations matrix confirms that there is no very high correlation between any of two independent variables.

TABLE 4.68: Comparative Demographics across Group Firms and Standalone Firms

Variable	Firm	Mean	Median	Std. Dev.
ROA	Standalone	0.0313	0.0259	0.1494
	Group	0.0325	0.0296	0.1242
	All	0.0321	0.0285	0.1331
ROS	Standalone	-0.0186	0.0249	0.2299
	Group	-0.0209	0.0258	0.2386
	All	-0.0201	0.0257	0.2357
Tobin's Q	Standalone	1.1630	0.9323	0.8717
	Group	1.0046	0.8842	0.5691
	All	1.0575	0.9014	0.6888
Inside Own	Standalone	0.4127	0.4480	0.2778
	Group	0.3188	0.2813	0.2650
	All	0.3501	0.3322	0.2728
Own Disparity	Standalone	0.0839	0.0000	0.2775
	Group	0.1301	0.0000	0.3366
	All	0.1147	0.0000	0.3188
Inst Own	Standalone	0.1196	0.0808	0.1264
	Group	0.1533	0.1229	0.1432
	All	0.1421	0.1060	0.1387
Domestic Pvt Inst	Standalone	0.0785	0.0345	0.1061
	Group	0.0842	0.0457	0.1067
	All	0.0823	0.0418	0.1065
Govt Inst	Standalone	0.0366	0.0007	0.0642
	Group	0.0596	0.0243	0.0805
	All	0.0519	0.0160	0.0762
Relational Own	Standalone	0.1105	0.0000	0.2036
	Group	0.2166	0.1316	0.2417
	All	0.1812	0.0609	0.2350
Own Concentration	Standalone	0.6148	0.6484	0.1975
	Group	0.5943	0.5772	0.1764
	All	0.6011	0.5953	0.1839
Slack	Standalone	0.0029	0.0114	0.1285
	Group	0.0061	0.0131	0.1095
	All	0.0050	0.0124	0.1161
Listage	Standalone	22.8029	19.0000	11.5558
	Group	27.3799	22.0000	12.2560
	All	25.8532	21.0000	12.2152
Leverage	Standalone	0.7967	0.6990	0.6111
	Group	0.6846	0.6345	0.4343
	All	0.7220	0.6504	0.5028
Size	Standalone	7.0193	7.0452	1.4305
	Group	7.8241	7.7951	1.3842
	All	7.5556	7.5095	1.4499
Growth	Standalone	0.1307	0.1078	0.3529
	Group	0.1755	0.1418	0.3563
	All	0.1605	0.1307	0.3557
Risk	Standalone	0.2222	0.0569	0.6153
	Group	0.1401	0.0573	0.3779
	All	0.1675	0.0572	0.4719
Profitability	Standalone	2.2738	0.9170	6.7552
	Group	2.8791	0.9787	8.4143
	All	2.6772	0.9602	7.9025
Observation	Standalone	477		
	Group	953		
	All	1430		

Table 4.69: Correlation Analyses

Variable	ROA	ROS	Tobin's Q	GR	DR	PR	Inside Own	Own Disparity	Inst Own	Domestic Pvt Inst	Govt Inst	Leverage	Size	Growth	Risk
ROA	1														
ROS	0.699	1													
Tobin's Q	0.016	-0.032	1												
GR	0.005	-0.005	-0.108	1											
DR	0.012	-0.005	-0.032	0.603	1										
PR	-0.066	-0.078	-0.024	0.235	0.290	1									
Inside Own	-0.086	-0.058	-0.097	-0.162	-0.297	-0.353	1								
Own Disparity	0.013	-0.015	-0.035	0.068	0.187	0.790	-0.416	1							
Inst Own	0.102	0.098	0.094	0.115	0.134	-0.065	-0.353	-0.074	1						
Domestic Pvt Inst	0.045	0.060	0.083	0.025	0.085	-0.083	-0.254	-0.091	0.753	1					
Govt Inst	0.056	0.063	0.013	0.142	0.081	-0.005	-0.215	0.002	0.475	-0.055	1				
Leverage	-0.306	-0.256	0.701	-0.105	-0.055	-0.002	-0.008	-0.068	-0.033	-0.022	-0.021	1			
Size	0.153	0.180	-0.183	0.262	0.273	0.084	-0.122	0.019	0.131	0.137	-0.016	-0.166	1		
Growth	0.289	0.257	-0.038	0.059	0.008	0.007	0.019	0.002	-0.022	-0.025	0.000	-0.102	0.053	1	
Risk	-0.282	-0.306	0.145	-0.082	-0.062	-0.034	-0.039	-0.052	-0.009	0.037	-0.056	0.222	-0.119	-0.128	1

All coefficients greater than 0.10 are significant at 1 percent level.

TABLE 4.70: Variance Inflation Factors

Variable	Coefficient variance	Centered VIF
Group affiliation dummy	0.000	1.105
Inside Own	0.000	1.514
Own Disparity	0.000	1.315
Inst Own	0.001	1.241
Domestic Pvt Inst	0.001	1.164
Govt Inst	0.002	1.105
Leverage	0.000	1.091
Size	0.000	1.120
Growth	0.000	1.026
Risk	0.000	1.081
Constant	0.000	NA
Observations	1430	

Further, Variance Inflation Factors procedure is adopted to determine the level of multicollinearity between independent variables. Table 4.70 shows that none of the VIF value for any variable exceeds 2. These VIF results validate that there is no serious multicollinearity in independent variables.

4.2.2 Group Affiliation, Ownership Structure (Inside Ownership, Ownership Disparity and Institutional Ownership) and Firm Performance

Table 4.71, 4.72 and 4.73 reports the OLS regression results indicating the impact of group affiliation and group diversification along with ownership variables on firm performance in Pakistan. The dependent variable is firm performance. The firm performance is measured through accounting as well as market related performance measures. The accounting performance measures include ROA (Return on assets), ROS (Return on sales) and stock market performance measure include Tobin's Q. The independent variables include 2 group affiliation dummies i.e., Group affiliation dummy and Group pyramid dummy; and a Group diversification dummy. The other explanatory variables comprise Inside Own (Inside ownership), Own Disparity (ownership disparity), Inst Own (institutional ownership), Domestic Pvt. Inst (domestic private institutional ownership) and Govt. Inst

(Government institutional ownership) with some control variables like Leverage, Size, Growth and Risk.

Panel A in Table 4.71 presents the results showing the impact of Group affiliation dummy and other ownership and control variables to determine their impact on firm performance. The results indicate that Group affiliation dummy is consistently and significantly negative in all of the regression models. The coefficient signs of Group affiliation dummy are consistent and highly significant in both accounting performance measures of ROA and ROS and stock market performance measure of Tobin's Q. These results clearly suggest that group affiliated firms have lower performance than standalone firms in Pakistan. The results are consistent with the expectations that group firms lapse into the problems of serious agency costs among the shareholders e.g., controlling shareholders and minority shareholders (Claessens et al., 2002; MULLAINATHAN, 2002). The ultimate controllers exercise the entrenched behavior and attempt expropriation of firms' resources at the cost of minority shareholders that is detriment to firm performance (Fisman, 2001; Buysschaert et al., 2004; Morck and Yeung, 2004; Laeven and Levine, 2007).

The findings regarding Inside Own, Own Disparity, Inst Own, Domestic Pvt. Inst and Govt. Inst Own are explained below. Results indicate that Inside Own is consistently negatively related to firm performance in all of the models. These regressions are highly significant in models when dependent variables are ROA and ROS. However, the coefficients are still negative, although these are not significant at conventional level when dependent variable is Tobin's Q. Ownership is concentrated in the firms of Asian countries and insiders with larger stakes in ownership becomes forceful and they may affect firm performance adversely consistent with entrenchment effect (Hansoge and Marisetty, 2011).

The statistics reveal Own Disparity is negatively related to both ROA and ROS and the coefficients are highly significant. However, the relationship is not highly significantly for Tobin's Q. The negative results of Own Disparity are consistent with Agency Theory and Expropriation Hypothesis. The ultimate controllers with least cash flow rights are motivate in tunneling firm resources for their personal

consumption consistent with the incentives effect (Lins, 2003; Joh, 2003; Villalonga and Amit, 2006). Inst Own is positively related to firm performance and the results are strongly significant. These results are consistently signed throughout the models and are in alignment of Agency Theory. However, the coefficients values are significantly higher in case of Tobin's Q results. These findings suggest that institutional investor with greater skills and information possess better monitoring ability, and it seems an influential factors affecting firm performance (Ali Shah et al., 2009; Holderness and Sheehan, 1988; Fazlzadeh et al., 2011).

Similarly, the coefficients of Domestic Pvt. Inst and Govt. Inst variables are consistently positively signed and are significant in most of the models. Again, both domestic private institutional ownership and Govt. institutional ownership variables seem strongly affecting ROA, ROS and Tobin's Q and further, the strength of relationship is stronger in case of Tobin's Q. The findings strongly support the argument that institutional investor is equipped with more market information and ability in monitoring the activities of the board. He is motivated in playing his due role because of his large stake in ownership of the firm which further aligns his interest with minority shareholders, thus affect the firm performance positively (Xu and Wang, 1999).

The control variables include leverage, size, growth and risk. Leverage is significantly negatively related to ROA and ROS (Ma et al., 2006) whereas the opposite is true for Tobin's Q (Hansoge and Marisetty, 2011). The positive performance impacts of leverage are consistent with tax shield on debt argument as well as agency cost theory. The financial leverage brings the firm under the additional monitoring of the financial institutions those are interested with the safeguard of their investment. Firm Size is positively related to all of the three measures of firm performance and however, the coefficients values are higher for Tobin's Q. The results propose that firm size positively affects firm performance and the strength of relationship is higher for Tobin's Q (Carney et al., 2009; Guest and Sutherland, 2009). Firm Growth also shows positive relationship with firm performance (Yu et al., 2009). The relationship is highly significant when dependent variables are ROA and ROS whereas it is insignificant when dependent variable is Tobin's Q.

Risk is inversely related to both ROA and ROS and results are highly significant (Carney et al., 2011). However, the results show an insignificant relationship of firm level with Tobin's Q.

TABLE 4.71: Panel A: Group Affiliation, Inside Ownership, Ownership Disparity . . . and Firm Performance-OLS

Variable	ROA				ROS				Tobin's Q			
Group affiliation dummy	-0.0262***	-0.0231***	-0.0265***	-0.0231***	-0.0512***	-0.0464***	-0.0523***	-0.0471***	-0.145***	-0.1037***	-0.1468***	-0.1041***
	0.0002	0.0009	0.0002	0.0009	0.0000	0.0002	0.0000	0.0002	0.0000	0.0000	0.0000	0.0000
Inside Own	-0.0514***	-0.0427***	-0.0587***	-0.0464***	-0.0711***	-0.0764***	-0.0741***	-0.0784***	-0.0668	-0.0354	-0.0766	-0.0401
	0.0003	0.0035	0.0000	0.0015	0.0047	0.0035	0.0031	0.0026	0.2071	0.5105	0.1475	0.4547
Own Disparity	-0.0204*	-0.0266**	-0.0245**	-0.029**	-0.0486**	-0.0285	-0.0507**	-0.0308	-0.0042	-0.038	-0.0111	-0.0423
	0.0687	0.0202	0.0288	0.0111	0.0155	0.1649	0.0115	0.1314	0.9198	0.3677	0.7921	0.314
Inst Own	0.0546**	0.0385			0.0958**	0.1018**			0.2691***	0.2375***		
	0.0289	0.1167			0.0324	0.0206			0.0045	0.0092		
Domestic Pvt. Inst			0.0112	0.0204			0.0658	0.0787			0.1924	0.2258*
			0.7234	0.5104			0.2434	0.1568			0.1074	0.0506
Govt. Inst			0.051	0.0302			0.1419*	0.1408*			0.3401**	0.2623*
			0.2353	0.4781			0.065	0.0648			0.0349	0.0949
Leverage	-0.0621***	-0.0587***	-0.0624***	-0.0588***	-0.0821***	-0.0762***	-0.0822***	-0.0761***	1.0449***	1.0668***	1.0454***	1.0672***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0075***	0.0119***	0.008***	0.0121***	0.0198***	0.0334***	0.0205***	0.034***	0.1058***	0.0989***	0.1076***	0.0998***
	0.0010	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0911***	0.0879***	0.0907***	0.0878***	0.1397***	0.1337***	0.1394***	0.1335***	0.0302	0.0325	0.0287	0.0317
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3657	0.314	0.3903	0.3249
Risk	-0.0571***	-0.0572***	-0.057***	-0.0574***	-0.1201***	-0.1177***	-0.1196***	-0.1176***	0.0282	0.0219	0.0295	0.0215
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2743	0.3772	0.2559	0.3874
Constant	0.0453**	-0.0417	0.0495**	-0.0396	-0.062*	-0.3203**	-0.0645*	-0.3245***	-0.2295***	-0.3503***	-0.2304***	-0.3557***
	0.0260	0.1207	0.0164	0.1444	0.0891	0.0000	0.0804	0.0000	0.0001	0.0000	0.0001	0.0000
Observation	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430
Sector dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.2209	0.261	0.2186	0.2596	0.2021	0.2443	0.2013	0.2435	0.5892	0.6245	0.5884	0.6240
F-statistics	51.659***	26.2377***	45.4102***	24.8649***	46.2371***	24.1006***	41.0274***	22.907***	257.1694***	119.8121***	227.9433***	113.923***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

Panel B in Table 4.72 demonstrates the regression results of Group pyramid dummy along with ownership variables to see how they affect financial performance of the firm. The findings confirm the above group affiliation results. Group pyramid dummy is consistently negative in all of the regression models; yet the negative coefficient values are higher for Group pyramid dummy. The findings clearly propose that group affiliated firms have lower performance than standalone firms and further, the negative impact of group affiliation is stronger for pyramidal firms when compared with overall group firms. These findings again support to tunneling hypothesis. Divergence between ownership and control is particularly important in pyramidal firms and these firms are prone to expropriation of resources by the dominant controllers to firms where they have higher cash flow rights or to their wholly owned privately held firms (Lemmon and Lins, 2003; King and Santor, 2008).

The performance impacts of ownership variables and control variables remain unchanged except for Own Disparity variable. Contrary to the above results, Own Disparity shows significantly positive relationship with all of the performance measures of ROA, ROS and Tobin's Q. The relationship is not consistent with the expectations. The relationships of remaining variables are similar as these were shown in Panel A explained earlier. Inside Own is negatively related to firm performance. Similarly, Inst Own, Domestic Pvt Inst and Govt Inst variables are positively related to firm financial performance. Leverage variables is significantly negatively related to ROA and ROS whereas the relationship is opposite when dependent variable is Tobin's Q. Size and Growth variables are thoroughly positively related to firm performance and finally, Risk variable is negatively related to firm performance.

TABLE 4.72: Panel B: Group Pyramids, Inside Ownership, Ownership Disparity ... and Firm Performance-OLS

Variable	ROA				ROS				Tobin's Q			
Group pyramid dummy	-0.0854***	-0.0646***	-0.0863***	-0.0649***	-0.1393***	-0.0924***	-0.1394***	-0.0919***	-0.2536***	-0.1332***	-0.2537***	-0.132**
	0.0000	0.0002	0.0000	0.0002	0.0000	0.0032	0.0000	0.0034	0.0001	0.039	0.0001	0.0410
Inside Own	-0.0487***	-0.0392***	-0.0563***	-0.0434***	-0.065***	-0.0674***	-0.0682***	-0.07***	-0.0458	-0.0106	-0.0567	-0.0167
	0.0005	0.0068	0.0001	0.0027	0.0094	0.0096	0.0062	0.007	0.388	0.8437	0.284	0.7547
Own Disparity	0.0416**	0.0201	0.0383**	0.0179	0.0524*	0.0385	0.0506*	0.0358	0.1795***	0.0594	0.1734***	0.0543
	0.0131	0.2362	0.0227	0.2883	0.0822	0.2053	0.0932	0.237	0.0046	0.3429	0.0062	0.3847
Inst Own	0.0459*	0.0321			0.0804*	0.0908**			0.2363**	0.2200**		
	0.0650	0.1912			0.0722	0.0393			0.0131	0.0164		
Domestic Pvt. Inst			0.0073	0.018			0.0608	0.0762			0.1938	0.2293**
			0.8171	0.5627			0.2815	0.1717			0.1072	0.0482
Govt. Inst			0.0279	0.0108			0.0977	0.1053			0.2244	0.1916
			0.5119	0.7995			0.2003	0.1667			0.1637	0.2229
Leverage	-0.0575***	-0.0549***	-0.0578***	-0.055***	-0.0743***	-0.0698***	-0.0744***	-0.0698***	1.0614***	1.0782***	1.0616***	1.0782***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.007***	0.0109***	0.0073***	0.0111***	0.0184***	0.0311***	0.0188***	0.0314***	0.1019***	0.0948***	0.1031***	0.0954***
	0.0017	0.0000	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0902***	0.0873***	0.0899***	0.0871***	0.1379***	0.1321***	0.1376***	0.1319***	0.0251	0.0292	0.024	0.0286
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4546	0.3666	0.4757	0.3774
Risk	-0.056***	-0.0564***	-0.0561***	-0.0567***	-0.1178***	-0.1161***	-0.1177***	-0.1162***	0.0344	0.0252	0.0344	0.0241
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1852	0.312	0.187	0.3353
Constant	0.0301	-0.0472*	0.0352*	-0.0438	-0.0885**	-0.3329***	-0.089**	-0.3348***	-0.315***	-0.4053***	-0.3113***	-0.406***
	0.1390	0.0772	0.0871	0.1055	0.0155	0.0000	0.0162	0.0000	0.0000	0.0000	0.0000	0.0000
Observation	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430
Sector dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.2266	0.2624	0.2245	0.2611	0.2357	0.2415	0.203	0.2405	0.5844	0.6211	0.5835	0.6206
F-statistics	53.3484***	26.4144***	46.9611******	25.0512***	0.7625***	23.7486***	41.4432***	22.5471***	252.1982***	118.1441***	223.4399***	112.33***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

Panel C in Table 4.73 presents the OLS regression results exploring the potential performance impacts of Group diversification dummy, ownership variables and control variables. Like group affiliation dummies, Group diversification dummy is strongly negatively related to all of the performance measures of ROA, ROS and Tobin's Q and results are highly consistent. The findings confirm that diversified group firms underperform to standalone firms in Pakistan. The lower performance of diversified group firms than non-diversified/or least diversified firms is consistent with the findings of Lee et al. (2008) and Purkayastha (2013). The findings are consistent with expropriation hypothesis (MULLAINATHAN, 2002).

The ownership variables and control variables show similar relationship as explained earlier. Inside Own is significantly negatively related to ROA and ROS (Hansoge and Marisetty, 2011) whereas it is still negatively related and however, the relationship is insignificant when dependent variable is Tobin's Q. The negative performance impacts of inside ownership are due to entrenchment effect. Own Disparity is significantly negatively related to both ROA and ROS and yet the statistics show insignificant relationship when dependent variable is Tobin's Q (King and Santor, 2008; Gutiérrez and Pombo, 2009). Inst Own, Domestic Pvt Inst and Govt Inst variables show positive relationships and further, the strength of relationship is greater when dependent variable is Tobin's Q (Xu and Wang, 1999).

The control variables include leverage, size, growth and risk. Leverage is significantly negatively related to both ROA and ROS whereas it is significantly positively related to Tobin's Q. Firm Size is consistently and significantly positively related to all of the performance measures. Firm Growth is positively related whereas Risk variable is negatively related to ROA, ROS and Tobin's Q and the relationships are insignificant in Tobin's Q regression models.

TABLE 4.73: Panel C: Group Diversification, Inside Ownership, Ownership Disparity ... and Firm Performance-OLS

Variable	ROA				ROS				Tobin's Q			
Group diversification dummy	-0.0181***	-0.0216***	-0.0179***	-0.0215***	-0.0409***	-0.0414***	-0.0408***	-0.0416***	-0.0958***	-0.0647***	-0.0952***	-0.0651***
	0.0082	0.0017	0.0092	0.0017	0.0009	0.0008	0.0009	0.0007	0.0002	0.0096	0.0002	0.0093
Inside Own	-0.0533***	-0.0456***	-0.0607***	-0.0494***	-0.0771***	-0.0814***	-0.0802***	-0.0835***	-0.0756	-0.0337	-0.0862	-0.0391
	0.0002	0.0021	0.0000	0.0008	0.0026	0.0022	0.0016	0.0016	0.1615	0.5382	0.1101	0.4735
Own Disparity	-0.0183*	-0.0237**	-0.0224**	-0.0259**	-0.0438**	-0.0228	-0.0458**	-0.0249	0.0068	-0.0286	0.0005	-0.0325
	0.1035	0.0393	0.0470	0.0232	0.0299	0.2670	0.0232	0.2242	0.872	0.5003	0.9899	0.4418
Inst Own	0.0527**	0.0369			0.0928**	0.0985**			0.259***	0.2297**		
	0.0351	0.1326			0.0386	0.0252			0.0066	0.0121		
Domestic Pvt. Inst			0.0150	0.0238			0.0737	0.0854			0.2150*	0.2408**
			0.6342	0.4432			0.1928	0.1249			0.0737	0.0378
Govt. Inst			0.0358	0.0202			0.1132	0.1201			0.2565	0.213
			0.4026	0.6336			0.1394	0.1140			0.1117	0.1749
Leverage	-0.0608***	-0.0577***	-0.0611***	-0.0579***	-0.0797***	-0.0741***	-0.0798***	-0.074***	1.052***	1.0719***	1.0522***	1.072***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.007***	0.0121***	0.0074******	0.0122***	0.0194***	0.0335***	0.0198***	0.034***	0.1043***	0.0973***	0.1056***	0.0979***
	0.0022	0.0000	0.0014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0896***	0.0864***	0.0892***	0.0862***	0.1368***	0.1306***	0.1365***	0.1304***	0.0222	0.0265	0.0210	0.0259
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.5085	0.4123	0.5322	0.4236
Risk	-0.0568***	-0.0573***	-0.0568***	-0.0576***	-0.1196***	-0.1178***	-0.1194***	-0.1179***	0.0306	0.0226	0.0308	0.0216
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2387	0.3637	0.2385	0.3877
Constant	0.0391*	-0.0542**	0.0441**	-0.0515*	-0.0747**	-0.3451***	-0.0755**	-0.3483***	-0.2787***	-0.4061***	-0.2761***	-0.4083***
	0.0552	0.043	0.0326	0.0574	0.0407	0.0000	0.0410	0.0000	0.0000	0.0000	0.0000	0.0000
Observation	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430
Sector dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.2170	0.2604	0.2144	0.2591	0.1988	0.2429	0.1977	0.242	0.5841	0.6218	0.5831	0.6213
F-statistics	50.493***	26.1542***	44.3375***	24.7919***	45.317***	23.9251***	40.133***	22.7281***	251.842***	118.4718***	223.0764***	112.661***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

Table 4.74, 4.75 and 4.76 report the results of random-effect Generalized Least Square estimation models. Panel A in Table 4.74 present the results showing that Group affiliation dummy is consistently negative and these are highly significant for ROA and Tobin's Q. The findings suggest that group firms underperform than their counterpart standalone firms in Pakistan. Both Inside Own and Own Disparity variables are consistently negatively related to all of the performance measures. Inst Own, Domestic Pvt Inst and Govt Inst variables are found insignificantly related to firm performance. These results are highly consistent with the OLS results explained above.

