DISSERTATION

Titel der Dissertation

Essays in Equity Ownership: A Case Study of Pakistan

Verfasser

Nadeem Aftab

Angestrebter akademischer Grad

Doktor der Sozial- und Wirtschaftswissenschaften (Dr. rer. soc. oec.)

Wien, im September 2009

In loving memory of my father, Aftab Ahmad.

Acknowledgements

Vienna, September 2009   Nadeem AFTAB

ii

Contents

List of Tables

List of Figures

x

Abbreviations

2SLS	Two stage least squares
CEO	Chief Executive Officer
CFO	Chief Financial Officer
COI	Certificates of Investment
DFI	Development Finance Institutions
DWH	Durbin-Wu-Hausman (Test of endogeneity)
e.g.	Exempli gratia (For example (Latin))
et al.	Et alii (And others (Latin))
GMM	Generalized methods of moments
ibid	Ibidem (At the same place (Latin))
ICAP	Institute of Chartered Accountants of Pakistan
i.e.	Id est (That is (Latin))
IFC	International Finance Commission
ISE	Islamabad Stock Exchange
IV	Instrumental variables
KSE	Karachi Stock Exchange
LSE	Lahore Stock Exchange
ln	Natural logarithm
NIT	National Investment Trust
NPV	Net present value
OLS	Ordinary least squares
PICG	Pakistan Institute of Corporate Governance
PKR	Pakistani Rupee
R&D	Research and development
SBP	State Bank of Pakistan
SECP	Securities & Exchange Commission of Pakistan
SRO	Statutory Regulatory Order
U.K.	United Kingdom
U.S.	United States of America

Chapter 1

Introduction

"[I]n its broadest sense, corporate governance is concerned with holding the balance between economic and social goals and between individual and communal goals. The governance framework is there to encourage the efficient use of resources and equally to require accountability for the stewardship of those resources. The aim is to align as nearly as possible the interests of individuals, of corporations, and of society."

(Sir Adrian Cadbury[1])

The literature on corporate governance aims to explain the way corporations are governed. In order to understand and enhance performance of a firm it is necessary to take a comprehensive account of the interests and preferences of all stakeholders in the firm. It is frequently quoted that a firm is a *'nexus of contracts'* and, unequivocally, it may be stated that the most important among those contracts is the bond between the investors and the managers of the firm. Other groups which have stake in the operations of a firm include regulatory bodies, suppliers of credit and raw material, buyers of firm products, competing firms in the industry, and, last but not least, society at large. Economic theory states that all of them are rational economic agents who interact with one another on the bases of legal and financial incentives.

Proponents of 'shareholder wealth maximization' model assume that managers, engaged in 'principal-agent' relationship, work on behalf of investors and take care of their interests by exerting honest work effort. In the words of Blair and Stout (2001) this is *'shareholders primacy'* perspective of a firm. The premise is that after-tax-profits of a firm are shared in a way that investors get best return (dividends and capital gain) on their investments and managers get competitive pays such that they have no incentive to steal money from the firm, nor can they increase their monetary rewards by switching

---

[1] Forwards to 'Corporate governance and development' by Claessens (2003).

1

jobs to other firms. Baker, Ruback and Wurgler (2004) call this *'broad rationality'* which is based on a set of beliefs of the investors and managers in the following sense: (a) investors believe that managers rationally respond to factors like better compensation contracts, labor market dynamics, takeover pressure from market for corporate control, and other corporate governance tools (shareholder activism, board oversight, third party monitoring, etc.); and (b) managers, on the other hand, assume they are operating in an efficient market environment, prices truly reflect economic fundamentals, and their control over resources will remain intact as long as they keep the firm as *'going-concern'*.

However, when the paradigm of *broad rationality* is mapped onto the real world, its theoretical ideals are realized only partially. The key reason for this discrepancy is that preferences of the investors and managers are concentric but do not overlap completely. Talking about joint-stock companies Adam Smith[2] envisions "the directors of such companies, however, being the managers rather of other people's money than of their own, it cannot well be expected that they should watch over it with the same anxious vigilance with which the partners in a private copartnery frequently watch over their own" (1776, p 497). Berle and Means (1932) go one step further and highlight the split in principal-agent relation. They state, "the separation of ownership and management or control creates potential *agency costs*. Agency costs occur when