Panel B in Table 4.75 presents that Group pyramid dummy is negatively related to ROA, ROS and Tobin's Q and the results are significant at conventional levels. The findings confirm that pyramidal group firms underperform than standalone firms in Pakistan. Inside Own is negatively related to all of the three performance measures and however, the results are significant only in case of ROA and ROS. Noticeably, Inst Own, Domestic Pvt Inst and Govt Inst variable are found insignificant. Leverage is negatively related to ROA and ROS whereas the relationship is positive when dependent variable is Tobin's Q. Both Size and Growth variables are positively related and Risk variable is negatively related to all of the performance measures. Panel C in Table 4.76 shows that group diversification dummy is negatively related to ROA, ROS and Tobin's Q and the results are significant at conventional levels. The findings confirm OLS results.

The ownership variables show similar statistics consistent with OLS results. Inside Own is negatively related to all of the performance measures. The relationship is highly significant for ROA and ROS regression models. Own Disparity shows negative relationship with all of the performance measures and however, the results are not highly significant. Again, Leverage show mixed results. It shows negative relationship for regression models when dependent variables are ROA and ROS whereas the relationship is positive when dependent variable is Tobin's Q. Both Size and Growth variables show positive whereas Risk variable shows negative relationship with firm performance.

TABLE 4.74: Panel A: Group Affiliation, Inside Ownership, Ownership Disparity . . . and Firm Performance-RE-GLS

Variable	ROA		ROS		Tobin's Q	
Group Affiliation Dummy	-0.0167	-0.0163	-0.0242	-0.0242	-0.1914***	-0.193***
	0.1093	0.1205	0.2267	0.2288	0.0000	0.0000
Inside Own	-0.0436**	-0.0469**	-0.0664*	-0.0724**	-0.0787	-0.0835
	0.0203	0.0125	0.0503	0.0325	0.2422	0.2141
Own Disparity	-0.0254*	-0.0272*	-0.0119	-0.0165	-0.0637	-0.0717
	0.0862	0.0649	0.6539	0.5308	0.2146	0.1588
Inst Own	0.0160	0.0042	0.0548		0.1344	
	0.5839	0.9104	0.2833		0.1546	
Domestic Pvt. Inst		-0.0114		0.0141		0.0855
		0.8342		0.8308		0.4866
Govt. Inst				0.0513		0.2190
				0.5969		0.2348
Leverage	-0.0675***	-0.0675***	-0.0834***	-0.0834***	1.1781***	1.1783***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0089***	0.0088***	0.0234***	0.0234***	0.1518***	0.1524***
	0.0070	0.0076	0.0001	0.0001	0.0000	0.0000
Growth	0.08***	0.0799***	0.1088***	0.1085***	0.0169	0.0162
	0.0000	0.0000	0.0000	0.0000	0.4325	0.4521
Risk	-0.0416***	-0.0418***	-0.0789***	-0.079***	0.0446**	0.0447**
	0.0000	0.0000	0.0000	0.0000	0.0144	0.0143
Constant	-0.0170	-0.0129	-0.2858***	-0.2799***	-0.7229***	-0.7235***
	0.6498	0.7326	0.0000	0.0001	0.0000	0.0000
Observation	1430	1430	1430	1430	1430	1430
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.1888	0.1878	0.1461	0.1449	0.5919	0.5917
F-statistics	17.6319***	16.7381***	13.2273***	12.5309***	104.6254***	99.6157***
Chi-square	18.0422**	17.189**	31.6516***	31.7388***	86.3546***	85.7753***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.75: Panel B: Group Pyramids, Inside Ownership, Ownership Disparity ... and Firm Performance-RE-GLS

Variable	ROA		ROS		Tobin's Q	
Group pyramid dummy	-0.0561**	-0.0567**	-0.0802*	-0.0804*	-0.1529*	-0.1521*
	0.0169	0.0161	0.0587	0.0586	0.0633	0.0652
Inside Own	-0.0412**	-0.0448**	-0.063*	-0.0692**	-0.0527	-0.0575
	0.0271	0.0163	0.0626	0.0407	0.4333	0.3918
Own Disparity	0.0157	0.0144	0.0473	0.0431	0.0496	0.0421
	0.4890	0.5244	0.2488	0.2936	0.5349	0.5987
Inst Own	0.0130		0.0507		0.1269	
	0.6571		0.3221		0.1797	
Domestic Pvt. Inst		0.0042		0.0142		0.0957
		0.9103		0.8299		0.4373
Govt. Inst		-0.0231		0.0350		0.1678
		0.6708		0.7184		0.3634
Leverage	-0.0657***	-0.0657***	-0.0815***	-0.0815***	1.1839***	1.1841***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0083***	0.0083**	0.0225***	0.0225***	0.1465***	0.1469***
	0.0098	0.0105	0.0002	0.0002	0.0000	0.0000
Growth	0.0799***	0.0798***	0.1085***	0.1082***	0.0156	0.0151
	0.0000	0.0000	0.0000	0.0000	0.4679	0.4829
Risk	-0.0411***	-0.0413***	-0.0778***	-0.078***	0.0462**	0.046**
	0.0000	0.0000	0.0000	0.0000	0.0113	0.0119
Constant	-0.0211	-0.0163	-0.2911***	-0.2845***	-0.8406***	-0.8409***
	0.5708	0.6631	0.0000	0.0001	0.0000	0.0000
Observation	1430	1430	1430	1430	1430	1430
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.1906	0.1898	0.1467	0.1454	0.5892	0.5889
F-statistics	17.8243***	16.937***	13.2794***	12.581***	103.4584***	98.4786***
Chi-square	18.4195***	17.5655***	30.6067***	30.6243***	91.8433***	92.4552***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.76: Panel C: Group Diversification, Inside Ownership, Ownership Disparity ... and Firm Performance-RE-GLS

Variable	ROA		ROS		Tobin's Q	
Group diversification dummy	-0.0187*	-0.0185*	-0.0326*	-0.0323	-0.1215***	-0.1215***
	0.0730	0.0768	0.1027	0.1064	0.0085	0.0086
Inside Own	-0.0462**	-0.0496***	-0.0716**	-0.0776**	-0.0797	-0.0845
	0.0149	0.009	0.037	0.0236	0.241	0.2129
Own Disparity	-0.0235	-0.0253*	-0.0088	-0.0134	-0.0558	-0.0633
	0.1138	0.0877	0.7403	0.6125	0.2788	0.2153
Inst Own	0.0155		0.0546		0.1321	
	0.5953		0.2860		0.1625	
Domestic Pvt. Inst		0.0057		0.0161		0.0948
		0.8793		0.8078		0.4412
Govt. Inst		-0.016		0.0458		0.1861
		0.7687		0.6368		0.3129
Leverage	-0.0672***	-0.0672***	-0.0832***	-0.0832***	1.1809***	1.1811***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0089***	0.0089***	0.0237***	0.0237***	0.1493***	0.1498***
	0.0065	0.007	0.0001	0.0001	0.0000	0.0000
Growth	0.0795***	0.0794***	0.1081***	0.1078***	0.0146	0.014
	0.0000	0.0000	0.0000	0.0000	0.4979	0.5153
Risk	-0.0417***	-0.0419***	-0.0788***	-0.079***	0.0447**	0.0445**
	0.0000	0.0000	0.0000	0.0000	0.0143	0.0148
Constant	-0.0237	-0.0193	-0.2948***	-0.2886***	-0.8178***	-0.8183***
	0.5246	0.6079	0.0000	0.0000	0.0000	0.0000
Observation	1430	1430	1430	1430	1430	1430
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.1891	0.1881	0.1465	0.1453	0.5899	0.5896
F-statistics	17.6571***	16.7679***	13.2649***	12.5646***	103.7567***	98.763***
Chi-square	17.6251***	16.9007***	29.9517***	30.1638***	89.6775***	90.2071***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

4.2.2.1 Group Affiliation Interaction Analyses

Using OLS, Table 4.77 demonstrates the group affiliation interaction analyses when industry dummies are not included in the regression models. Similarly, Table 4.78 presents the group affiliation interaction analyses results when industry dummies are included in the regression models. The results of interaction between group affiliation and Inside Own indicate that inside ownership negatively affect the performance of standalone firms and it does not affect significantly differently the performance of group firms as shown by insignificant coefficients of GA*Inside Own. The coefficient of Own Disparity is show mixed signs whereas GA*Own Disparity seem significantly negatively related to ROA, ROS and Tobin's Q. The findings suggest that ownership disparity harms the financial performance of group affiliated firms and however, it does not affect significantly the performance of standalone firms. The adverse performance impacts of ownership disparity are consistent with the expectations because business groups' structure enable ultimate controllers achieve control with least cash flow rights through complex pyramidal ownership structures which cause divergence between ownership and control. These firms are prone to managerial entrenchment and facing higher agency problems among the controlling shareholders and external shareholders (Claessens et al., 2002; Lan and Wang, 2004; Omran, 2009; Bae et al., 2002; Chang, 2003b).

The results of interaction between group affiliation and institutional ownership report that Inst Own is significantly negatively related to ROA and ROS whereas it is insignificantly positively related to Tobin's Q. The GA*Inst Own is significantly positively related to firm performance and however, the results are highly pronounced for ROA and ROS. Noticeably, consistent with expectations, the results reveal that institutional investor play an active role in monitoring the management and diluting the managerial entrenchment in group firms. However, institutional ownership is not influential in affecting financial performance positively for standalone firms in Pakistan. Moreover, the coefficient of Domestic Pvt. Inst is significantly negative whereas interaction between group affiliation and Domestic Pvt. Inst is consistently and significantly positive in all of the regression models. The results argue that institutional investor making significantly chunk of

investment in the firm and is keenly interested with the safeguard and growth of his investment. The representation of domestic private institutional investors in the board having greater monitoring ability and motivation enhance the board capability and further aligned their interests with external shareholders and helps in reducing agency conflicts, hence they contribute very positively the financial performance of group firms. However, the interactive analyses of group affiliation and Government ownership reveal that it does not appear influencing significantly differently the performance of group firms.

Table 4.79 reports the group affiliation interaction analyses using random-effect Generalized Least Square estimations. The interactive results of inside ownership, ownership disparity, institutional ownership and domestic private institutional ownership are similar to above discussed OLS results. However, the estimations show that Government ownership is significantly negatively related to Tobin's Q in standalone firms whereas the relationship is significantly positive for group firms. The OLS regression results show insignificant relationship as discussed above.

TABLE 4.77: Panel A: Interaction between Group Affiliation and Inside Ownership, Ownership Disparity ... when Dep. Variable is Firm Performance-OLS

Variable	ROA			ROS				Tobin's Q						
GA dummy	-0.035***	-0.018**	-0.047***	-0.042***	-0.025***	-0.053**	-0.044***	-0.085***	-0.082***	-0.056***	-0.178***	-0.132***	-0.159***	-0.187***	-0.127***
	0.0025	0.0105	0.0000	0.0000	0.0017	0.0108	0.0007	0.0000	0.0000	0.0001	0.0000	0.0000*	0.0000	0.0000	0.0000
Inside Own	-0.066***	-0.048***	-0.050***	-0.058***	-0.058***	-0.075***	-0.068***	-0.070***	-0.073***	-0.073***	-0.1204	-0.0630	-0.0669	-0.0779	-0.0787
	0.0014	0.0005	0.0003	0.0000	0.0000	0.0433	0.0064	0.0050	0.0031	0.0033	0.1230	0.2351	0.2068	0.1399	0.1368
Own Disparity	-0.0199*	0.0383*	-0.0183*	-0.0231**	-0.0247**	-0.0484**	0.0043	-0.0453**	-0.0479**	-0.0497**	-0.0027	0.0862	-0.0028	-0.0072	-0.0155
	0.0753	0.0605	0.1010	0.0390	0.0277	0.0159	0.9070	0.0238	0.0165	0.0135	0.9482	0.2623	0.9478	0.8638	0.7136
Inst Own	0.0556**	0.0528**	-0.0687			0.0961**	0.094**	-0.1002			0.2722***	0.267***	0.1859		
	0.0262	0.0338	0.1169			0.0321	0.0353	0.2025			0.0041	0.0048	0.2603		
Domestic Pvt. Inst				-0.1221**	0.0108				-0.1924**	0.0672				-0.1524	0.1862
				0.0192	0.7321				0.0390	0.2342				0.4367	0.1195
Govt. Inst				0.0546	0.0715				0.1489	0.0616				0.3493**	0.6968**
				0.2026	0.3999				0.0520	0.6853				0.0301	0.0289
GA*Inside Own	0.0243					0.0067					0.0856				
	0.3202					0.8788					0.3499				
GA*Own Disparity		-0.077***					-0.069*					-0.119			
		0.0006					0.0856					0.1604			
GA* Inst Own			0.1737***					0.2761***					0.1185		
			0.0006					0.0025					0.5384		
GA* Domestic Pvt. Inst				0.2016***					0.3909***					0.5288**	
				0.0014					0.0005					0.0266	
GA*Govt. Inst					-0.0272					0.1062					-0.4724
					0.778					0.540					0.194
Leverage	-0.062***	-0.060***	-0.061***	-0.062***	-0.062***	-0.082***	-0.080***	-0.081***	-0.082***	-0.081***	1.043***	1.047***	1.045***	1.043***	1.044***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.007***	0.007***	0.006***	0.007***	0.008***	0.019***	0.020***	0.018***	0.018***	0.020***	0.106***	0.105***	0.105***	0.105***	0.107***
	0.0008*	0.0006*	0.0043*	0.0020*	0.0005*	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000**	0.0000**	0.0000**	0.0000**	0.0000**
Growth	0.091***	0.091***	0.089***	0.089***	0.090***	0.139***	0.139***	0.137***	0.137***	0.139***	0.0299	0.0301	0.029	0.027	0.030
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3698	0.3668	0.3751	0.4095	0.3676
Risk	-0.057***	-0.057***	-0.055***	-0.055***	-0.057***	-0.120***	-0.120***	-0.117***	-0.115***	-0.119***	0.026	0.028	0.029	0.034	0.030
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.298	0.277	0.259	0.188	0.243
Constant	0.0504	0.0365	0.0659	0.0655	0.0487	-0.0606	-0.0700	-0.0293	-0.0333	-0.0614	-0.2089	-0.2392	-0.2167	-0.1902	-0.2424
	0.0164	0.0742	0.0019	0.0020	0.0194	0.1069	0.0569	0.4396	0.3778	0.0994	0.0007	0.0000	0.0004	0.0018	0.0000
Obs.	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430
Sector dummy	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Adj. R-square	0.2209	0.2268	0.2268	0.2237	0.2181	0.2015	0.2032	0.2066	0.2075	0.2010	0.5891	0.5895	0.5890	0.5895	0.5886
F-stats	46.0286***	47.5785***	47.5643***	42.16***	40.85***	41.07***	41.48***	42.35***	38.42***	36.94***	228.6***	228.9***	228.5***	206.2***	205.4***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.78: Panel B: Interaction between Group Affiliation and Inside Ownership, Ownership Disparity ... when Dep. Variable is Firm Performance-OLS (Continued)

Variable	ROA					ROS					Tobin'sQ				
Group affiliation dummy	-0.030**	-0.018**	-0.043***	-0.037***	-0.025***	-0.034	-0.046***	-0.084***	-0.078***	-0.055***	-0.118***	-0.104***	-0.122***	-0.138***	-0.112***
	0.010	0.012	0.000	0.000	0.001	0.105	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.000
Inside Own	-0.054**	-0.041***	-0.043***	-0.047***	-0.046***	-0.057	-0.076***	-0.077***	-0.081***	-0.0775***	-0.058	-0.035	-0.035	-0.067	-0.046
	0.010	0.004	0.003	0.001	0.001	0.131	0.003	0.003	0.001	0.003	0.452	0.509	0.505	0.192	0.380
Own Disparity	-0.026**	0.014	-0.024**	-0.028**	-0.028**	-0.028	-0.026	-0.025	-0.028	-0.0293	-0.0378	-0.0408	-0.036	-0.050	-0.044
	0.020	0.472	0.029	0.013	0.012	0.162	0.478	0.218	0.159	0.152	0.370	0.592	0.389	0.220	0.293
Inst Own	0.0391	0.037	-0.077*			0.1008**	0.1017**	-0.115			0.2385***	0.2375***	0.129		
	0.111	0.128	0.073			0.022	0.020	0.136			0.009	0.009	0.419		
Domestic Pvt. Inst				-0.099*	0.021				-0.188**	0.081				-0.118	0.221*
				0.0536	0.4951				0.0402	0.1455				0.5326	0.0554
Govt. Inst GA* Inside Own				0.0345	-0.0195				0.1504**	-0.0074					
				0.4167	0.8167				0.0477	0.9610					
	0.0182					-0.0306					0.0368				
	0.4542					0.4821					0.6809				
GA*Own Disparity		-0.0552**					-0.0031					0.0036			
		0.0157					0.9398					0.9656			
GA* Inst Own			0.1645***					0.3077***					0.1542		
			0.0012					0.0007					0.4116		
GA* Domestic Pvt. Inst				0.1839***					0.4105***					0.4991**	
				0.0036					0.0003					0.0329	
GA* Govt. Inst					0.0663					0.1975					0.2297
					0.4940					0.2548					0.2036
Leverage	-0.059***	-0.057***	-0.058***	-0.059***	-0.058***	-0.075***	-0.076***	-0.075***	-0.076***	-0.075***	1.066***	1.066***	1.067***	1.064***	1.067***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Size	0.012***	0.011***	0.011***	0.011***	0.012***	0.033***	0.033***	0.032***	0.032***	0.033***	0.099***	0.098***	0.098***	0.097***	0.099***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Growth	0.087***	0.087***	0.087***	0.087***	0.087***	0.133***	0.133***	0.131***	0.132***	0.133***	0.032	0.032	0.031	0.029	0.030
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.314	0.314	0.324	0.355	0.337
Risk	-0.057***	-0.057***	-0.055***	-0.055***	-0.057***	-0.117***	-0.117***	-0.115***	-0.114***	-0.118***	0.0213	0.021	0.023	0.022	0.020
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.390	0.377	0.353	0.360	0.418
Constant	-0.037	-0.042	-0.024	-0.027	-0.038	-0.328***	-0.320***	-0.288***	-0.296***	-0.3198***	-0.339***	-0.350***	-0.335***	-0.291***	-0.340***
	0.180	0.113	0.367	0.323	0.162	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Obs.	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-square	0.2608	0.2636	0.2660	0.2636	0.2594	0.2440	0.2438	0.2499	0.2501	0.2437	0.6242	0.6242	0.6244	0.6245	0.6237
F-stats	25.0072***	25.3531***	25.6615***	24.24***	23.74***	22.96***	22.93***	23.67***	22.65***	21.92***	114.0***	114.0***	114.1***	114.1***	113.7***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.79: Interaction between Group Affiliation and Inside Ownership, Ownership Disparity ... when Dep. Variable is Firm Performance-RE-GLS

Variable	ROA					ROS					Tobin'sQ				
Group affiliation dummy	-0.0153 0.3661	-0.0125 0.2478	-0.032** 0.010	-0.030** 0.012	-0.0150 0.2053	0.0084 0.7910	-0.0281 0.1737	-0.060** 0.012	-0.054** 0.016	-0.0323 0.148	-0.176*** 0.009	-0.185*** 0.0001	-0.238*** 0.000	-0.214*** 0.000	-0.267*** 0.000
Inside Own	-0.041 0.139	-0.041** 0.025	-0.045** 0.016	-0.048** 0.010	-0.046** 0.012	-0.0154 0.763	-0.068** 0.045	-0.070** 0.038	-0.074** 0.027	-0.073** 0.030	-0.0552 0.599	-0.0759 0.260	-0.0854 0.205	-0.0845 0.208	-0.1008 0.132
Own Disparity	-0.025* 0.085	0.014 0.629	-0.025* 0.088	-0.026* 0.071	-0.027* 0.063	-0.013 0.620	-0.049 0.361	-0.012 0.643	-0.015 0.557	-0.015 0.556	-0.064 0.210	0.000 0.993	-0.066 0.195	-0.071 0.162	-0.066 0.190
Inst Own	0.0159 0.5856	0.0173 0.5535	-0.0736 0.1498			0.0541 0.2902	0.0531 0.2995	-0.1446 0.1082			0.1344 0.1549	0.1391 0.1419	-0.1307 0.4390		
Domestic Pvt. Inst				-0.1075* 0.0757	0.0041 0.9123				-0.2266** 0.0331	0.0138 0.8340				-0.0938 0.6383	0.0782 0.5220
Govt. Inst				-0.0085 0.8756	0.0139 0.9026				0.0566 0.5587	-0.1016 0.6221				0.2214 0.2296	-1.213*** 0.003
GA* Inside Own	-0.0037 0.9112					-0.0816 0.1831					-0.0371 0.7694				
GA*Own Disparity		-0.0503 0.1161					0.0469 0.4260					-0.0792 0.5118			
GA*Inst Own			0.1293** 0.0323					0.2861*** 0.0071					0.3751* 0.0588		
GA* Domestic Pvt. Inst				0.1781** 0.0185					0.3835*** 0.0039					0.2837 0.2541	
GA* Govt. Inst					-0.0328 0.798					0.1949 0.401					1.7678 0.000
Leverage	-0.0674*** 0.000	-0.0670*** 0.000	-0.066*** 0.000	-0.067*** 0.000	-0.067*** 0.000	-0.0829*** 0.000	-0.0837*** 0.000	-0.082*** 0.000	-0.082*** 0.000	-0.083*** 0.000	1.1784*** 0.000	1.1784*** 0.000	1.179*** 0.000	1.179*** 0.000	1.177*** 0.000
Size	0.008*** 0.007	0.008*** 0.007	0.008*** 0.008	0.008*** 0.009	0.008*** 0.007	0.022*** 0.000	0.023*** 0.000	0.023*** 0.000	0.023*** 0.000	0.023*** 0.000	0.151*** 0.000	0.158*** 0.000	0.151*** 0.000	0.151*** 0.000	0.152*** 0.000
Growth	0.080*** 0.0000	0.080*** 0.0000	0.079*** 0.0000	0.079*** 0.0000	0.079*** 0.0000	0.108*** 0.0000	0.108*** 0.0000	0.108*** 0.0000	0.107*** 0.0000	0.108*** 0.0000	0.016 0.4357	0.017 0.4278	0.015 0.4623	0.015 0.4708	0.015 0.4699
Risk	-0.041*** 0.000	-0.041*** 0.000	-0.041*** 0.000	-0.041*** 0.000	-0.041*** 0.000	-0.078*** 0.000	-0.079*** 0.000	-0.077*** 0.000	-0.077*** 0.000	-0.079*** 0.000	0.044** 0.014	0.045** 0.013	0.045** 0.011	0.045** 0.013	0.042** 0.019
Constant	-0.017 0.640	-0.018 0.621	-0.005 0.878	-0.003 0.924	-0.013 0.721	-0.306*** 0.000	-0.284*** 0.000	-0.261*** 0.000	-0.261*** 0.000	-0.275*** 0.000	-0.734*** 0.000	-0.726*** 0.000	-0.689*** 0.000	-0.708*** 0.000	-0.676*** 0.000
Obs.	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-square	0.1882	0.1899	0.1914	0.1906	0.1872	0.1464	0.1457	0.1500	0.1494	0.1446	0.5917	0.5918	0.5926	0.5916	0.5952
F-stats	16.77***	16.95***	17.10***	16.29***	15.95***	12.67***	12.60***	13.01***	12.40***	11.97***	99.61***	99.67***	99.9751***	95.09***	96.51***
Chi-square	19.78***	18.87***	22.59***	18.31***	22.70***	31.06***	31.82***	37.85***	35.46***	37.71***	86.65***	89.13***	87.95***	88.11***	95.03***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

4.2.3 Group Affiliation, Ownership Structure (Relational Ownership, Ownership Concentration and Institutional Ownership) and Firm Performance

Table 4.80, 4.81 and 4.82 presents the results of OLS regression models. The dependent variable is firm performance which is measured through ROA (Return on assets), ROS (Return on sales) and Tobin's Q. The analyses are done across various panels e.g., A, B and C. Panel A and B represent Group affiliation dummy and Group pyramid dummy analyses. Similarly, Panel C signifies Group diversification dummy results. The major explanatory variables include Relational Own (Relational ownership), Own Concentration (ownership concentration), Inst Own (institutional ownership), Domestic Pvt. Inst (domestic private institutional ownership) and Govt. Inst (Government institutional ownership) along with control variables like Leverage, Size, Growth and Risk.

The results of Panel A in Table 4.80 demonstrate that Group affiliation dummy is significantly negatively related to ROA, ROS and Tobin's Q. The findings clearly suggest that group affiliates underperform their counterpart standalone firms (Ma et al., 2006). The coefficients of Relational Own are consistently positively signed and the results are highly pronounced when dependent variables are ROA and Tobin's Q. The results are inconsistent with earlier study of Ali and Saeed (2011). Own Concentration is negatively related to ROA and ROS and the coefficients are significant at conventional levels. However, the coefficient signs are mixed in regressions when dependent variable is Tobin's Q. These are negatively signed in some regressions whereas positively signed in some others. The positive relationship is significant in 1 model as well. The positive relationship of ownership concentration with firm performance is consistent with the earlier studies which suggest that concentrated ownership substitute for weak legal system in the countries with deficient legal systems (Xu and Wang, 1999; Javid and Iqbal, 2010; Barzegar and Babu, 2008). However, negative relationship of ownership concentration is also consistent with the studies of Yu et al. (2009) and Ma et al. (2006). Inst Own is positively related to all of the performance measures and results are

highly significant. In the same lines, both Domestic Pvt. Inst and Govt. Inst affect significantly positively the performance of firms. The positive relationship is significant for ROA, ROS and Tobin's Q (Barzegar and Babu, 2008).

The regression models include some control variables like leverage, size, growth and risk. The coefficients of Leverage are negative when dependent variables are ROA and ROS (Carney et al., 2009) whereas these are positive for Tobin's Q analyses (Hansoge and Marisetty, 2011). The results are highly significant in all of the models. The Size of firm shows significantly positive relationship with all of the performance measures (Guest and Sutherland, 2009). The Growth of firm also shows consistently positive relationship with firm performance (Yu et al., 2009). However, the relationship is visibly significant for ROA and ROS only. The results show a significantly negative impact of Risk variable on accounting performance measures of ROA and ROS (Carney et al., 2011). Though, it doesn't exert a significant relationship effect on Tobin's Q.

TABLE 4.80: Panel A: Group Affiliation, Relational Ownership, Ownership Concentration . . . and Firm Performance-OLS

Variable	ROA				ROS				Tobin's Q			
Group affiliation dummy	-0.0267***	-0.0231***	-0.0263***	-0.0224***	-0.0497***	-0.0452***	-0.0501***	-0.0449***	-0.1509***	-0.109***	-0.1508***	-0.1077***
	0.0002	0.0011	0.0002	0.0016	0.0001	0.0003	0.0001	0.0004	0.0000	0.0000	0.0000	0.0000
Relational Own	0.0270*	0.0167	0.0247*	0.014	0.0005	0.0203	-0.0034	0.0144	0.1085	0.0625	0.097*	0.0525
	0.0604	0.2650	0.0869	0.3514	0.9830	0.4487	0.8943	0.5907	0.0466	0.2579	0.0756	0.3418
Own Concentration	-0.0365**	-0.0417**	-0.0366**	-0.041**	-0.0987**	-0.1096***	-0.095***	-0.1053***	0.0344	-0.0211	0.0438	-0.0126
	0.0440	0.0226	0.0451	0.0259	0.0023	0.0008	0.0036	0.0014	0.6116	0.7534	0.5209	0.8521
Inst Own	0.0891***	0.0657***			0.1359***	0.1374***			0.3325***	0.277***		
	0.0001	0.0041			0.0009	0.0008			0.0001	0.0011		
Domestic Pvt. Inst			0.05*	0.0479			0.1051**	0.1102**			0.2673**	0.2685**
			0.0956	0.1096			0.0497	0.0392			0.0191	0.0159
Govt. Inst			0.0895**	0.0583			0.1813**	0.1758**			0.4084***	0.297*
			0.0325	0.1591			0.0152	0.0175			0.009	0.0514
Leverage	-0.0602***	-0.0569***	-0.0603***	-0.0569***	-0.08***	-0.0735***	-0.08***	-0.0733***	1.0484***	1.069***	1.0494***	1.0696***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0074***	0.0118***	0.0081***	0.0121***	0.0197***	0.0328***	0.0207***	0.0336***	0.105***	0.0986***	0.1075***	0.0997***
	0.0013	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0915***	0.088***	0.0909***	0.0876***	0.1399***	0.1336***	0.1394***	0.1333***	0.0320	0.0334	0.0299	0.0322
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3375	0.3007	0.3702	0.3178
Risk	-0.0559***	-0.056***	-0.0554***	-0.056***	-0.1179***	-0.1165***	-0.1172***	-0.1162***	0.0292	0.0231	0.0311	0.023
	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.2561	0.3504	0.2281	0.3541
Constant	0.0366*	-0.0435	0.0354	-0.0446	-0.0406	-0.2897***	-0.0481	-0.2983***	-0.2974***	-0.3766***	-0.3118***	-0.3899***
	0.0993	0.1223	0.1157	0.1178	0.3055	0.00000	0.2314	0.00000	0.00000	0.00000	0.00000	0.00000
Observation	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430
Sector dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.2168	0.2586	0.2117	0.256	0.2025	0.2459	0.201	0.2443	0.5902	0.6246	0.5891	0.6239
F-statistics	50.4351***	25.9252***	43.6498***	24.4189***	46.3639***	24.2936***	40.936***	23.0024***	258.2442***	119.8641***	228.6173***	113.8952***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

The results of Panel B in 4.81 show that Group pyramid dummy is consistently negative in all of the models and the results are highly significant. The findings reveal that pyramidal group firms tend to show lower financial performance than their corresponding standalone firms in Pakistan. Relational Own is consistently positively related whereas Own Concentration is negatively related to firm performance and the results are significant at conventional levels in most of the regression models. These results are highly consistent with OLS results. Similarly, Inst Own, Domestic Pvt Inst and Govt Inst variables are positively related to firm performance indicating a reasonable role of institutional investors in affecting firm performance in Pakistan.

Consistent with OLS results, Leverage is negatively related to both accounting performance variables of ROA and ROS and however, it is negatively related to Tobin's Q. Similarly, firm Size and Growth variables are consistently positively related to firm performance. And finally, Risk variable is negatively related to firm performance.

Panel C in Table 4.82 highlights that Group diversification dummy is significantly negatively related to all of the performance measures of ROA, ROS and Tobin's Q. The findings propose that diversified group firms perform lower than standalone firms. The findings confirm that Relational Own is positively and Own Concentration is negatively related to firm performance. Further, all of the three institutional ownership variables including Inst Own, Domestic Pvt Inst and Govt Inst show positive relationships with firm performance. Moreover, consistent with the results presented in Panel A and B, Leverage, Size, Growth and Risk variables show similar results.

TABLE 4.81: Panel B: Group Pyramids, Relational Ownership, Ownership Concentration ... and Firm Performance-OLS

Variable	ROA				ROS				Tobin's Q			
Group pyramid dummy	-0.071***	-0.0602***	-0.0715***	-0.0605***	-0.0887***	-0.0382	-0.0881***	-0.037	-0.2403***	-0.1658***	-0.2374***	-0.1639***
	0.0000	0.0001	0.0000	0.0001	0.0007	0.1559	0.0008	0.1703	0.0000	0.0029	0.0000	0.0033
Relational Own	0.0757***	0.0549***	0.0746***	0.0535***	0.0544	0.0294	0.0508	0.0238	0.2485***	0.1453**	0.2383***	0.1377*
	0.0001	0.004	0.0001	0.0053	0.1052	0.3918	0.1316	0.4891	0.0005	0.0407	0.0009	0.0535
Own Concentration	-0.0195	-0.0268	-0.0205	-0.0271	-0.0739**	-0.091***	-0.0714**	-0.088***	0.108	0.0346	0.1136*	0.0394
	0.282	0.1411	0.2622	0.1395	0.0232	0.0055	0.0294	0.0076	0.1131	0.6074	0.0983	0.5604
Inst Own	0.0762***	0.0534**			0.1152***	0.1193***			0.2779***	0.2323***		
	0.0009	0.0188			0.0050	0.0035			0.0015	0.0062		
Domestic Pvt. Inst			0.0402	0.0402			0.0931*	0.1016*			0.2428**	0.2491**
			0.1800	0.1780			0.0832	0.0584			0.0343	0.0257
Govt. Inst			0.0621	0.0319			0.1335*	0.1381*			0.2715*	0.1934
			0.1329	0.4375			0.0716	0.0616			0.0814	0.2039
Leverage	-0.0567***	-0.0538***	-0.0568***	-0.0538***	-0.075***	-0.0699***	-0.0751***	-0.0699***	1.0617***	1.0792***	1.0623***	1.0793***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0059***	0.0102***	0.0066***	0.0104***	0.0168***	0.0299***	0.0175***	0.0305***	0.0995***	0.0931***	0.1012***	0.0938***
	0.0078	0.0000	0.0034	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0907***	0.0874***	0.0902***	0.0871***	0.138***	0.1316***	0.1375***	0.1312***	0.0272	0.0308	0.0257	0.0299
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4161	0.341	0.4445	0.3554
Risk	-0.0563***	-0.0566***	-0.0561***	-0.0568***	-0.1178***	-0.1158***	-0.1174***	-0.1157***	0.0301	0.0223	0.0308	0.0214
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2451	0.3699	0.2362	0.3908
Constant	0.0172	-0.0497*	0.0177	-0.0486*	-0.0682*	-0.3034***	-0.0728*	-0.3094***	-0.4133***	-0.4338***	-0.4202***	-0.4395***
	0.439	0.0763	0.4319	0.0864	0.0876	0.0000	0.0722	0.0000	0.0000	0.0000	0.0000	0.0000
Observation	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430
Sector dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.2218	0.2615	0.2173	0.2593	0.2003	0.2401	0.1986	0.2386	0.586	0.6222	0.5849	0.6216
F-statistics	51.9158***	26.2985***	45.0697***	24.8201***	45.7294***	23.5708***	40.3366***	22.3201***	253.8548***	118.6625***	224.6874***	112.7873***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.82: Panel C: Group Diversification, Relational Ownership, Ownership Concentration . . . and Firm Performance-OLS

Variable	ROA				ROS				Tobin's Q			
Group diversification dummy	-0.0171**	-0.0214***	-0.0158**	-0.021***	-0.0386***	-0.0385***	-0.0374***	-0.0378***	-0.0955***	-0.0697***	-0.0925***	-0.0686***
	0.0134	0.0019	0.0221	0.0026	0.0018	0.0018	0.0024	0.0021	0.0002	0.0055	0.0003	0.0063
Relational Own	0.0257*	0.0184	0.0232	0.0159	0.0021	0.0216	-0.0021	0.016	0.0993*	0.0514	0.0885	0.0433
	0.0803	0.225	0.1162	0.2943	0.9369	0.4268	0.9356	0.5546	0.075	0.3599	0.1135	0.441
Own Concentration	-0.0371**	-0.044**	-0.0371**	-0.0434**	-0.1026***	-0.1127***	-0.0988***	-0.1086***	0.0329	-0.0183	0.0423	-0.0109
	0.0424	0.0168	0.0445	0.0191	0.0017	0.0006	0.0027	0.001	0.6321	0.7876	0.5414	0.8732
Inst Own	0.0874***	0.0648***			0.1351***	0.1345***			0.3226***	0.2639***	0.2895**	
	0.0002	0.0046			0.0010	0.0010			0.0003	0.002	0.0118	
Domestic Pvt. Inst			0.0538*	0.0515*			0.1139**	0.1163**			0.2895**	0.2788**
			0.0744	0.0859			0.0340	0.0300			0.0118	0.0127
Govt. Inst			0.075*	0.0496			0.1567**	0.157**			0.328**	0.2448
			0.0721	0.2289			0.0350	0.0331			0.0359	0.1076
Leverage	-0.059***	-0.0559***	-0.0591***	-0.056***	-0.0777***	-0.0715***	-0.0778***	-0.0713***	1.0554***	1.0739***	1.0562***	1.0742***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0068***	0.0119***	0.0074***	0.0121***	0.0191***	0.0328***	0.0199***	0.0334***	0.1038***	0.0971***	0.1057***	0.0979***
	0.0030	0.0000	0.0014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0899***	0.0864***	0.0894***	0.0861***	0.137***	0.1307***	0.1365***	0.1303***	0.0233	0.0269	0.0216	0.026
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4881	0.4055	0.5203	0.4219
Risk	-0.0554***	-0.0562***	-0.0552***	-0.056***	-0.1174***	-0.1167***	-0.117***	-0.1166***	0.032	0.0235	0.0329	0.0228
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2169	0.3431	0.2065	0.36
Constant	0.0303	-0.0548*	0.0302	-0.0548*	-0.0526	-0.3111***	-0.0584	-0.3181***	-0.3513***	-0.4296***	-0.3624***	-0.4388***
	0.1728	0.0514	0.1803	0.054	0.1844	0.0000	0.1466	0.0000	0.0000	0.0000	0.0000	0.0000
Observation	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430
Sector dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.2123	0.2581	0.2071	0.2556	0.1993	0.2442	0.1974	0.2426	0.5846	0.6219	0.5833	0.6213
F-statistics	49.1298***	25.8551***	42.4629***	24.359***	45.4715***	24.0902***	40.0594***	22.8001***	252.363***	118.5052***	223.2831***	112.638***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

Tables 4.83, 4.84 and 4.85 present the results of random-effect Generalized Least Square. The findings shown in Panel A of Table 4.83 indicate that Group affiliation dummy is consistently negatively related to firm performance, though results are significant for Tobin's Q analyses only. These findings again corroborate the lower performance of group affiliates relative to standalone firms consistent with the findings of OLS.

Relational Own is found insignificantly related to firm performance whereas Own Concentration is negatively related to firm performance. Inst Own variable show a positive impact on the performance of firms. Similarly, the positive coefficient signs of both Domestic Pvt. Inst and Govt. Inst variables confirm the potential of institutional investors in affecting firm performance. These results are consistent with OLS regression results.

Panel B in Table 4.84 shows that Group pyramid dummy is negative and however, results are strongly visible in regression models where dependent variables are ROA and Tobin's Q. The statistics provide empirical evidence of lower financial performance of pyramidal group firms than other standalone firms in Pakistan. The estimation results show that ownership variables except Own Concentration are insignificant and however, control variables show similar results to those found in OLS.

Group diversification dummy shows consistently negative coefficients, although these are highly pronounced when dependent variable is Tobin's Q as shown in Panel C of Table 4.85. The findings support to OLS results indicating that diversified group firms underperform to standalone firms. Own Concentration is negatively related whereas Inst Own is positively related to firm performance. However, other ownership variables seem not strongly affecting firm performance. The control variables like leverage, size, growth and risk show similar results as shown in Panel A and B.

TABLE 4.83: Panel A: Group Affiliation, Relational Ownership, Ownership Concentration ... and Firm Performance-RE-GLS

Variable	ROA		ROS		Tobin's Q	
Group affiliation dummy	-0.0151	-0.0142	-0.0225	-0.0217	-0.1846***	-0.1847***
	0.1562	0.1845	0.2661	0.2861	0.0001	0.0001
Relational Own	0.0015	-0.0010	0.0035	-0.0033	-0.0324	-0.0493
	0.9421	0.9632	0.9261	0.9290	0.6697	0.5128
Own Concentration	-0.0264	-0.0264	-0.1044**	-0.1047**	-0.0101	-0.0091
	0.2743	0.2778	0.0170	0.0171	0.9081	0.9168
Inst Own	0.0375		0.0717		0.1671*	
	0.1793		0.1453		0.0703	
Domestic Pvt. Inst		0.0265		0.0279		0.1186
		0.4705		0.6657		0.3288
Govt. Inst		0.0130		0.0799		0.2552
		0.8090		0.4030		0.1619
Leverage	-0.0665***	-0.0665***	-0.0827***	-0.0825***	1.1789***	1.1792***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0086***	0.0085**	0.0231***	0.0231***	0.1510***	0.1516***
	0.0093	0.0102	0.0001	0.0001	0.0000	0.0000
Growth	0.0803***	0.0801***	0.1095***	0.1091***	0.0176	0.0168
	0.0000	0.0000	0.0000	0.0000	0.4151	0.4370
Risk	-0.0409***	-0.0411***	-0.0791***	-0.0791***	0.0456**	0.0457**
	0.0000	0.0000	0.0000	0.0000	0.0125	0.0125
Constant	-0.0215	-0.0187	-0.2448***	-0.2408***	-0.7475***	-0.7491***
	0.5850	0.6385	0.0008	0.0011	0.0000	0.0000
Observation	1430	1430	1430	1430	1430	1430
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.1860	0.1843	0.1473	0.1458	0.5913	0.5911
F-statistics	17.322***	16.3707***	13.344***	12.6112***	104.372***	99.3599***
Chi-square	19.4987***	18.4641**	30.176***	30.0842***	83.4578***	82.6875***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.84: Panel B: Group Pyramids, Relational Ownership, Ownership Concentration ... and Firm Performance-RE-GLS

Variable	ROA		ROS		Tobin's Q	
Group pyramid dummy	-0.0448**	-0.0453**	-0.0134	-0.0133	-0.1098*	-0.1090*
	0.0179	0.0172	0.6917	0.6953	0.0862	0.0892
Relational Own	0.0315	0.0303	0.0064	0.0002	0.0051	-0.0089
	0.2102	0.2311	0.8892	0.9961	0.9552	0.9218
Own Concentration	-0.0161	-0.0164	-0.0975**	-0.0981**	0.0391	0.0401
	0.5043	0.4984	0.0269	0.0266	0.6556	0.6480
Inst Own	0.0325		0.0661		0.1429	
	0.2423		0.1798		0.1211	
Domestic Pvt. Inst		0.0245		0.0250		0.1130
		0.5039		0.6996		0.3524
Govt. Inst		0.0002		0.0686		0.1964
		0.9976		0.4737		0.2816
Leverage	-0.0654***	-0.0654***	-0.0823***	-0.0822***	1.1829***	1.1832***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0077**	0.0077**	0.0216***	0.0217***	0.1459***	0.1464***
	0.0161	0.0170	0.0003	0.0003	0.0000	0.0000
Growth	0.0802***	0.0800***	0.1089***	0.1085***	0.0159	0.0154
	0.0000	0.0000	0.0000	0.0000	0.4597	0.4764
Risk	-0.0411***	-0.0414***	-0.0788***	-0.0788***	0.0458**	0.0457**
	0.0000	0.0000	0.0000	0.0000	0.0121	0.0125
Constant	-0.0279	-0.0243	-0.2521***	-0.2475***	-0.8752***	-0.8766***
	0.4748	0.5370	0.0006	0.0008	0.0000	0.0000
Observation	1430	1430	1430	1430	1430	1430
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.1882	0.1867	0.1460	0.1445	0.5887	0.5884
F-statistics	17.5620***	16.6214***	13.2119***	12.4932***	103.2617***	98.2948***
Chi-square	19.6546**	18.6370**	28.1328***	28.1108***	89.5149***	90.1182***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.85: Panel C: Group Diversification, Relational Ownership, Ownership Concentration ... and Firm Performance-RE-GLS

Variable	ROA		ROS		Tobin's Q	
Group diversification dummy	-0.0164	-0.0158	-0.0285	-0.0272	-0.1122**	-0.1107**
	0.1167	0.1348	0.1550	0.1759	0.0155	0.0171
Relational Own	0.0034	0.0011	0.0079	0.0009	-0.0452	-0.0610
	0.8693	0.9579	0.8349	0.9810	0.5549	0.4224
Own Concentration	-0.0278	-0.0278	-0.1075**	-0.1076**	-0.0016	0.0000
	0.2509	0.2543	0.0145	0.0148	0.9857	0.9998
Inst Own	0.0378		0.0727		0.1599*	
	0.1770		0.1401		0.0839	
Domestic Pvt. Inst		0.0284		0.0307		0.1232
		0.4406		0.6351		0.3117
Govt. Inst		0.0099		0.0764		0.2231
		0.8536		0.4235		0.2214
Leverage	-0.0663***	-0.0663***	-0.0824***	-0.0823***	1.1815***	1.1818***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0086***	0.0085***	0.0232***	0.0232***	0.1486***	0.1491***
	0.0091	0.0099	0.0001	0.0001	0.0000	0.0000
Growth	0.0799***	0.0797***	0.1089***	0.1086***	0.0153	0.0146
	0.0000	0.0000	0.0000	0.0000	0.4787	0.4980
Risk	-0.0410***	-0.0412***	-0.0791***	-0.0792***	0.0456**	0.0455**
	0.0000	0.0000	0.0000	0.0000	0.0125	0.0129
Constant	-0.0272	-0.0239	-0.2525***	-0.2480***	-0.8403***	-0.8420***
	0.4879	0.5460	0.0005	0.0007	0.0000	0.0000
Observation	1430	1430	1430	1430	1430	1430
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.1861	0.1844	0.1474	0.1459	0.5894	0.5891
F-statistics	17.3366***	16.3885***	13.3573***	12.6202***	103.5463***	98.5561***
Chi-square	19.1756***	18.3017**	28.7107***	28.7922***	86.1093***	86.4886***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

4.2.3.1 Group Affiliation Interaction Analyses

Table 4.86 reports the results of interaction analyses between group affiliation and two ownership variables of relational ownership and ownership concentration using OLS. These results represent regression models where industry dummies are not included. The coefficient of Relational Own is significantly positive whereas GA*Relational Own is significantly negative. The results are consistent in all of the performance measures. The findings suggest that performance impacts of relational ownership are significantly different for group firms than standalone. It affects significantly positively the performance of standalone firms. In contrast to these results, relational ownership is found significantly negatively affecting the performance of group firms in Pakistan. In the same lines, ownership concentration affects significantly differently the performance of group firms than standalone firms. Ownership concentration does not affect significantly the performance of standalone firms whereas it affects strongly negatively the performance of group firms in Pakistan. These results are consistent across all of the performance measures of ROA, ROS and Tobin's Q.

The strong negative impact of both relational ownership and ownership concentration for group firms suggest that ultimate controller in group firms achieve control over firms in excess of their direct shareholdings through cross shareholdings and complex pyramidal structures those motivate them in tunneling firm resources from publicly listed firms to ultimate controllers' wholly owned privately held firms or tunneling resources from firms with least cash flow rights to other firms with higher cash flow rights of the ultimate controllers and thus detrimental for external shareholders' value (MULLAINATHAN, 2002).

Table 4.87 presents the interactive analyses results of group affiliation and two ownership variables of relational ownership and ownership concentration when industry dummies are include in the regression models using OLS. The results are highly consistent with the findings presented in Table 4.86 explained above.

Table 4.88 presents the results of group affiliation interactive analyses using random-effect Generalized Least Square estimations. The results show consistent results

TABLE 4.86: Interaction between Group Affiliation, Relational Ownership, Ownership Concentration ... when Dep. Variable is Firm Performance-OLS

Variable	ROA		ROS		Tobin's Q	
Group affiliation dummy	-0.0161*	0.0465**	-0.0399***	0.0432	-0.0866***	-0.0352
	0.0520	0.0395	0.0070	0.2851	0.0048	0.6780
Relational Own	0.0830***	0.0328**	0.0519	0.0079	0.4421***	0.1183**
	0.0021	0.0231	0.2823	0.7608	0.0000	0.0313
Own Concentration	-0.0352*	0.0345	-0.0975***	-0.0087	0.0407	0.1462
	0.0519	0.2101	0.0026	0.8597	0.5456	0.1572
Inst Own	0.0869***	0.0809***	0.1338***	0.1255***	0.3217***	0.3210***
	0.0002	0.0004	0.0011	0.0023	0.0002	0.0003
GA*Relational Own	-0.0762**		-0.0699		-0.4525***	
	0.0142		0.2086		0.0001	
GA*Own Concentration		-0.1206***		-0.1530**		-0.1904
		0.0007		0.0157		0.1522
Leverage	-0.0584***	-0.0587***	-0.0784***	-0.0782***	1.0580***	1.0504***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0076***	0.0071***	0.0199***	0.0193***	0.1046***	0.1043***
	0.0009	0.0020	0.0000	0.0000	0.0000	0.0000
Growth	0.0917***	0.0910***	0.1401***	0.1393***	0.0335	0.0315
	0.0000	0.0000	0.0000	0.0000	0.3122	0.3448
Risk	-0.0561***	-0.0555***	-0.1182***	-0.1174***	0.0272	0.0297
	0.0000	0.0000	0.0000	0.0000	0.2880	0.2489
Constant	0.0269	-0.0056	-0.0495	-0.0942**	-0.3424***	-0.3639***
	0.2315	0.8247	0.2190	0.0380	0.0000	0.0000
Observation	1430	1430	1430	1430	1430	1430
Sector dummy	No	No	No	No	No	No
Adj.R-square	0.2195	0.2226	0.2029	0.2052	0.5943	0.5905
F-statistics	45.6587***	46.4625***	41.4051***	42.0032***	233.5564***	229.9483***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.87: Interaction between Group Affiliation, Relational Ownership, Ownership Concentration ... when Dep. Variable is Firm Performance-OLS (Continued)

Variable	ROA		ROS		Tobin's Q	
Group affiliation dummy	-0.0178**	0.0500**	-0.0464***	0.0307	-0.0719**	0.0147
	0.0301	0.0250	0.0016	0.4410	0.0168	0.8593
Relational Own	0.0454*	0.0213	0.0135	0.0251	0.2644***	0.0707
	0.0984	0.1546	0.7833	0.3499	0.0091	0.2023
Own Concentration	-0.0410**	0.0291	-0.1098***	-0.0361	-0.0167	0.0984
	0.0248	0.2885	0.0008	0.4623	0.8036	0.3319
Inst Own	0.0649***	0.0566**	0.1376***	0.1279***	0.2718***	0.2631***
	0.0046	0.0137	0.0008	0.0019	0.0014	0.0021
GA*Relational Own	-0.0392		0.0092		-0.2748**	
	0.2123		0.8694		0.0174	
GA*Own Concentration		-0.1197***		-0.1244**		-0.2025
		0.0006		0.0451		0.1157
Leverage	-0.0561***	-0.0555***	-0.0737***	-0.0721***	1.0746***	1.0709***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0118***	0.0112***	0.0328***	0.0323***	0.0982***	0.0973***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0881***	0.0873***	0.1336***	0.1330***	0.0345	0.0327
	0.0000	0.0000	0.0000	0.0000	0.2838	0.3107
Risk	-0.0561***	-0.0558***	-0.1165***	-0.1163***	0.0223	0.0232
	0.0000	0.0000	0.0000	0.0000	0.3672	0.3484
Constant	-0.0461*	-0.0818***	-0.2891***	-0.3295***	-0.3905***	-0.4402***
	0.1027	0.0067	0.0000	0.0000	0.0000	0.0000
Observation	1430	1430	1430	1430	1430	1430
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.2589	0.2643	0.2453	0.2475	0.6258	0.6250
F-statistics	24.7745***	25.4510***	23.1221***	23.3779***	114.8040***	114.3940***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.88: Interaction between Group Affiliation, Relational Ownership, Ownership Concentration . . . when Dep. Variable is Firm Performance-RE-GLS

Variable	ROA		ROS		Tobin's Q	
Group affiliation dummy	-0.0109	0.0668**	-0.0281	0.0328	-0.1669***	-0.1923*
	0.3645	0.0285	0.2170	0.5581	0.0011	0.0948
Relational Own	0.0252	0.0067	-0.0283	0.0069	0.0706	-0.0329
	0.5058	0.7454	0.6834	0.8550	0.6195	0.6663
Own Concentration	-0.0258	0.0513	-0.1052**	-0.0518	-0.0071	-0.0175
	0.2844	0.1570	0.0163	0.4337	0.9351	0.8959
Inst Own	0.0376	0.0304	0.0711	0.0673	0.1713*	0.1675*
	0.1783	0.2767	0.1490	0.1725	0.0638	0.0702
GA*Relational Own	-0.0324		0.0434		-0.1393	
	0.4560		0.5857		0.3919	
GA*Own Concentration		-0.1340***		-0.0905		0.0126
		0.0042		0.2891		0.9416
Leverage	-0.0663***	-0.0658***	-0.0830***	-0.0824***	1.1792***	1.1789***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0086***	0.0079**	0.0230***	0.0226***	0.1508***	0.1510***
	0.0093	0.0163	0.0001	0.0002	0.0000	0.0000
Growth	0.0804***	0.0800***	0.1094***	0.1094***	0.0178	0.0176
	0.0000	0.0000	0.0000	0.0000	0.4085	0.4149
Risk	-0.0408***	-0.0403***	-0.0794***	-0.0787***	0.0466**	0.0455**
	0.0000	0.0000	0.0000	0.0000	0.0108	0.0128
Constant	-0.0231	-0.0620	-0.2424***	-0.2719***	-0.7535***	-0.7435***
	0.5575	0.1362	0.0010	0.0004	0.0000	0.0000
Observation	1430	1430	1430	1430	1430	1430
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.1857	0.1904	0.1468	0.1474	0.5912	0.5910
F-statistics	16.5212***	16.9995***	12.7043***	12.7674***	99.3985***	99.3323***
Chi-square	19.7943**	19.4883**	29.9539***	30.3897***	84.5726***	83.5953***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

with OLS though these are not shown highly significant. The coefficient signs are negative for both GA*Relational Own and GA*Own Concentration clearly indicating that relational ownership and ownership concentration negatively affect performance of group firms in Pakistan.

4.2.4 Business Groups, Internationalization Strategy and Firm Performance

Multinational corporations (MNCs) are well pronounced around the world. Internationalization strategy is used by firms to extend market power, enhance profitability and reduce risk. MNC's having strong resource and technological capabilities operate advantageously in the developing countries' markets. Further, these foreign subsidiaries possess more market information, entrepreneur skills, and better firm's internal corporate governance system. Many MNC's are operating in Pakistan and are expected to trade at premium than domestic firms operating in Pakistan.

Table 4.89 presents the comparative performance results of domestic business groups and foreign subsidiaries relative to domestic standalone firms. Similarly, Table 4.90 reports the regression results showing the comparative performance of domestic pyramidal group firms, foreign subsidiaries relative to domestic standalone firms. Finally, Table 4.91 gives the comparative performance results of domestic business groups engage in foreign technology catch-up (foreign subsidiaries under the control of Pakistani business groups) relative to foreign subsidiaries.

Table 4.89 presents the results showing the comparative performance of Pakistani business groups, foreign subsidiaries relative to standalone firms. The findings indicate that domestic business groups underperform whereas foreign subsidiaries outperform standalone firms. The results are significant at conventional level in both accounting based measures of ROA and ROS and a market performance measure of Tobin's Q. The significant difference of performance of domestic and

foreign subsidiaries is consistent with the findings of Boardman et al. (1997). Further, Inside Own and Own disparity variables are negatively affecting firm performance. The control variables include leverage, size, growth and risk. Leverage affects negatively ROA and ROS whereas it affects positively Tobin's Q. Firm Size and Growth variables affect positively whereas Risk variable affect negatively firm performance.

Table 4.90 reports the results showing comparative performance of pyramidal domestic group firms, foreign subsidiaries relative to standalone firms. The statistics reveal that pyramidal group firms underperform than standalone firms and however, foreign subsidiaries outperform than standalone firms. The findings are consistent with the above results. The superior performance of foreign subsidiaries is consistent with the expectation. Inside Own is negatively related to firm performance and Govt Inst variable is positively related to firm performance. The control variable show similar results as explained above.

Table 4.91 demonstrates the results showing the performance of Pakistani business groups having significant control over the foreign subsidiary relative to foreign subsidiaries. The findings reveal that foreign subsidiaries under the control (beyond ownership e.g., leadership) of domestic business group underperform than foreign subsidiaries (not under the control of any Pakistani business group). The results provide evidence that business groups with foreign technology and resource capabilities are still unable to compete and perform at the same level at which foreign subsidiaries operate in Pakistan. These findings highlight that internal corporate governance problems may be at play those may affect the performance of business groups adversely in Pakistan.

TABLE 4.89: Performance of Domestic BGs, Foreign Subsidiaries and Domestic Standalone Firms-OLS

Variable	ROA				ROS				Tobin's Q			
Group affiliation dummy	-0.0250***	-0.0209***	-0.0255***	-0.0211***	-0.052***	-0.0488***	-0.0538***	-0.0501***	-0.1564***	-0.0990***	-0.1614***	-0.0999***
	0.0004	0.0028	0.0004	0.0027	0.0000	0.0000	0.0000	0.0000	0.0001	0.0065	0.0000	0.0062
Foreign subsidiary dummy	0.0924***	0.0555***	0.0915***	0.0547***	0.0381*	-0.02	0.0376*	-0.0212	0.6589***	0.5067***	0.6536***	0.5037***
	0.0000	0.0001	0.0000	0.0001	0.0877	0.389	0.0919	0.3621	0.0000	0.0000	0.0000	0.0000
Inside Own	-0.0624***	-0.053***	-0.0684***	-0.0563***	-0.077***	-0.0836***	-0.0742***	-0.08***	-0.1031	-0.1546**	-0.1075	-0.1612**
	0.0000	0.0003	0.0000	0.0001	0.0013	0.0007	0.0018	0.0012	0.1924	0.0421	0.1721	0.0336
Own Disparity	-0.0291***	-0.0296***	-0.0326***	-0.0319***	-0.048***	-0.0336*	-0.049***	-0.0333*	-0.0626	-0.0672	-0.0686	-0.0721
	0.0075	0.0063	0.0027	0.0031	0.0079	0.0685	0.0074	0.0691	0.2986	0.2353	0.2532	0.2006
Inst Own	0.0222	0.0252			0.061	0.0685*			-0.0797	0.0609		
	0.3628	0.2890			0.1374	0.0900			0.5566	0.6245		
Domestic Pvt Inst			-0.0252	-0.0051			0.041	0.0569			-0.2445	-0.0125
			0.4216	0.8686			0.4375	0.2769			0.1611	0.9382
Govt. Inst			0.0345	0.0355			0.1541**	0.1563**			0.1143	0.1012
			0.4085	0.386			0.0283	0.0247			0.6205	0.6356
Leverage	-0.0682***	-0.0632***	-0.0683***	-0.0631***	-0.095***	-0.089***	-0.0944***	-0.0884***	1.1311***	1.1563***	1.132***	1.1569***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0058***	0.0117***	0.0061***	0.0119***	0.021***	0.0337***	0.0217***	0.0342***	0.1427***	0.1362***	0.1442***	0.137***
	0.0079	0.0000	0.0052	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.0937***	0.0917***	0.0933***	0.0914***	0.1375***	0.1346***	0.1372***	0.1344***	0.0343	0.0456	0.033	0.0448
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4807	0.3073	0.4969	0.3162
Risk	-0.0546***	-0.0531***	-0.0543***	-0.053***	-0.108***	-0.1067***	-0.1079***	-0.1062***	0.0201	0.0181	0.0237	0.0188
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.5954	0.6007	0.5324	0.5886
Constant	0.0704***	-0.0362	0.0741***	-0.0343	-0.056*	-0.2926***	-0.0637*	-0.3021***	-0.4259***	-0.6789***	-0.4273***	-0.6771***
	0.0004	0.1648	0.0002	0.1914	0.0956	0.0000	0.0599	0.0000	0.0000	0.0000	0.0000	0.0000
Observation	1643	1643	1643	1643	1643	1643	1643	1643	1643	1643	1643	1643
Sector dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.2655	0.3156	0.2654	0.3151	0.2154	0.2534	0.2163	0.2543	0.5023	0.5874	0.5026	0.5872
F-statistics	66.9624***	37.0629***	60.3216***	35.3358***	51.095***	27.5411***	46.3272***	26.4527***	185.1328***	112.3334***	166.9317***	107.1613***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.90: Performance of Domestic Group Pyramids, Foreign Subsidiaries and Domestic Standalone Firms-OLS

Variable	ROA				ROS				Tobin's Q			
Group pyramid dummy	-0.0666***	-0.0492***	-0.0678***	-0.0496***	-0.1283***	-0.09***	-0.1275***	-0.0881***	-0.1963**	-0.1016	-0.1996**	-0.1024
	0.0001	0.0028	0.0000	0.0026	0.0000	0.0013	0.0000	0.0017	0.0315	0.2364	0.0288	0.2336
Foreign subsidiary dummy	0.0679***	0.0408**	0.0666***	0.04**	-0.006	-0.0391	-0.0047	-0.0381	0.656***	0.5185***	0.6527***	0.5162***
	0.0000	0.0115	0.0000	0.0134	0.8272	0.1547	0.8637	0.1656	0.0000	0.0000	0.0000	0.0000
Inside Own	-0.0617***	-0.0509***	-0.0681***	-0.0546***	-0.0746***	-0.0767***	-0.0724***	-0.0733***	-0.0846	-0.1334*	-0.0899	-0.1410*
	0.0000	0.0004	0.0000	0.0002	0.0018	0.0019	0.0023	0.0029	0.2856	0.0782	0.2547	0.0623
Own Disparity	0.0142	0.0019	0.0115	-0.0001	0.0347	0.0242	0.034	0.0235	0.0645	-0.0014	0.0616	-0.0055
	0.3538	0.8971	0.4501	0.9973	0.1791	0.3443	0.1856	0.358	0.4479	0.9859	0.4673	0.9445
Inst Own	0.0132	0.0184			0.0430	0.0543			-0.1177	0.0401		
	0.5871	0.4384			0.2940	0.1799			0.3868	0.7475		
Domestic Pvt Inst			-0.0308	-0.009			0.0308	0.0501			-0.2512	-0.0156
			0.3258	0.769			0.5593	0.3398			0.1521	0.9235
Govt Inst			0.0113	0.0175			0.1066	0.1176			-0.008	0.0353
			0.786	0.6687			0.1269	0.0907			0.9722	0.8685
Leverage	-0.0649***	-0.0604***	-0.065***	-0.0604***	-0.0884***	-0.0835***	-0.0881***	-0.083***	1.1442***	1.1649***	1.1447***	1.1652***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.005**	0.0107***	0.0052**	0.0109***	0.0193***	0.0313***	0.0196***	0.0316***	0.1386***	0.1325***	0.1394***	0.133***
	0.0194	0.0000	0.0147	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Growth	0.093***	0.0911***	0.0925***	0.0909***	0.1358***	0.133***	0.1356***	0.1328***	0.0286	0.0425	0.0277	0.0419
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.558	0.3419	0.5701	0.3494
Risk	-0.0533***	-0.0522***	-0.0532***	-0.0522***	-0.1063***	-0.1047***	-0.1056***	-0.1043***	0.0273	0.0214	0.0299	0.0216
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4716	0.5365	0.4313	0.5342
Constant	0.0599***	-0.0399	0.0647***	-0.037	-0.077**	-0.3035***	-0.0827**	-0.3113***	-0.5125***	-0.731***	-0.5111***	-0.7259***
	0.0026	0.1236	0.0013	0.1575	0.0214	0.0000	0.0143	0.0000	0.0000	0.0000	0.0000	0.0000
Observation	1643	1643	1643	1643	1643	1643	1643	1643	1643	1643	1643	1643
Sector dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.2673	0.3157	0.2672	0.3151	0.2166	0.2505	0.2168	0.2508	0.4987	0.5859	0.4988	0.5856
F-statistics	67.5628***	37.0671***	60.8825***	35.3402***	51.4486***	27.1304***	46.4541***	25.9839***	182.5311***	111.6319***	164.4424***	106.485***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

Table 4.91: Performance of BGs having Access to Foreign Technology Catch-up-OLS

Variable	ROA				ROS				Tobin's Q			
Inside Own	-0.4573**	-0.3680**	-0.4032**	-0.3096**	-0.0863	-0.0490	0.0944	0.1089	1.7022	1.0235	1.6477	1.1037
	0.0103	0.0312	0.0192	0.0629	0.612	0.7858	0.5799	0.5439	0.3496	0.5171	0.3672	0.4822
Own Disparity	-0.1133***	-0.0878**	-0.0917**	-0.085**	0.004	0.0085	0.0186	0.0114	-0.5868	-0.2790	-0.5644	-0.3736
	0.0046	0.0159	0.0151	0.0164	0.9158	0.8249	0.6178	0.7652	0.1509	0.4108	0.1559	0.2651
Inst Own	-0.472***	-0.2094*			-0.2813***	-0.3368***			-1.4472	0.2725		
	0.0000	0.0625			0.0038	0.005			0.1755	0.7885		
Domestic Pvt. Inst			-1.163***	-0.6766***			-0.524***	-0.359*			-4.7177**	-1.6729
			0.0000	0.0006			0.0037	0.0879			0.0262	0.3729
Govt Inst			-0.0795	0.1327			0.3152**	0.4403**			0.0377	2.1041
			0.5832	0.4285			0.0300	0.0159			0.9802	0.1738
BG catch up	-0.0493**	-0.0109	-0.0529***	-0.0161	-0.0052	-0.0039	-0.0029	-0.0032	-0.6385***	-0.1703	-0.6653***	-0.1949
	0.0134	0.5734	0.0057	0.3941	0.7851	0.8502	0.8786	0.8747	0.0016	0.3372	0.0010	0.2703
Leverage	-0.1073***	-0.1045***	-0.093***	-0.0937***	-0.1934***	-0.1889***	-0.1838***	-0.1846***	1.8697***	1.7785***	1.9196***	1.8258***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	-0.0246***	-0.0118	-0.0303***	-0.015**	0.0095	0.0166**	0.0127*	0.0231***	0.4666***	0.3391***	0.4175***	0.3113***
	0.0016	0.139	0.0001	0.0570	0.2020	0.0502	0.0929	0.0071	0.0000	0.0000	0.0000	0.0000
Growth	0.1203***	0.1506***	0.1075***	0.1396***	0.078**	0.0832**	0.069**	0.0894***	0.2109	0.6213**	0.15	0.5517*
	0.0010	0.0000	0.0022	0.0000	0.0251	0.0163	0.0475	0.0095	0.5631	0.0373	0.6816	0.0623
Risk	-0.0147	-0.0022	0.012	0.0117	0.0785***	0.1022***	0.095***	0.1155***	-0.4638	-0.1766	-0.3771	-0.1566
	0.6307	0.9393	0.6852	0.674	0.0082	0.0009	0.0014	0.0002	0.1349	0.5033	0.2215	0.5494
Constant	0.5963***	0.3606***	0.6348***	0.3837***	0.1091	0.0592	0.043	-0.0348	-2.0921**	-3.0043***	-1.6064*	-2.6516***
	0.0000	0.0023	0.0000	0.0008	0.1935	0.6332	0.6019	0.7747	0.0200	0.0029	0.0829	0.0085
Observation	213	213	213	213	213	213	213	213	213	213	213	213
Sector dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.2704	0.4386	0.3293	0.4655	0.4353	0.4709	0.4431	0.476	0.3896	0.6149	0.396	0.619
F-statistics	10.823***	12.829***	12.565***	13.309***	21.426***	14.477***	19.74***	13.839***	17.9148***	25.1778***	16.4418***	23.9631***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

Tables 4.92, 4.93 and 4.94 present the random effect Generalized Least square regression estimation results. Panel A in Table 4.92 shows that domestic business groups underperform than both foreign subsidiaries and domestic standalone firms in Pakistan. Foreign subsidiaries outperform to both domestic business groups and domestic standalone firms in Pakistan. The findings are consistent with OLS results.

Panel B in Table 4.93 presents that domestic pyramidal group firms underperform than both foreign subsidiaries and domestic standalone firms in Pakistan. However, the strength of lower performance is stronger for domestic pyramidal group firms relative to domestic standalone firms in Pakistan. Foreign subsidiaries outperform to both domestic pyramidal group firms and domestic standalone firms in Pakistan. The results are again consistent with OLS results.

Panel C in Table 4.94 examine the comapative performance of foreign subsidiaries being controlled by domestic business groups and foreign subsidiaries operating in Pakistan. The findings reveal that foreign subsidiaries being controlled by domestic business groups underperform than foreign subsidiaries operating in Pakistan. Foreign subsidiaries implement higher levels of corporate governance practices within the firm. However, the findings suggest that foreign subsidiaries under the control of domestic business groups are unable to yield the same level of performance. Although, foreign subsidiaries under the control of domestic business groups have access to foreign technology but these could not yield benefits. Also the results suggest that these firms face severe agency conflicts. The findings are consistent with OLS results.

TABLE 4.92: Performance of Domestic BGs, Foreign Subsidiaries and Domestic Standalone Firms-RE-GLS

Variable	ROA		ROS		Tobin's Q	
Group affiliation dummy	-0.0141	-0.0142	-0.0262	-0.0271	-0.2138***	-0.2175***
	0.1982	0.1966	0.1743	0.1613	0.0022	0.0018
Foreign subsidiary dummy	0.0617***	0.0614***	-0.0094	-0.0094	0.2442*	0.2466*
	0.0039	0.0042	0.8018	0.8024	0.0666	0.0646
Inside Own	-0.0485**	-0.0508***	-0.0714**	-0.0716**	-0.1436	-0.1367
	0.0108	0.0075	0.0268	0.0261	0.1089	0.1259
Own Disparity	-0.0263*	-0.0279**	-0.0158	-0.0176	-0.0346	-0.0381
	0.0532	0.0390	0.4868	0.4359	0.5518	0.5065
Inst Own	0.0052		0.0215		0.0464	
	0.8546		0.6488		0.6917	
Domestic Pvt. Inst		-0.0179		-0.0023		0.0053
		0.6318		0.9704		0.9728
Govt. Inst		0.0107		0.0788		0.3353
		0.8397		0.3751		0.1446
Leverage	-0.0694***	-0.0694***	-0.0895***	-0.0895***	1.3113***	1.3106***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0088***	0.0089***	0.0247***	0.0249***	0.2184***	0.2186***
	0.0059	0.0059	0.0000	0.0000	0.0000	0.0000
Growth	0.0811***	0.081***	0.1052***	0.1049***	0.0186	0.0174
	0.0000	0.0000	0.0000	0.0000	0.473	0.5025
Risk	-0.0389***	-0.0388***	-0.0718***	-0.0714***	0.0498**	0.0515**
	0.0000	0.0000	0.0000	0.0000	0.0261	0.0215
Constant	-0.0168	-0.0143	-0.2708***	-0.2727***	-1.3058***	-1.3169***
	0.6517	0.7021	0.0000	0.0000	0.0000	0.0000
Observation	1643	1643	1643	1643	1643	1643
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.2108	0.2101	0.15	0.1497	0.5928	0.5931
F-statistics	21.8806***	20.8572***	14.7943***	14.141***	114.8119***	109.7787***
Chi-square	15.4987**	14.8304*	35.0082***	34.7536***	65.6551***	66.7992***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.93: Performance of Domestic Group Pyramids, Foreign Subsidiaries and Domestic Standalone Firms-RE-GLS

Variable	ROA		ROS		Tobin's Q	
Group pyramid dummy	-0.0409*	-0.0412*	-0.0669*	-0.0659*	-0.1776*	-0.1720*
	0.0522	0.0514	0.059	0.0632	0.051	0.0590
Foreign subsidiary dummy	0.0490**	0.0486**	-0.0275**	-0.0266*	0.2967**	0.3036**
	0.0342	0.0364	0.4937	0.5100	0.0259	0.023
Inside Own	-0.0480**	-0.0505***	-0.0702**	-0.0705**	-0.1253	-0.1184
	0.0113	0.0076	0.0296	0.0286	0.1606	0.1838
Own Disparity	-0.0023	-0.0036	0.0229	0.0209	0.0612	0.0556
	0.9008	0.8430	0.4533	0.4934	0.4208	0.4614
Inst Own	0.0023		0.0165		0.0363	
	0.9367		0.7278		0.7566	
Domestic Pvt. Inst		-0.0197		-0.0053		0.0053
		0.5992		0.9327		0.9729
Govt. Inst		-0.0001		0.0605		0.2851
		0.9989		0.4972		0.2153
Leverage	-0.0684***	-0.0684***	-0.0880***	-0.0880***	1.3148***	1.3142***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0083***	0.0083***	0.0235***	0.0237***	0.2136***	0.2138***
	0.0084	0.0085	0.0000	0.0000	0.0000	0.0000
Growth	0.0809***	0.0808***	0.1046***	0.1044***	0.0175	0.0165
	0.0000	0.0000	0.0000	0.0000	0.4980	0.5237
Risk	-0.0384***	-0.0383***	-0.0707***	-0.0704***	0.0518**	0.0532**
	0.0000	0.0000	0.0000	0.0000	0.0205	0.0174
Constant	-0.0184	-0.0153	-0.2741***	-0.2754***	-1.4301***	-1.4435***
	0.6193	0.6799	0.0000	0.0000	0.0000	0.0000
Observation	1643	1643	1643	1643	1643	1643
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.2116	0.211	0.1501	0.1497	0.5917	0.5918
F-statistics	21.9865***	20.961***	14.8129***	14.1423***	114.2963***	109.2281***
Chi-square	15.7225**	15.1238*	31.6838***	31.4752***	69.6159***	71.3958***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.94: Performance of BGs having Access to Foreign Technology Catch-up-RE-GLS

Variable	ROA		ROS		Tobin's Q	
BG catch up	-0.0054	-0.0124	-0.0018	-0.001	-0.4507	-0.4362
	0.8637	0.6982	0.9363	0.9642	0.2674	0.2882
Inside Own	-0.1238	-0.1452	0.0477	0.1415	0.4269	0.2719
	0.4918	0.4168	0.7788	0.3998	0.6981	0.8076
Own Disparity	-0.0387	-0.0444	0.0105	0.0195	0.048	0.0497
	0.2583	0.1853	0.7560	0.5613	0.8168	0.8073
Inst Own	-0.1303		-0.4087***		-0.5667	
	0.2385		0.0002		0.3914	
Domestic Pvt. Inst		-0.5631***		-0.4323**		-0.32
		0.0068		0.0281		0.8065
Govt. Inst		0.2351		0.3906**		1.4826
		0.2438		0.0297		0.2533
Leverage	-0.0832***	-0.0771***	-0.1602***	-0.1603***	1.8147***	1.8204***
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Size	0.0005	-0.0026	0.0235***	0.0279***	0.6764***	0.6668***
	0.9639	0.8082	0.0070	0.0013	0.0000	0.0000
Growth	0.1040***	0.0947***	0.0552*	0.0664**	0.0290	0.0396
	0.0001	0.0004	0.0533	0.0218	0.8444	0.7889
Risk	-0.0071	0.0055	0.0886***	0.1059***	-0.1104	-0.0891
	0.7871	0.8344	0.001	0.0001	0.4725	0.5668
Constant	0.1468	0.1917	-0.0418	-0.1099	-5.9916***	-5.9087***
	0.3276	0.2015	0.7373	0.3648	0.0000	0.0000
Observation	213	213	213	213	213	213
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.2221	0.2492	0.3973	0.4039	0.6776	0.6776
F-statistics	5.3228***	5.6902***	10.9828***	10.5767***	32.8235***	30.7079***
Chi-square	21.0819***	15.8126**	59.8712***	62.7848***	21.2773***	20.46***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

4.3 Business Groups and Dividend Policy in Pakistan

4.3.1 Descriptive Statistics

In order to examine the dividend policy of group firms, the study does univariate analyses first. Table 4.95 presents the comparative values of dividend policy measures including Dividend Payout Ratio, Dividend Per Share, Dividend to Total Assets, Dividend to Sales and Dividend yield for pyramidal group firms and standalone firms in Pakistan. The statistics clearly reveal that group firms pay lower dividends than standalone firms in Pakistan as shown by the entire 5 dividend policy measures.

Table 4.96 reports the comparative values of Dividend Payout Ratio, Dividend Per Share, Dividend to Total Assets, Dividend to Sales and Dividend yield for least/non-diversified firms and diversified group firms. The statistics show that Dividend Payout Ratio and Dividend Yield are relatively lower for diversified firms than least/non-diversified firms whereas Dividend Per Share, Dividend to Total Assets and Dividend to Sales are relatively higher for diversified firms than least/non-diversified firms.

Table 4.97 highlights the correlations between variables. The correlations matrix confirms that there is no very high correlation between any of two independent variables.

TABLE 4.95: Comparison of Dividend Policy across Pyramidal Group Firms and Standalone Firms

Variable	Firm	Mean	Median	Std. Dev.
Dividend Payout Ratio	Standalone	0.1495	0.0000	0.2852
	Group pyramid	0.0906	0.0000	0.2487
	All	0.1437	0.0000	0.2822
Dividend Per Share	Standalone	1.7690	0.0000	5.1027
	Group pyramid	1.2153	0.0000	3.3394
	All	1.7140	0.0000	4.9576
Dividend to Total Assets	Standalone	0.0131	0.0000	0.0273
	Group pyramid	0.0072	0.0000	0.0177
	All	0.0125	0.0000	0.0266
Dividend to Sales	Standalone	0.0112	0.0000	0.0254
	Group pyramid	0.0061	0.0000	0.0195
	All	0.0107	0.0000	0.0249
Dividend Yield	Standalone	0.0368	0.0000	0.0685
	Group pyramid	0.0212	0.0000	0.0456
	All	0.0352	0.0000	0.0667
Observations	Standalone	1288		
	Group pyramid	142		
	All	1430		

TABLE 4.96: Comparison of Dividend Policy across Non-diversified/Least Diversified Firms and High Diversified Group Firms

Variable	Firm	Mean	Median	Std. Dev.
Dividend Payout Ratio	Least/non-diversified	0.1478	0.0000	0.2836
	Diversified	0.1381	0.0000	0.2805
	All	0.1437	0.0000	0.2822
Dividend Per Share	Least/non-diversified	1.5086	0.0000	3.2971
	Diversified	1.9966	0.0000	6.5835
	All	1.7140	0.0000	4.9576
Dividend to Total Assets	Least/non-diversified	0.0115	0.0000	0.0247
	Diversified	0.0139	0.0000	0.0289
	All	0.0125	0.0000	0.0266
Dividend to Sales	Least/non-diversified	0.0089	0.0000	0.0196
	Diversified	0.0132	0.0000	0.0306
	All	0.0107	0.0000	0.0249
Dividend Yield	Least/non-diversified	0.0360	0.0000	0.0653
	Diversified	0.0341	0.0000	0.0686
	All	0.0352	0.0000	0.0667
Observations	Least/non-diversified	828		
	Diversified	602		
	All	1430		

Table 4.97: Correlation Analyses

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Dividend payout ratio	1													
Group affiliation dummy	-0.001	1												
Inside Own	-0.094	-0.162	1											
Own Disparity	0.006	0.068	-0.416	1										
Inst Own	0.156	0.115	-0.353	-0.074	1									
Domestic Pvt Inst	0.134	0.025	-0.254	-0.091	0.753	1								
Govt Inst	0.003	0.142	-0.215	0.002	0.475	-0.055	1							
Slack	0.141	0.013	-0.052	0.010	0.064	0.027	0.053	1						
Listage	-0.067	0.177	-0.011	-0.020	-0.026	-0.025	0.036	-0.007	1					
Leverage	-0.151	-0.105	-0.008	-0.068	-0.033	-0.022	-0.021	-0.277	0.003	1				
Size	0.132	0.262	-0.122	0.019	0.131	0.137	-0.016	0.161	0.045	-0.166	1			
Growth	0.045	0.059	0.019	0.002	-0.022	-0.025	0.000	0.297	0.002	-0.102	0.053	1		
Risk	-0.100	-0.082	-0.039	-0.052	-0.009	0.037	-0.056	-0.287	0.010	0.222	-0.119	-0.128	1	
Profitability	-0.074	0.036	-0.049	0.107	-0.033	0.006	-0.047	-0.114	0.041	0.073	-0.065	-0.152	0.071	1

All coefficients greater than 0.10 are significant at 1 percent level.

TABLE 4.98: Variance Inflation Factors

Variable	Coefficient variance	Centered VIF
Group affiliation dummy	0.000	1.152
Inside Own	0.001	1.522
Own Disparity	0.001	1.330
Inst Own	0.003	1.246
Domestic Pvt Inst	0.005	1.165
Govt Inst	0.010	1.109
Slack	0.005	1.268
Listage	0.000	1.038
Leverage	0.000	1.143
Size	0.000	1.136
Growth	0.000	1.124
Risk	0.000	1.139
Profitability	0.000	1.053
Constant	0.002	NA
Observation	1430	

Further, Variance Inflation Factors procedure is adopted to determine the level of multicollinearity between independent variables. Table 4.98 shows that none of the VIF value for any variable exceeds 2. These VIF results validate that there is no serious multicollinearity in independent variables.

4.3.2 Business Groups and Dividend Policy-Inside Ownership, Ownership Disparity and Institutional Ownership

Table 4.99, 4.100 and 4.101 demonstrate the OLS regression results. The dependent variable is dividend policy measured by Dividend payout ratio. The independent variables include three group affiliation and diversification dummies, agency cost variables, risk variables and control variables. Agency costs variables include Inside Own (Inside ownership), Own Disparity (ownership disparity), Inst Own (institutional ownership), Domestic Pvt. Inst (domestic private institutional

ownership), Govt. Inst (Government institutional ownership) and Slack. The risk variables include Leverage, Growth and Risk. Finally, control variables include List age, Size and Profitability. The analyses are done across three panels. Panel A and B represent Group affiliation dummy and Group pyramid dummy analyses. Similarly, Panel C reports the results of Group diversification dummy analyses.

Panel A of Table 4.99 reports the results showing the impact of group affiliation, agency cost, risk and control variables. The results clearly demonstrate that Group affiliation dummy is consistently negatively related to Dividend payout ratio. The statistics suggest that group firms pay lower dividends relative to their counterpart standalone firms in Pakistan. The coefficient signs of Group affiliation dummy are consistent even when industry dummies are included in regression models. These results are consistent with Expropriation Hypothesis (La Porta et al., 2000a). The ultimate controllers in group firms prefer to retain cash with the firm at their disposal rather to distribute it to minority shareholders so that they maximize their personal wealth through expropriation.

Further, results show that coefficients of Inside Own are consistently negative. The results are highly significant in most of the regression models. The findings are consistent with agency theory (Rozeff, 1982; Moh'd et al., 1995). Own Disparity is also negatively related to Dividend payout ratio, yet the results are not significant at conventional level. These results are consistent with the expectations. The larger the ownership-control disparity the lower is the dividend payout ratio (Burkart and Lee, 2008). Further, the coefficients of Inst Own are consistently positive and these are highly significant in all of the regression models. Also, Domestic Pvt. Inst is positively related to Dividend payout ratio. The coefficients are consistently signed throughout the models and are highly significant. The findings suggest that institutional investors possess more knowledge and market information and they require higher levels of governance and assurance of reasonable returns. The presence of institutional investors in the board influence the quality of board decisions and they are helpful in making dividend decisions; hence beneficial in avoiding the wastage of free cash flows in organizational inefficiencies or investing in below NPV projects (Moh'd et al., 1995). However, Govt Inst is

not found influential in affecting dividend policy. Slack variable shows significantly positive relationship with Dividend payout ratio. The findings are aligned with agency theory (DeAngelo et al., 2004; Al-Shubiri et al., 2012).

Moreover, firm List age is consistently negatively related to Dividend payout ratio. The relationship is highly significant in all of the regression models. Consistent with the expectations, results show that both Leverage and Risk variables are inversely related to Dividend payout ratio (Al-Shubiri et al., 2012). The relationships are highly significant throughout the regression models. Contrarily, firm Growth is not found significant in affecting Dividend payout ratio. Further, firm Size strongly affect dividend policy. The coefficients are consistently positive and these are highly significant (Lloyd et al., 1985; Holder et al., 1998). Finally, Profitability variables show negative relationship with dividend policy (Al-Shubiri et al., 2012).

Panel B of Table 4.100 reports the results showing the dividend payout ratio for pyramidal group firms relative to standalone firms. The findings confirm that Group pyramid dummy is negative in all of the regression models and the results are highly significant. Further, the negative coefficients of Group pyramid dummy are significantly higher than Group affiliation dummy indicating clearly that pyramidal group firms pay lower dividends than standalone firms as well as other group firms. The findings support to expropriation hypothesis (La Porta et al., 2000b).

Inside Own affects significantly negatively Dividend Payout Ratio whereas contrary to the expectations, Own Disparity affects positively Dividend Payout Ratio. The impact of Inst Own and Domestic Pvt Inst is strongly positive indicating the influence of institutional ownership in affecting dividend policy. Slack again positively affects Dividend Payout Ratio of the firms. Consistent with the above results, List age, Leverage, Risk and profitability affect negatively whereas firm Size affects strongly positively Dividend Payout Ratio.

Panel C of Table 4.101 gives the results showing the impact of group diversification on dividend policy. The regression results indicate that coefficients of Group diversification dummy are significantly negative in all of the models. These results strongly confirm that diversified group firms pay lower dividends in Pakistan. Again, the results support expropriation hypothesis and managerial opportunism

TABLE 4.99: Panel A: Group Affiliation, Inside Ownership, Ownership Disparity ... and Dividend Policy-OLS

Variable	DPR			
Group affiliation dummy	-0.0303*	-0.0099	-0.0236	-0.0058
	0.0653	0.5463	0.1547	0.7241
Inside Own	-0.0599*	-0.0264	-0.0828**	-0.0423
	0.0668	0.4338	0.0109	0.2094
Own Disparity	-0.0128	-0.0105	-0.0212	-0.0184
	0.6232	0.6914	0.4168	0.4852
Inst Own	0.2395***	0.2130***		
	0.0000	0.0002		
Domestic Pvt. Inst			0.2576***	0.2480***
			0.0005	0.0006
Govt. Inst			-0.0410	0.0140
			0.6819	0.8866
Slack	0.1623**	0.1117*	0.1711**	0.1152*
	0.0205	0.1037	0.0148	0.0937
Listage	-0.0013**	-0.0014**	-0.0014**	-0.0014**
	0.0285	0.0291	0.0232	0.0200
Leverage	-0.0598***	-0.0484***	-0.0599***	-0.0490***
	0.0001	0.0014	0.0001	0.0013
Size	0.0171***	0.0252***	0.0162***	0.0247***
	0.0013	0.0000	0.0025	0.0000
Growth	0.0031	0.0037	0.001	0.0019
	0.8849	0.8615	0.9635	0.9264
Risk	-0.0293*	-0.0371**	-0.0324**	-0.0398**
	0.0723	0.0194	0.0479	0.0123
Profitability	-0.0015	-0.001	-0.0017*	-0.0011
	0.1074	0.2787	0.0709	0.2181
Constant	0.1077**	-0.1226*	0.1370***	-0.1027
	0.0293	0.0524	0.0060	0.1079
Observation	1430	1430	1430	1430
Sector dummy	No	Yes	No	Yes
Adj.R-square	0.0658	0.1242	0.0626	0.1223
F-statistics	10.1433***	9.8072***	8.9499***	9.2937***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.100: Panel B: Group Pyramids, Inside Ownership, Ownership Disparity ... and Dividend Policy-OLS

Variable	DPR			
Group pyramid dummy	-0.1633***	-0.0973**	-0.163***	-0.0984**
	0.0000	0.0158	0.0000	0.0148
Inside Own	-0.0594*	-0.0291	-0.0839***	-0.0466
	0.0666	0.3841	0.0093	0.1621
Own Disparity	0.1054***	0.0591	0.0969**	0.0518
	0.0069	0.1304	0.0130	0.1835
Inst Own	0.2253***	0.2065***		
	0.0001	0.0003		
Domestic Pvt. Inst			0.2461***	0.2424***
			0.0008	0.0007
Govt. Inst			-0.0636	0.0013
			0.5195	0.9892
Slack	0.1502**	0.1044	0.1568**	0.1067
	0.0312	0.1274	0.0247	0.1197
Listage	-0.0015***	-0.0014**	-0.0015***	-0.0015**
	0.0094	0.0191	0.0096	0.0147
Leverage	-0.0527***	-0.0447***	-0.0533***	-0.0455***
	0.0006	0.0032	0.0005	0.0027
Size	0.0178***	0.0256***	0.0173***	0.0254***
	0.0006	0.0000	0.001	0.0000
Growth	0.0038	0.0047	0.0023	0.0034
	0.8574	0.8217	0.9137	0.8725
Risk	-0.0286*	-0.0371**	-0.0322**	-0.0402**
	0.0780	0.0189	0.0481	0.0114
Profitability	-0.0014	-0.001	-0.0016*	-0.0011
	0.1298	0.3003	0.09	0.2400
Constant	0.0870*	-0.1221*	0.1174**	-0.1005
	0.0783	0.0525	0.0185	0.1146
Observation	1430	1430	1430	1430
Sector dummy	No	Yes	No	Yes
Adj.R-square	0.0745	0.1275	0.0721	0.1259
F-statistics	11.4504***	10.0832***	10.2582***	9.5751***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.101: Panel C: Group Diversification, Inside Ownership, Ownership Disparity ... and Dividend Policy-OLS

Variable	DPR			
Group diversification dummy	-0.043***	-0.0489***	-0.0403**	-0.0483***
	0.0078	0.0023	0.0127	0.0026
Inside Own	-0.0708**	-0.0461	-0.0944***	-0.0628*
	0.0323	0.1766	0.0042	0.0651
Own Disparity	-0.0077	-0.0051	-0.0164	-0.0131
	0.7685	0.847	0.5314	0.6188
Inst Own	0.2402***	0.2162***		
	0.0000	0.0001		
Domestic Pvt. Inst			0.2619***	0.2528***
			0.0004	0.0004
Govt. Inst			-0.0486	0.0189
			0.624	0.8469
Slack	0.1617**	0.1019	0.1691**	0.1044
	0.0206	0.1363	0.0156	0.1274
Listage	-0.0013**	-0.0012*	-0.0013**	-0.0013**
	0.0318	0.0519	0.0297	0.0404
Leverage	-0.0586***	-0.0496***	-0.0591***	-0.0504***
	0.0001	0.001	0.0001	0.0009
Size	0.0184***	0.0286***	0.0177***	0.0284***
	0.0006	0.0000	0.0010	0.0000
Growth	0.0017	0.0041	0.0001	0.0027
	0.9359	0.8449	0.9965	0.897
Risk	-0.0299*	-0.0396**	-0.0334**	-0.0425***
	0.0665	0.0124	0.0414	0.0074
Profitability	-0.0014	-0.0007	-0.0016*	-0.0009
	0.1453	0.4185	0.0983	0.3422
Constant	0.0975**	-0.1418**	0.1283**	-0.1211*
	0.0487	0.0248	0.0101	0.0579
Observation	1430	1430	1430	1430
Sector dummy	No	Yes	No	Yes
Adj.R-square	0.0682	0.1297	0.0653	0.1278
F-statistics	10.506***	10.2594***	9.3253***	9.7257***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

hypothesis (La Porta et al., 2000b; Jiraporn and Ning, 2006). Further, the findings reveal that Inside Own is negatively related Dividend Payout Ratio and the results are significant at conventional level. Inst Own and Domestic Inst Own are positively related to Dividend Payout Ratio. The other risk variables and control variable show similar results as explained above.

Tables 4.102, 4.103 and 4.104 report the results of random-effect Generalized Least Square estimations. The statistics in Panel A of Table 4.102 confirm the above OLS results. Group affiliation dummy is negative and however, relationship is not significant at conventional level. The findings suggest that group affiliated firms pay lower dividends than their corresponding standalone firms in Pakistan. Further, the statistics corroborate that agency costs variables e.g., Inside Own, Own Disparity, Inst Own, Domestic Pvt Inst, Govt Inst and Slack show consistent relationships and however, the relationships are not significant at conventional levels. The risk variables e.g., Leverage, Risk and Growth are also consistently signed. Both Leverage and Risk variables are significantly negatively related to Dividend Payout Ratio. Similarly, control variables e.g., List age, Size and Profitability show consistent relationships. Size is significantly positively related to Dividend Payout Ratio.

Panel B of Table 4.103 demonstrates that Group pyramid dummy is negatively related to Dividend payout ratio and results are highly significant. The findings strongly confirm that pyramidal group firms pay significantly lower dividends than their counterpart standalone firms in Pakistan. Further, agency cost variables show consistent relationships and however, these are not significant at conventional levels. Leverage and Risk show significantly negative relationships whereas Size variable confirm positive relationship with Dividend Payout Ratio.

Panel C of Table 4.104 presents that Group diversification dummy is significantly negatively related to Dividend Payout Ratio. The findings reveal that diversified group firms pay significantly lower dividends than least or non-diversified firms. The results are highly consistent with OLS results. The rest of the variables show similar results as explained in Panel A and B above.

TABLE 4.102: Panel A: Group Affiliation, Inside Ownership, Ownership Disparity ... and Dividend Policy-RE-GLS

Variable	DPR	
Group affiliation dummy	-0.0164	-0.0133
	0.4774	0.5684
Inside Own	-0.0460	-0.0586
	0.2762	0.1651
Own Disparity	-0.0442	-0.0500
	0.1857	0.1335
Inst Own	0.0662	
	0.3230	
Domestic Pvt. Inst		0.0626
		0.4649
Govt. Inst		-0.1104
		0.372
Slack	0.0145	0.0146
	0.8266	0.8258
Listage	-0.0013	-0.0014
	0.1333	0.1112
Leverage	-0.0404**	-0.0402**
	0.0202	0.0212
Size	0.0269***	0.0264***
	0.0003	0.0004
Growth	0.0055	0.0050
	0.7724	0.7918
Risk	-0.0220	-0.0235
	0.1450	0.1193
Profitability	-0.0002	-0.0003
	0.8204	0.7915
Constant	-0.1104	-0.0914
	0.1896	0.2808
Observation	1430	1430
Sector dummy	Yes	Yes
Adj.R-square	0.0401	0.0392
F-statistics	3.5978***	3.4272***
Chi-square	44.1275***	46.0204***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.103: Panel B: Group Pyramids, Inside Ownership, Ownership Disparity ... and Dividend Policy-RE-GLS

Variable	DPR	
Group pyramid dummy	-0.1150**	-0.1180**
	0.0288	0.0254
Inside Own	-0.0454	-0.0591
	0.2776	0.1579
Own Disparity	0.0399	0.0365
	0.4329	0.4734
Inst Own	0.0612	
	0.3597	
Domestic Pvt. Inst		0.0617
		0.4711
Govt. Inst		-0.1267
		0.3030
Slack	0.0108	0.0104
	0.8700	0.8746
Listage	-0.0014	-0.0015
	0.1008	0.0872
Leverage	-0.0373**	-0.0371**
	0.0319	0.0328
Size	0.027***	0.0268***
	0.0002	0.0002
Growth	0.0060	0.0057
	0.7537	0.7657
Risk	-0.0212	-0.0229
	0.1586	0.1286
Profitability	-0.0002	-0.0003
	0.8215	0.7929
Constant	-0.1113	-0.0908
	0.1842	0.2823
Observation	1430	1430
Sector dummy	Yes	Yes
Adj.R-square	0.0432	0.0425
F-statistics	3.8051***	3.6441***
Chi-square	43.1468***	44.8092***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.104: Panel C: Group Diversification, Inside Ownership, Ownership Disparity ... and Dividend Policy-RE-GLS

Variable	DPR	
Group diversification dummy	-0.0589***	-0.0579**
	0.0094	0.0109
Inside Own	-0.0628	-0.0758*
	0.1389	0.0740
Own Disparity	-0.0375	-0.0434
	0.2608	
Inst Own	0.0718	
	0.2815	0.2143
Domestic Pvt. Inst		0.0700
		0.4116
Govt. Inst		-0.105
		0.3916
Slack	0.011	0.0109
	0.868	0.8687
Listage	-0.0011	-0.0012
	0.1910	0.1665
Leverage	-0.0412**	-0.0410**
	0.0173	0.0179
Size	0.0296***	0.0293***
	0.0001	0.0001
Growth	0.0055	0.0051
	0.7715	0.7869
Risk	-0.0231	-0.0248
	0.1245	0.1006
Profitability	-0.0001	-0.0001
	0.9170	0.8849
Constant	-0.1258	-0.1060
	0.1320	0.2080
Observation	1430	1430
Sector dummy	Yes	Yes
Adj.R-square	0.0452	0.0442
F-statistics	3.9415***	3.7512***
Chi-square	44.9544***	47.2290***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

4.3.2.1 Group Affiliation Interaction Analyses

Table 4.105 gives the OLS results of interaction between group affiliation and inside ownership, ownership disparity, institutional ownership, domestic private institutional ownership and government ownership. The results of group affiliation interactive dummy with Inside Own suggest that inside ownership doesn't affect significantly differently dividend policy of group firms than their counterpart standalone firms. Further, the coefficients of Own Disparity are significantly positive whereas these are significantly negative for GA*Own Disparity. The findings suggest that impact of ownership disparity is significantly different for group firms than standalone firms. It affects significantly negatively the dividend payout ratio of group firms whereas the relationship is significantly positive in standalone firms. Both coefficients of GA*Inst Own and GA*Domestic Pvt. Inst are significantly positive clearly indicating that institutional investors play a vital role in affecting dividend policy of group firms in Pakistan. However, government ownership doesn't affect significantly differently the dividend policy of group firms than standalone firms.

Table 4.106 presents the OLS results of interaction dummy of Group pyramid dummy and ownership variables. The results are almost unchanged except for institutional ownership and domestic private institutional ownership. Both GA*Inst Own and GA*Domestic Pvt. Inst interactive variables are significantly negative. These results clearly suggest that both institutional ownership and domestic private institutional ownership significantly negatively affect dividend policy of pyramidal group firms in Pakistan. Again, these results are consistent with the argument that presence of institutional investors lowers agency costs and thus lesser is the need to pay dividend to shareholders.

TABLE 4.105: Interaction between Group Affiliation and Inside Ownership, Ownership Disparity ... when Dep. Variable is Dividend Payout Ratio-OLS

Variable	DPR									
Group affiliation dummy	-0.0270	0.0136	-0.0137	0.0004	-0.0556**	-0.0358*	-0.0476**	-0.0278	-0.0117	-0.0031
	0.3274	0.6204	0.4248	0.9798	0.0118	0.1007	0.0174	0.1620	0.5391	0.8716
Inside Own	-0.0545	0.0111	-0.0541*	-0.0233	-0.0596**	-0.0274	-0.0829**	-0.0445	-0.0841***	-0.0426
	0.2598	0.8197	0.0968	0.4904	0.0677	0.4171	0.0108	0.1862	0.0098	0.2065
Own Disparity	-0.0130	-0.0108	0.1156**	0.0736	-0.0107	-0.0085	-0.0194	-0.0171	-0.0238	-0.0189
	0.6199	0.6842	0.0148	0.1214	0.6818	0.7476	0.4588	0.5157	0.3639	0.4746
Inst Own	0.2391***	0.2111***	0.2358***	0.2105***	0.0946	0.0640				
	0.0000	0.0002	0.0000	0.0002	0.3553	0.5243				
Domestic Pvt. Inst							0.0502	0.0600	0.2539***	0.2473***
							0.6796	0.6152	0.0005	0.0006
Govt. Inst							-0.0346	0.0213	0.1771	0.0637
							0.7292	0.8289	0.3693	0.7433
GA*Inside Own	-0.0085	-0.0596								
	0.8805	0.2884								
GA*Own Disparity			-0.1698***	-0.1125**						
			0.0012	0.0331						
GA*Inst Own					0.2042*	0.2114*				
					0.0856	0.0724				
GA*Domestic Pvt. Inst							0.3135**	0.2884**		
							0.0328	0.0492		
GA*Govt. Inst									-0.2889	-0.0663
									0.2000	0.7671
Slack	0.1624**	0.1125**	0.1543**	0.1086	0.1544**	0.1039	0.1617**	0.1069	0.1726**	0.1157*
	0.0205	0.1012	0.0272	0.1134	0.0278	0.1305	0.0213	0.1200	0.0139	0.0927
Listage	-0.0013**	-0.0013**	-0.0014**	-0.0014**	-0.0014**	-0.0014**	-0.0014**	-0.0015**	-0.0014**	-0.0014**
	0.0289	0.0320	0.0236	0.0267	0.0241	0.0240	0.0174	0.0138	0.0239	0.0200
Leverage	-0.0597***	-0.0476***	-0.0570***	-0.0467***	-0.0596***	-0.0482***	-0.0607***	-0.0497***	-0.0606***	-0.0491***
	0.0001	0.0017	0.0002	0.0021	0.0001	0.0015	0.0001	0.0011	0.0001	0.0012
Size	0.0171***	0.0247***	0.0178***	0.0251***	0.0161***	0.0244***	0.0149***	0.0240***	0.0165***	0.0248***
	0.0014	0.0000	0.0008	0.0000	0.0026	0.0000	0.0055	0.0000	0.0022	0.0000
Growth	0.0031	0.0035	0.0040	0.0041	0.0026	0.0032	0.0007	0.0018	0.0017	0.0021
	0.8855	0.8685	0.8513	0.8467	0.9054	0.8771	0.9755	0.9334	0.9363	0.9218
Risk	-0.0292*	-0.0361**	-0.0299*	-0.0375**	-0.0279*	-0.0358**	-0.0297*	-0.0377**	-0.0319*	-0.0397**
	0.0744	0.0231	0.0661	0.0181	0.0882	0.0243	0.0703	0.0180	0.0520	0.0128
Profitability	-0.0015	-0.0010	-0.0013	-0.0009	-0.0015	-0.0009	-0.0017*	-0.0011	-0.0017*	-0.0011
	0.1063	0.2649	0.1494	0.3125	0.1187	0.3150	0.0770	0.2464	0.0683	0.2162
Constant	0.1059**	-0.1380**	0.0885*	-0.1248**	0.1326**	-0.1012	0.1633**	-0.0830	0.1285**	-0.1041*
	0.0374	0.0333	0.0744	0.0480	0.0100	0.1153	0.0015	0.1983	0.0106	0.1041
Observation	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430
Sector dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.0651	0.1242	0.0720	0.1264	0.0670	0.1255	0.0649	0.1241	0.0630	0.1217
F-statistics	9.2935***	9.4464***	10.2368***	9.6118***	9.5575***	9.5482***	8.6336***	9.0952***	8.3917***	8.9197***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.106: Interaction between Group Pyramid Dummy and Inside Ownership, Ownership Disparity . . . when Dep. Variable is Dividend Payout Ratio-OLS

Variable	DPR									
Group pyramid dummy	-0.1865***	-0.1226**	-0.1288	-0.0705	-0.1032**	-0.0511	-0.1157**	-0.0609	-0.160***	-0.1043**
	0.0001	0.0129	0.0496	0.2744	0.0417	0.3114	0.0118	0.1838	0.0003	0.0214
Inside Own	-0.0600*	-0.0309	-0.0574*	-0.0275	-0.0541*	-0.0248	-0.0794**	-0.0421	-0.0838***	-0.0467
	0.0640	0.3564	0.0773	0.4121	0.0953	0.4599	0.0139	0.2078	0.0094	0.1611
Own Disparity	0.1152***	0.0696*	0.1215***	0.0720	0.1062***	0.0599	0.0956**	0.0508	0.0968**	0.0520
	0.0047	0.0881	0.0082	0.1181	0.0064	0.1248	0.0141	0.1919	0.0131	0.1823
Inst Own	0.2257***	0.2066***	0.2269***	0.2075***	0.2493***	0.2251***				
	0.0001	0.0003	0.0001	0.0003	0.0000	0.0001				
Domestic Pvt. Inst							0.2749***	0.2647***	0.2460***	0.243***
							0.0002	0.0003	0.0008	0.0007
Govt. Inst							-0.0670	-0.0008	-0.0602	-0.0063
							0.4967	0.9932	0.5561	0.9507
GA*Inside Own	0.2413	0.2583								
	0.4051	0.3712								
GA*Own Disparity			-0.0544	-0.0429						
			0.5070	0.5960						
GA*Inst Own					-0.5071*	-0.3920				
					0.0543	0.1301				
GA*Domestic Pvt. Inst							-0.7944**	-0.6452*		
							0.0367	0.0860		
GA*Govt. Inst									-0.0486	0.1094
									0.8973	0.7741
Slack	0.1521**	0.1065	0.1505**	0.1049	0.1469**	0.1027	0.1536**	0.1063	0.1567**	0.1072
	0.0292	0.1203	0.0309	0.1259	0.0350	0.1337	0.0276	0.1207	0.0249	0.1182
Listage	-0.0015***	-0.0014**	-0.0015**	-0.0014**	-0.0016***	-0.0014**	-0.0016***	-0.0015**	-0.0015***	-0.0015**
	0.0093	0.0192	0.0109	0.0212	0.0071	0.0176	0.0081	0.0157	0.0095	0.0155
Leverage	-0.0532***	-0.045***	-0.0532***	-0.045***	-0.0498***	-0.042***	-0.050***	-0.043***	-0.053***	-0.046***
	0.0005	0.0028	0.0005	0.0029	0.0012	0.0055	0.0011	0.0050	0.0005	0.0027
Size	0.0179***	0.0258***	0.0178***	0.0256***	0.0187***	0.0262***	0.0180***	0.0255***	0.0173***	0.0253***
	0.0006	0.0000	0.0006	0.0000	0.0003	0.0000	0.0006	0.0000	0.0010	0.0000
Growth	0.0038	0.0048	0.0039	0.0047	0.0032	0.0044	0.0018	0.0030	0.0023	0.0033
	0.8592	0.8194	0.8559	0.8229	0.8810	0.8346	0.9341	0.8866	0.9127	0.8764
Risk	-0.0293*	-0.0378**	-0.0289*	-0.0373**	-0.0294*	-0.0377**	-0.0330**	-0.0407**	-0.0322**	-0.0402**
	0.0717	0.0170	0.0754	0.0183	0.0697	0.0173	0.0423	0.0102	0.0482	0.0113
Profitability	-0.0014	-0.0009	-0.0014	-0.0009	-0.0016*	-0.0011	-0.0017*	-0.0012	-0.0016*	-0.0011
	0.1426	0.3251	0.1380	0.3092	0.0818	0.2208	0.0757	0.2031	0.0894	0.2563
Constant	0.0866**	-0.1238**	0.0852*	-0.1229**	0.0750	-0.1318**	0.1071**	-0.0980	0.1170**	-0.0976
	0.0798	0.0495	0.0853	0.0512	0.1315	0.0373	0.0323	0.1235	0.0191	0.1298
Observation	1430	1430	1430	1430	1430	1430	1430	1430	1430	1430
Sector dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adj.R-square	0.0743	0.1274	0.0741	0.1271	0.0762	0.1284	0.0743	0.1271	0.0715	0.1253
F-statistics	10.5518***	9.6950***	10.5288***	9.6698***	10.8255***	9.7675***	9.8281***	9.3230***	9.4638***	9.189***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

Table 4.107 reports the group affiliation interaction results using random-effect Generalized Least Square estimations. The statistics suggest that relationships are consistent with OLS results. However, these vary in the level of significance. Table 4.108 gives the group pyramid interaction results using random-effect Generalized Least Square estimations. The statistics suggest that impact of inside ownership, ownership disparity, institutional ownership, domestic private institutional ownership, government ownership and slack is not significantly different for pyramidal group firms than standalone firms.

4.3.3 Business Groups and Dividend Policy-Relational Ownership, Ownership Concentration and Institutional Ownership

Table 4.109, 4.110 and 4.111 report the statistics of regression results of OLS. Dividend payout ratio is used as a proxy of dividend policy. The analyses are presented across various panels. Panel A demonstrates the results of Group affiliation dummy analyses. Panel B reports the results of Group pyramid dummy analyses. Similarly, Panel C gives the results of Group diversification dummy analyses. Besides group affiliation/group pyramid or group diversification dummy, the other explanatory variables include agency costs variables of Relational Own (Relational ownership), Own Concentration (ownership Concentration), Inst Own (institutional ownership), Domestic Pvt. Inst (domestic private institutional ownership), Govt. Inst (Government institutional ownership) and Slack; and the transaction costs variables of include Leverage, Growth and Risk. Finally, List age, Size and Profitability are included as control variables in the regression model.

Panel A of Table 4.109 presents the results of Group affiliation dummy analyses. The results show that Group affiliation dummy is consistently negatively related to Dividend payout ratio. The figures again confirm that group firms pay significantly lower dividends than corresponding standalone firms. The results support the expropriation hypothesis and managerial opportunism hypothesis.

TABLE 4.107: Interaction between Group Affiliation and Inside Ownership, Ownership Disparity . . . when Dep. Variable is Dividend Payout Ratio-RE-GLS

Variable	DPR				
Group affiliation dummy	0.0195	-0.0056	-0.0414	-0.0335	-0.0117
	0.6016	0.8142	0.1514	0.2119	0.6566
Inside Own	0.0102	-0.0414	-0.0481	-0.0604	-0.0586
	0.8700	0.3271	0.2549	0.1525	0.1656
Own Disparity	-0.0457	0.0528	-0.0437	-0.0492	-0.0503
	0.1721	0.4146	0.1910	0.1399	0.1318
Inst Own	0.0644	0.0683	-0.0733		
	0.3367	0.3079	0.5318		
Domestic Pvt. Inst				-0.1036	0.0619
				0.4547	0.4706
Govt. Inst				-0.1063	-0.0811
				0.3900	0.7491
GA*Inside Own	-0.0906				
	0.2208				
GA*Own Disparity		-0.1247*			
		0.0803			
GA*Inst Own			0.2010		
			0.1474		
GA*Domestic Pvt. Inst				0.2641	
				0.1274	
GA*Govt. Inst					-0.0388
					0.8929
Slack	0.0141	0.0133	0.0102	0.0092	0.0143
	0.8317	0.8409	0.8771	0.8894	0.8288
Listage	-0.0013	-0.0013	-0.0013	-0.0015*	-0.0014
	0.1412	0.1312	0.1225	0.0942	0.1118
Leverage	-0.0395**	-0.0394**	-0.0398**	-0.0399**	-0.0402**
	0.0232	0.0236	0.0223	0.0220	0.0214
Size	0.0263***	0.0267***	0.0265***	0.0261***	0.0264***
	0.0004	0.0003	0.0003	0.0004	0.0004
Growth	0.0052	0.0059	0.0052	0.0049	0.0051
	0.7828	0.7566	0.7833	0.7956	0.7895
Risk	-0.0213	-0.0215	-0.0212	-0.0225	-0.0234
	0.1586	0.1550	0.1607	0.136	0.1212
Profitability	-0.0002	-0.0002	-0.0001	-0.0002	-0.0003
	0.8254	0.8259	0.8878	0.8648	0.7924
Constant	-0.1342	-0.1132	-0.0928	-0.0772	-0.0921
	0.1209	0.1786	0.2753	0.3653	0.2792
Observation	1430	1430	1430	1430	1430
Sector dummy	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.0402	0.0416	0.0408	0.04	0.0383
F-statistics	3.4959***	3.5832***	3.535***	3.3801***	3.2782***
Chi-square	44.6003***	42.4885***	44.4776***	46.1446***	46.2713***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.108: Interaction between Group Pyramid Dummy and Inside Ownership, Ownership Disparity . . . when Dep. Variable is Dividend Payout Ratio-RE-GLS

Variable	DPR				
Group pyramid dummy	-0.1515**	-0.0925	-0.0775	-0.1007*	-0.1056*
	0.0208	0.2344	0.2042	0.0789	0.0667
Inside Own	-0.0471	-0.0442	-0.0419	-0.0570	-0.0589
	0.2612	0.2931	0.3182	0.1734	0.1599
Own Disparity	0.0584	0.0544	0.0418	0.0368	0.0356
	0.2850	0.3888	0.4107	0.4687	0.4848
Inst Own	0.0623	0.0624	0.0790		
	0.3516	0.3518	0.2481		
Domestic Pvt. Inst				0.0755	0.0597
				0.3863	0.4854
Govt. Inst				-0.1256	-0.1113
				0.3066	0.3793
GA*Inside Own	0.3093				
	0.3485				
GA*Own Disparity		-0.0399			
		0.6950			
GA*Inst Own			-0.3375		
			0.2270		
GA*Domestic Pvt. Inst				-0.3055	
				0.4467	
GA*Govt. Inst					-0.2437
					0.5902
Slack	0.0120	0.0109	0.0111	0.0115	0.0096
	0.8562	0.8692	0.8667	0.8615	0.8839
Listage	-0.0014*	-0.0014	-0.0014*	-0.0015*	-0.0015*
	0.1027	0.1065	0.0980	0.0882	0.0850
Leverage	-0.0378**	-0.0376**	-0.0352**	-0.0360**	-0.0371**
	0.0298	0.0310	0.0436	0.0390	0.0333
Size	0.0272***	0.027***	0.0274***	0.0268***	0.027***
	0.0002	0.0002	0.0002	0.0002	0.0002
Growth	0.0060	0.0060	0.0059	0.0057	0.0058
	0.7518	0.7516	0.7547	0.7649	0.7596
Risk	-0.0214	-0.0212	-0.0217	-0.0233	-0.0228
	0.1563	0.1599	0.1493	0.1230	0.1303
Profitability	-0.0002	-0.0002	-0.0003	-0.0003	-0.0003
	0.8386	0.8255	0.7363	0.7591	0.7676
Constant	-0.1132	-0.1119	-0.1186	-0.0900	-0.0957
	0.1776	0.1827	0.1581	0.2859	0.2604
Observation	1430	1430	1430	1430	1430
Sector dummy	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.0430	0.0424	0.0436	0.0425	0.0418
F-statistics	3.6725***	3.6392***	3.7113***	3.5373***	3.4958***
Chi-square	42.8168***	43.3313***	43.8365***	47.6227***	47.083***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

The results of agency costs variables are explained below. Relational Own is positively related to Dividend payout ratio and the results are significant as well. Further, results show that institutional ownership significantly positively affects dividend policy. Similarly, domestic private institutional ownership seems strongly influential in affecting dividend payout (Moh'd et al., 1995). However, government institutional ownership is found insignificantly affecting dividend policy in Pakistan. The findings are highly consistent with the expectations and agency theory. Firm List age negatively affects dividend policy and the results are highly significant in all of the regression models. Slack consistently and significantly positively affects dividend policy (DeAngelo et al., 2004).

Leverage, growth and risk are the risk variables included in the regression models. The financial leverage significantly affects dividend policy. It affects dividend policy negatively. In the same lines, firm risk level strongly negatively affects its dividend policy and the relationship is highly consistent with the expectations. In contrast to expectations, firm growth and investment policies do not show significant impact on its dividend policy. The regression models include a couple of control variables like firm size and profitability. Firm size is an influential factor affecting dividend policy as shown in regression models presented in Panel A, B and C. Similarly, firm profitability shows a strong negative impact on dividend payout ratio.

Panel B of 4.110 presents the results of Group pyramid dummy analyses. The coefficients of Group pyramid dummy are negative in all of the regression models. The relationship is significant at higher levels of significance. Further, the negative coefficients are significantly higher for Group pyramid dummy than Group affiliation dummy which argues that pyramidal group firms pay significantly lower dividends than their counterpart standalone firms and the other group firms. The results support the Expropriation Hypothesis. Relational Own is significantly positively related to Dividend Payout Ratio. Both Inst Own and Domestic private inst variables are positively related to Dividend Payout Ratio. Firm List age significantly negatively affects dividend policy. In lines with agency theory, Slack affects positively the Dividend Payout Ratio and the results are highly significant.

Leverage and Risk variables significantly negatively affect firm dividend policy. Firm Size positively affects whereas Profitability significantly negatively affect the dividend policy of the firms.

Panel C of 4.111 presents the results of Group diversification dummy analyses. The statistics show that Group diversification dummy is negative and the results are highly significant in all of the regression models. These reported figures strongly confirm that diversified group firms pay significantly lower dividends than non-diversified standalone firms in Pakistan. The results support the Expropriation Hypothesis. The results corroborate that Relational Own significantly positively affect firm dividend policy. Own Concentration consistently negatively affects dividend policy and results are highly significant. These findings are consistent with Agency Theory. Further, rest of the variables show similar results to Panel A and B explained above.

Table 4.112 present the random-effect Generalized Least Square estimation results. Group affiliation dummy is negatively related with dividend payout ratio and however, the results are not highly significant. Similarly, Group pyramid dummy is also inversly related with dividend payout ratio and the results are highly significant. The findings suggest that group firms pay lower dividends than standalone firms. Further, Group diversification dummy is significantly negatively related to Dividend Payout Ratio and the results are highly significant. The findings confirm that diversified business groups pay significantly lower dividends than least/or non-diversified firms in Pakistan.These findings are consistent with OLS results and are aligned with the expropriation hypothesis.

Moreover, the results reveal that Relational Own positively affects dividend policy whereas Own Concentration affects negatively firm dividend policy. Both Inst Ownership and Domestic Pvt Inst Own positively affect dividend payout ratio whereas Govt Inst show negative relationship with Dividend Payout Ratio. Slack variable shows positive relationship whereas firm listing exposure negatively affects Dividend Payout Ratio. The results are aligned with agency theory.

TABLE 4.109: Panel A: Group Affiliation and Relational Ownership, Ownership Concentration . . . and Dividend Policy-OLS

Variable	DPR			
Group affiliation dummy	-0.0336**	-0.0133	-0.0251	-0.0075
	0.0440	0.4225	0.1356	0.652
Relational Own	0.0644*	0.0414	0.0617*	0.037
	0.0552	0.2316	0.0669	0.2849
Own Concentration	-0.0343	-0.0521	-0.0335	-0.0513
	0.4143	0.2174	0.4294	0.2269
Inst Own	0.2821***	0.2302***		
	0.0000	0.0000		
Domestic Pvt. Inst			0.3158***	0.2727***
			0.0000	0.0001
Govt. Inst			0.0149	0.0354
			0.8783	0.7109
Slack	0.1663**	0.1111*	0.1796**	0.1172*
	0.0175	0.1050	0.0105	0.0879
Listage	-0.0013**	-0.0013**	-0.0013**	-0.0014**
	0.0357	0.031	0.0274	0.0206
Leverage	-0.0569***	-0.0472***	-0.0562***	-0.047***
	0.0002	0.0018	0.0003	0.0019
Size	0.0167***	0.0247***	0.0161***	0.0244***
	0.0018	0.0000	0.0028	0.0000
Growth	0.0034	0.0043	0.0006	0.0020
	0.8748	0.8377	0.9777	0.9245
Risk	-0.0281*	-0.0372**	-0.0301*	-0.0392**
	0.0838	0.0188	0.0654	0.0136
Profitability	-0.0016*	-0.0010	-0.0018*	-0.0012
	0.0851	0.2789	0.0561	0.2138
Constant	0.0907*	-0.1096*	0.1046*	-0.0987
	0.0892	0.0958	0.0529	0.1383
Observation	1430	1430	1430	1430
Sector dummy	No	Yes	No	Yes
Adj.R-square	0.0659	0.1252	0.0604	0.1225
F-statistics	10.1617***	9.888***	8.6582***	9.3106***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.110: Panel B: Group Pyramids and Relational Ownership, Ownership Concentration ... and Dividend Policy-OLS

Variable	DPR			
Group pyramid dummy	-0.1466***	-0.0924***	-0.1448***	-0.0943***
	0.0000	0.0075	0.0000	0.0066
Relational Own	0.1738***	0.1112**	0.1740***	0.1118**
	0.0001	0.0117	0.0001	0.0117
Own Concentration	-0.0050	-0.0361	-0.0076	-0.0377
	0.9048	0.3905	0.8567	0.3732
Inst Own	0.2611***	0.2186***		
	0.0000	0.0000		
Domestic Pvt. Inst			0.2952***	0.2645***
			0.0000	0.0001
Govt. Inst			-0.0159	0.0135
			0.8676	0.8865
Slack	0.1540**	0.1033	0.1649**	0.1076
	0.0269	0.1309	0.0181	0.1160
Listage	-0.0015**	-0.0015**	-0.0015**	-0.0015**
	0.0104	0.0161	0.0105	0.0126
Leverage	-0.0511***	-0.0440***	-0.0509***	-0.0442***
	0.0008	0.0035	0.0009	0.0034
Size	0.0153***	0.0239***	0.0153***	0.0238***
	0.0033	0.0000	0.0035	0.0000
Growth	0.0042	0.0052	0.0021	0.0034
	0.8454	0.8046	0.9216	0.8712
Risk	-0.0305*	-0.0391**	-0.0330**	-0.0416***
	0.0596	0.0132	0.0421	0.0087
Profitability	-0.0016*	-0.0010	-0.0017*	-0.0012
	0.0933	0.2679	0.0637	0.2074
Constant	0.0610	-0.1106*	0.0774	-0.0969
	0.2542	0.0917	0.1526	0.1443
Observation	1430	1430	1430	1430
Sector dummy	No	Yes	No	Yes
Adj.R-square	0.0754	0.1292	0.0708	0.1270
F-statistics	11.5979***	10.217***	10.0797***	9.6586***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.111: Panel C: Group Diversification and Relational Ownership, Ownership Concentration . . . and Dividend Policy-OLS

Variable	DPR			
Group diversification dummy	-0.0442***	-0.0529***	-0.0385**	-0.0503***
	0.0064	0.001	0.0176	0.0018
Relational Own	0.0754**	0.0665*	0.0733**	0.0629*
	0.0269	0.0567	0.0322	0.0717
Own Concentration	-0.0442	-0.0716*	-0.0432	-0.0712*
	0.2955	0.091	0.3117	0.0953
Inst Own	0.2879***	0.2437***		
	0.0000	0.0000		
Domestic Pvt. Inst			0.3247***	0.2876***
			0.0000	0.0000
Govt. Inst			0.0110	0.0482
			0.9087	0.6110
Slack	0.1671**	0.1019	0.1792**	0.1071
	0.0166	0.1356	0.0104	0.1173
Listage	-0.0013**	-0.0012*	-0.0013**	-0.0013**
	0.0369	0.0531	0.0317	0.0398
Leverage	-0.0553***	-0.0476***	-0.0550***	-0.0477***
	0.0003	0.0015	0.0003	0.0015
Size	0.0176***	0.0279***	0.0172***	0.0278***
	0.0010	0.0000	0.0014	0.0000
Growth	0.0018	0.0046	-0.0004	0.0026
	0.9322	0.8270	0.9843	0.8998
Risk	-0.0286*	-0.0397**	-0.0309*	-0.0419***
	0.0784	0.0117	0.0585	0.0080
Profitability	-0.0015	-0.0007	-0.0017*	-0.0009
	0.1220	0.4273	0.0792	0.3369
Constant	0.0810	-0.1286*	0.0969*	-0.1161*
	0.1293	0.0504	0.0731	0.0810
Observation	1430	1430	1430	1430
Sector dummy	No	Yes	No	Yes
Adj.R-square	0.0681	0.1315	0.0627	0.1284
F-statistics	10.4932***	10.4046***	8.9639***	9.7746***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.112: Panel A, B & C: Group Affiliation/Group Pyramid/Group Diversification, Relational Ownership, Ownership Concentration ... and Dividend Policy-RE-GLS

Variable	DPR					
Group affiliation dummy	-0.0162	-0.0118				
	0.4903	0.6171				
Group pyramid dummy			-0.1078**	-0.1109***		
			0.0118	0.0099		
Group diversification dummy					-0.0601***	-0.0576**
					0.0081	0.0114
Relational Own	0.0073	0.004	0.0874	0.0892	0.0314	0.0282
	0.8741	0.9298	0.1211	0.1153	0.4928	0.5393
Own Concentration	-0.0454	-0.0469	-0.0256	-0.0282	-0.0621	-0.0636
	0.4002	0.3871	0.6348	0.6021	0.2482	0.2398
Inst Own	0.0947		0.0859		0.1092*	
	0.1376		0.1752		0.0849	
Domestic Pvt. Inst	0.0963			0.0926		0.112
		0.2474		0.2651		0.1769
Govt. Inst		-0.078		-0.1		-0.0648
		0.5198		0.4063		0.5889
Slack	0.0185	0.0199	0.0145	0.0154	0.016	0.0174
	0.7799	0.7636	0.8262	0.815	0.8079	0.792
Listage	-0.0013	-0.0014	-0.0014*	-0.0015*	-0.0011	-0.0012
	0.1339	0.1086	0.0977	0.0835	0.1927	0.1633
Leverage	-0.0388**	-0.0381**	-0.0367**	-0.0362**	-0.0393**	-0.0387**
	0.0253	0.0283	0.0341	0.0371	0.0227	0.0251
Size	0.0265***	0.0260***	0.0257***	0.0255***	0.0290***	0.0287***
	0.0003	0.0004	0.0004	0.0005	0.0001	0.0001
Growth	0.0057	0.0051	0.0062	0.0057	0.0059	0.0053
	0.7631	0.79	0.746	0.7627	0.7557	0.7786
Risk	-0.0209	-0.0223	-0.0217	-0.0233	-0.0222	-0.0237
	0.1657	0.1401	0.1485	0.1213	0.14	0.1162
Profitability	-0.0002	-0.0003	-0.0003	-0.0003	-0.0001	-0.0001
	0.8214	0.7914	0.7857	0.7542	0.9189	0.8822
Constant	-0.1108	-0.096	-0.116	-0.0992	-0.1241	-0.1079
	0.2077	0.2791	0.1853	0.2615	0.1543	0.2196
Observation	1430	1430	1430	1430	1430	1430
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.0395	0.0379	0.0436	0.0424	0.045	0.0431
F-statistics	3.5568***	3.3477***	3.8299***	3.6367***	3.9285***	3.6807***
Chi-square	43.6105***	45.9981***	42.1627***	44.2843***	45.1865***	47.9679***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

4.3.3.1 Group Affiliation Interaction Analyses

Table 4.113 reports the results of interaction analyses using OLS and RE-GLS. The interaction between group affiliation and relational ownership shows a significantly negative coefficient value of GA*Relational Own whereas the coefficient of Relational Own is significantly positive. The findings strongly suggest that negatively affect dividend policy of group firms whereas its impact is positive in standalone firms. Similarly, GA*Own Concentration is significantly negative and Own concentration is significantly positive. The figures suggest that ownership concentration negatively affects dividend policy of group firms whereas contrarily it affects positively in standalone firms. The group affiliation interactive dummy results using random-effect Generalized Least Square show that both GA dummy*Relational Own and GA dummy*Own Concentration are negative indicating that relational ownership and ownership concentration negatively affects firm dividend policy in Pakistan. The results are consistent with the OLS results.

4.3.4 Business Groups, Internationalization Strategy and Firm Dividend Policy

Multinational corporations are well pronounced around the world. The technological and resources capability, entrepreneur skill and internal corporate governance system are some of the key factors making them different from the domestic firms. A significant number of MNCs' are operating in Pakistan and there is an utmost need to study their dividend policy to provide empirical evidence and guidance helping investors in making their investment decisions.

Tables 4.114 demonstrates the OLS regression results. Table 4.114 presents the results showing the dividend payout ratio for domestic group affiliated firms and foreign subsidiaries relative to domestic standalone firms in Pakistan. Group affiliation dummy is significantly negative whereas Foreign subsidiary dummy is significantly positive indicating that Pakistani business group affiliated firms pay lower dividend but on the other hand, foreign subsidiaries operating in Pakistan pay higher dividends than Pakistani standalone firms. Inside Own is negatively

TABLE 4.113: Interaction between Group Affiliation and Relational Ownership, Ownership Concentration ... when Dep. Variable is Dividend Policy

Variable	DPR					
	OLS				RE-GLS	
Group affiliation dummy	-0.0002	0.1229**	0.0036	0.1697***	0.002	0.1542**
	0.9937	0.019	0.8515	0.0010	0.9411	0.0224
Relational Own	0.2388***	0.0768**	0.1321**	0.0532	0.1077	0.0186
	0.0001	0.0227	0.0371	0.1239	0.1994**	0.6835
Own Concentration	-0.0307	0.1176*	-0.0501	0.1257**	-0.0431	0.1168
	0.4630	0.0656	0.2351	0.0467	0.4241	0.1481
Inst Own	0.2748***	0.2653***	0.2273***	0.208***	0.094	0.0813
	0.0000	0.0000	0.0000	0.0001	0.1403	0.2018
GA*Relational Own	-0.2388***		-0.1239*		-0.1377	
	0.0009		0.0876		0.1534	
GA*Own Concentration		-0.2585***		-0.3013***		-0.2795***
		0.0016		0.0002		0.0072
Slack	0.1211**	0.1131**	0.1131*	0.1024	0.0198	0.0138
	0.05000	0.0713	0.0988	0.1335	0.7644	0.834
Listage	-0.0014**	-0.0012**	-0.0014**	-0.0012**	-0.0014	-0.0012
	0.0222	0.0445	0.0232	0.0459	0.1183	0.1589
Leverage	-0.0516***	-0.0543***	-0.0446***	-0.0442***	-0.0374	-0.0377**
	0.0008	0.0004	0.0033	0.0033	0.0317**	0.0292
Size	0.0174***	0.016***	0.0249***	0.0235**	0.0265	0.0251***
	0.0011	0.0026	0.0000	0.0000	0.0003***	0.0006
Growth	0.0045	0.0033	0.0047	0.0035	0.0061	0.0054
	0.8349	0.8769	0.8226	0.8654	0.7499	0.7749
Risk	-0.0289*	-0.0278*	-0.0373**	-0.0371**	-0.0201	-0.02
	0.0743	0.0863	0.0181	0.0185	0.1822	0.1829
Profitability	-0.0014	-0.0016*	-0.0009	-0.0010	-0.0002	-0.0002
	0.1243	0.0963	0.3110	0.2989	0.8315	0.8262
Constant	0.0625	-0.0014	-0.1172*	-0.2082***	-0.117	-0.1975**
	0.2454	0.9819	0.0755	0.0032	0.184	0.0339
Observation	1430	1430	1430	1430	1430	1430
Sector dummy	No	No	Yes	Yes	Yes	Yes
Adj.R-square	0.0724	0.0717	0.1263	0.1333	0.0403	0.0446
F-statistics	10.298***	10.203***	9.6108***	10.1577***	3.4976***	3.7810***
Chi-square					42.6716***	42.0273***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

related to Dividend Payout Ratio. Inst Own and Domestic Pvt Inst variables are significantly positively related to Dividend Payout Ratio. Leverage, Risk and Profitability variables show negative relationship whereas Size variable shows positive relationship with Dividend Payout Ratio.

The results in Table 4.114 further show the dividend payout ratio for domestic pyramidal group firms and foreign subsidiaries relative to domestic standalone firms in Pakistan. Group pyramid dummy is negative whereas Foreign subsidiary dummy is positive and results are significant at conventional level. The findings suggest that Pakistani pyramidal group firms pay lower dividend and importantly foreign subsidiaries pay higher dividends than corresponding standalone firms. Inside Own is negatively related and both Inst Own and Domestic Pvt Inst variables are positively related to Dividend Payout Ratio. Further, Leverage, Risk and Profitability variables are negatively related and finally Size variable is positively related to Dividend Payout Ratio.

TABLE 4.114: Dividend Policy of Domestic BGs, Foreign Subsidiaries and Domestic Standalone Firms-OLS

Variable	DPR							
Group affiliation dummy	-0.0362**	-0.0140	-0.0306*	-0.0106				
	0.0350	0.4099	0.0765	0.5336				
Group pyramid dummy					-0.1553***	-0.0921**	-0.1555***	-0.0922**
					0.0001	0.0182	0.0001	0.0184
Foreign subsidiary dummy	0.1588***	0.0615*	0.1594***	0.0622*	0.0860**	0.0162	0.0816**	0.0143
	0.0000	0.0616	0.0000	0.0592	0.0259	0.6720	0.0350	0.7095
Inside Own	-0.0773**	-0.0451	-0.0974***	-0.0578*	-0.0805**	-0.0487	-0.1024***	-0.0630*
	0.0222	0.1930	0.0038	0.0945	0.0166	0.1568	0.0022	0.0665
Own Disparity	-0.0152	-0.0087	-0.0226	-0.0146	0.0854**	0.0499	0.0782**	0.0438
	0.5587	0.7356	0.3847	0.5684	0.0188	0.1618	0.0311	0.2180
Inst Own	0.2046***	0.2029***			0.1871***	0.1946***		
	0.0004	0.0003			0.0012	0.0006		
Domestic Pvt. Inst			0.2184***	0.2294***			0.2025***	0.2214***
			0.0035	0.0017			0.0066	0.0025
Govt. Inst			-0.0302	0.0505			-0.0630	0.0330
			0.7615	0.6044			0.5228	0.7334
Slack	0.0290	-0.0262	0.0363	-0.0224	0.0259	-0.0279	0.0318	-0.0247
	0.6695	0.6923	0.5937	0.7357	0.7019	0.6726	0.6383	0.7083
Listage	-0.0005	-0.0009	-0.0005	-0.0009	-0.0007	-0.0009	-0.0007	-0.0009*
	0.3676	0.1461	0.3497	0.1277	0.1960	0.1092	0.2071	0.1029
Leverage	-0.061***	-0.0477***	-0.0611***	-0.0478***	-0.0545***	-0.0441***	-0.0550***	-0.0446***
	0.0001	0.0013	0.0001	0.0013	0.0003	0.0029	0.0003	0.0027
Size	0.0182***	0.0293***	0.0172***	0.0290***	0.0179***	0.0292***	0.0172***	0.0290***
	0.0005	0.0000	0.0011	0.0000	0.0005	0.0000	0.0008	0.0000
Growth	0.0204	0.0235	0.0184	0.0218	0.0204	0.0240	0.0189	0.0227
	0.3484	0.2651	0.3961	0.3008	0.3459	0.2527	0.3809	0.2815
Risk	-0.0397**	-0.0466***	-0.0427**	-0.0488***	-0.0379**	-0.0459***	-0.0414**	-0.0483***
	0.0164	0.0037	0.0102	0.0024	0.0212	0.0041	0.0123	0.0026
Profitability	-0.0020**	-0.0013	-0.0021**	-0.0014	-0.0019*	-0.0012	-0.0019**	-0.0013
	0.0364	0.1609	0.0290	0.1492	0.0529	0.1862	0.0429	0.1735**
Constant	0.0963*	-0.1714***	0.1221**	-0.1576**	0.0818*	-0.1688***	0.1098**	-0.1528**
	0.0510	0.0063	0.0140	0.0129	0.0965	0.0070	0.0267	0.0157
Observation	1643	1643	1643	1643	1643	1643	1643	1643
Sector dummy	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.0999	0.1632	0.0975	0.1611	0.1061	0.1657	0.1043	0.1637
F-statistics	16.1894***	14.3386***	14.6384***	13.6092***	17.2375***	14.5866***	15.7154***	13.8602***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

Table 4.115 reports the regression results showing the Dividend Payout Ratio for foreign subsidiaries under the control (beyond ownership like leadership e.g., CEO or chairman of the board is the key member of any Pakistani business group) of Pakistani business groups relative to foreign subsidiaries (those foreign subsidiaries where domestic business group has no substantial control) operating in Pakistan. BG Catch-up dummy represents those foreign subsidiaries under the domestic business group's control. BG Catch-up dummy is significantly negative indicating that these firms are paying lower dividends than foreign subsidiaries. The lower dividend payout ratio for foreign subsidiaries with substantial link with Pakistani business groups suggest that these business groups enjoy same foreign technology and resources as other foreign subsidiaries have but even then paying lower dividends. This may be internal corporate governance problem that stimulate them tunneling firm resources instead giving surplus funds to minority shareholders.

Table 4.116 demonstrate the results of random effect Generalized Least Square estimations. The results confirm the OLS regression results. The findings indicate that both domestic group firms and domestic pyramidal group firms pay lower dividends than domestic standalone firms. Further, Catch-up dummy (foreign subsidiaries under Pakistani business group operating control) shows that these firms pay lower dividends than other foreign subsidiaries operating in Pakistan.

TABLE 4.115: Dividend Policy of BGs having Access to Foreign Technology Catch-up-OLS

Variable	DPR			
BG catch-up dummy	-0.1114**	-0.0878	-0.1192**	-0.0999*
	0.0358	0.1167	0.0230	0.0740
Inside Own	-0.9861**	-0.7797	-0.9399*	-0.6696
	0.0410	0.1093	0.0503	0.1689
Own Disparity	-0.1839*	-0.1588	-0.1699*	-0.1887*
	0.0855	0.1300	0.1053	0.0712
Inst Own	-0.4511	0.6509*		
	0.1155	0.0757		
Domestic Pvt. Inst			-1.4900***	-0.2829
			0.0032	0.6204
Govt. Inst			0.0038	1.2169
			0.9924	0.0127
Slack	-0.7060***	-0.6947***	-0.7412***	-0.7323***
	0.0014	0.0011	0.0007	0.0005
Listage	0.0041**	0.0040**	0.0045**	0.0042**
	0.0251	0.0370	0.0119	0.0302
Leverage	-0.0401	-0.0259	-0.0164	-0.0158
	0.4696	0.6215	0.7668	0.7644
Size	-0.0125	0.0303	-0.0247	0.0260
	0.5455	0.1829	0.2428	0.2678
Growth	0.1757*	0.2615***	0.1489	0.2384**
	0.0747	0.0056	0.1281	0.0113
Risk	-0.1456*	-0.1026	-0.1137	-0.0829
	0.0769	0.2184	0.1664	0.3210
Profitability	-0.0103*	-0.0179***	-0.0117**	-0.0105*
	0.0996	0.0056	0.0467	0.0653
Constant	0.6902***	0.0718	0.7934***	0.1281
	0.0044	0.8310	0.0011	0.7054
Observation	213	213	213	213
Sector dummy	No	Yes	No	Yes
Adj.R-square	0.1088	0.2176	0.1323	0.2300
F-statistics	3.3534***	4.4692***	3.6932***	4.5183***

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

TABLE 4.116: Dividend Policy of Domestic BGs, Foreign Subsidiaries, Domestic Standalone Firms and BGs having Access to Foreign Technology Catch-up-RE-GLS

Variable	DPR					
Group affiliation dummy	-0.0175	-0.0153				
	0.4750	0.5355				
Group pyramid dummy			-0.1133**	-0.1158**		
			0.0212	0.0188		
Foreign subsidiary dummy	0.0666	0.0672	0.0156	0.0129		
	0.1644	0.1629	0.7654	0.8057		
BG catch up dummy					-0.0548	-0.0651
					0.5814	0.5185
Inside Own	-0.0568	-0.0666	-0.0600	-0.0712*	-0.5424	-0.5761
	0.1955	0.1289	0.1684	0.1025	0.3285	0.3015
Own Disparity	-0.0341	-0.0384	0.0336	0.0309	-0.0618	-0.0935
	0.2849	0.2258	0.4372	0.4744	0.5579	0.3799
Inst Own	0.0565		0.0498		0.3953	
	0.4013		0.4588		0.3631	
Domestic Pvt. Inst		0.0447		0.0390		-0.1886
		0.6121		0.6576		0.7720
Govt. Inst		-0.0689		-0.0909		0.9517
		0.5776		0.4609		0.1255
Slack	-0.1129*	-0.1124*	-0.1145*	-0.1142*	-0.6743***	-0.7024***
	0.0730	0.0741	0.0686	0.0692	0.0003	0.0002
Listage	-0.0011	-0.0011	-0.0012	-0.0012	0.0001	0.0005
	0.1938	0.1768	0.1535	0.1428	0.9878	0.8958
Leverage	-0.0316*	-0.0315*	-0.0289*	-0.0288*	0.0018	0.008
	0.0572	0.0588	0.0816	0.0828	0.9702	0.8722
Size	0.0312***	0.0308***	0.0311***	0.0308***	0.0500	0.0486
	0.0000	0.0000	0.0000	0.0000	0.1309	0.1541
Growth	0.024	0.0236	0.0243	0.0240	0.1868**	0.1757**
	0.2039	0.2113	0.1977	0.2025	0.0235	0.0345
Risk	-0.0278*	-0.0288*	-0.0266*	-0.0278*	-0.0753	-0.0643
	0.0679	0.0582	0.0800	0.0678	0.3547	0.4371
Profitability	-0.0004	-0.0004	-0.0003	-0.0003	-0.0085	-0.0033
	0.7309	0.7286	0.7835	0.7784	0.3044	0.6126
Constant	-0.1677	-0.1536	-0.1641	-0.1476	-0.2814	-0.2346
	0.0484	0.0728	0.0526	0.0835	0.5487	0.6246
Observation	1643	1643	1643	1643	213	213
Sector dummy	Yes	Yes	Yes	Yes	Yes	Yes
Adj.R-square	0.0597	0.0583	0.0625	0.0614	0.0624	0.0666
F-statistics	5.3409***	5.0693***	5.5584***	5.2943***	1.8296***	1.8397***
Chi-square	41.5809***	43.0438***	41.2908***	42.8223***	13.8213	13.0605

****, ** and * represent coefficients' significance at 1, 5 and 10%.*

Chapter 5

Conclusions and Policy Implications

5.1 Conclusions

Like many other emerging countries, BGs are well pronounced in the corporate sector of Pakistan. BGs are endogenous response to underdeveloped legal, financial and market institutions. In Pakistan, financial reforms, privatization and liberalization programs were initiated in early 1990s those strengthened the financial and product markets. A number of cross country studies were conducted in earlier [for instance Khanna and Rivkin (2001); Khanna and Yafeh (2005); Lins and Servaes (2002) among others] but these ignored Pakistan. Some other country specific studies [like Khanna and Palepu (2000b,a); Lee et al. (2008); He et al. (2013)] still missing the Pakistani context. The present study fills the gap and explores the dynamics of relationships of business groups in Pakistani context. The thesis is divided into three parts.

In the first part of thesis, the study sheds light on the group affiliation and group diversification-performance relationships as well as risk sharing behavior of business groups in a changing institutional setting. The study extends and supports

the institution based theory of corporate diversification by adding a dynamic, longitudinal and temporal component. It covers 20-years period having divided into 4 sub-periods e.g., 1993-1997, 1998-2002, 2003-2007 and 2008-2012.

The results of the whole sample period and sub-sample periods confirm that business groups underperform than standalone firms and there is gradual decrease in firm performance which proposes that affiliation with a diversified business group harms firms' value in Pakistan. The findings are consistent with agency theory and market failure theory. Being prone to underdeveloped markets infrastructure, business groups flourished aggressively in Pakistan during 1950's and 1960's. Despite the historical success, they tend to fall in performance because institutional infrastructure developed and business groups' advantageous effect disappeared. Further, business groups fall into serious agency problems among the controlling shareholders and external shareholders. The controlling shareholders in business groups engage in more diversification related activities and their investments are primarily motivated with the objective of maximizing their personal benefits rather than profit potentials of the investments. The diversification and investment activities are the root cause of agency conflicts which adversely affect firm performance.

However, the study finds some other sources of benefits to business groups like enjoying excess profitability and lower profits variability than standalone firms. The diversified business groups enjoy superior profitability than standalone firms in the whole sample period as well as in sub-sample periods. However, there is a continuous decline in profitability in each sub-period. The findings suggest that business groups play a significant role of risk sharing among their group affiliates. The business groups share resources like inputs, finance, managerial skills, information and markets among their group affiliates. They transfer funds from one firm with excess cash flows to another with shortage of funds. Business groups are more concerned with the group stability and thus provide co-insurance function for their affiliated firms for the survival of the business group.

In the second part of the thesis, the study investigates whether there is any difference in the ownership structure of the group firms than standalone firms and further if ownership structure affects differently the performance of group firms

relative to standalone firms in Pakistan? The study finds that group firms are substantially different in ownership structure than standalone firms and further ownership structure affects significantly differently the financial performance of the group firms than their corresponding standalone firms in Pakistan. The results strongly reveal that group firms fall into the problems of agency conflicts among controlling shareholders and minority shareholders and the focus of corporate governance shifts away from principal-agent conflicts to principal-principal conflicts. In group firms, controlling minority structures (CMS) are well pronounced. The ultimate controllers extend their control through different complex ownership and pyramidal structures and achieve control over many firms simultaneously with least cash flow rights. The disparity between ownership and control negatively affects the financial outcomes of the group firms in Pakistan.

In the third part of the thesis, the study attempts exploring whether ownership structure affects substantially differently the dividend policy of group affiliated firms in general and pyramidal group firms in particular relative to their corresponding standalone firms in Pakistan? The findings clearly demonstrate that both group affiliated firms as well as pyramidal firms pay significantly lower dividends than standalone firms and however, the strength of the relationship is stronger for pyramidal firms. The ultimate controllers in business groups are engaged in tunneling firms' resources away for their own benefits at the expense of minority shareholders and obviously dividend payments restrict firm resources at their disposal and reduce their tunneling potential directly. Therefore, these dominant ultimate controllers are more interested in the expansion and growth of firm in order to bring assets worth more under their control. In order to satisfy their objectives, these use control enhancing mechanism. The wider the disparity between ownership and control, the greater is the potential to discourage dividend decision because any discount in share price (as a result of conflicts among the controlling shareholders and minority shareholders) will cost them least. In pyramidal group firms, the ultimate controllers achieve their control over the firm through indirect shareholdings and there is no need to further invest capital for gaining control over the firm. These firms are prone to managerial opportunism because effective cash

flow interest of the ultimate controllers is relatively lower and further incentives for the expropriation of firm resources are greater; both of these led them to lower dividend policy.

5.2 Policy Implications

The study sheds light on the dynamics of business groups like financial performance, risk sharing and dividend policy in Pakistan. The findings indicate that business groups underperform than standalone firms and these suggest that lower performance of group affiliated firms is associated with agency conflicts among the shareholders. Ownership structure is the root cause of agency conflicts. The ultimate controllers use complex ownership and pyramidal structures to extend their control and tunnel firm resources for the maximization of their own wealth at the cost of external shareholders. The findings of the study recommend that regulatory bodies should strengthen the corporate governance system and its implementation should be made effective to restrict the potential of the dominant ultimate controllers having engaged in tunneling firm resources and depriving minority shareholders from their due interest. In Pakistan, there is no institution providing the information determining the ultimate ownership and control of the individuals and other institutional shareholders of the firm. There should be full disclosures of the ownership structures and measures should be taken to discourage ownership-control disparity. Dividend policy is the best tool to flow benefits to the shareholders and restrain them from the entrenched opportunistic controllers. Thus, steps should be taken to encourage firms paying dividends and ultimately, it will be beneficial in building confidence of the investors and mobilizing the savings-investment channel. The study provides useful information to policy makers, regulatory bodies, investors and managers. It also contributes to the literature of corporate finance and firm strategy.

5.3 Limitations of the Study

The study is restricted to non-financial sectors and the financial sector firms for instance mutual funds, banks, insurance and other financial service firms are excluded. The study employs a sample of firms listed on Karachi Stock Exchange. Although business groups are operating numerous private (non-listed) firms, these private firms are excluded. Further, government subsidiaries are also excluded. The inclusion of financial sector firms, private firms and government controlled firms is not appropriate while examining the non-financial sector firms due to several reasons. First, the objectives of the government controlled firms are different from non-government firms. These firms are welfare oriented rather focusing profits maximization. Private unlisted firms are excluded because of the non-availability and lack of reliability of the stock market related and ownership variables' data. Stock market prices are required for calculating Excess value and these share prices data is unavailable for private unlisted firms.

The basic reason of the exclusion of financial service firms is that these firms lack the compatibility of the basis and nature of operation with non-financial sector firms. Most importantly, government controlled firms, private firms and financial service firms are excluded from the sample so that the results of the study may be compared with the earlier studies conducted in the field of finance [like Berger and Ofek (1995); Khanna and Palepu (2000a); Claessens et al. (2002); MULLAINATHAN (2002); Lee et al. (2008)]. The findings of a study examining the non-financial sector firms along with government controlled firms, privately held firms and financial firms may seriously mislead the researchers.

5.4 Directions for Future Research

As the study is restricted to non-financial sectors and excluded the financial sector firms. The dynamics of business groups like financial performance, risk sharing and dividend policy should be explored in a financial sector in future.

Some other sources of costs and benefits to business groups like financial constraints, international diversification strategy, cross directorate-ship interlocking, cross-shareholding interlocking, family and social ties among others are needed to be explored in future. Further, the present study focuses group firms and it is necessary to examine these relationships within business groups. Most importantly, divergence between cash flow rights and control rights of the ultimate controllers causes serious agency conflicts that require further attention in future research.

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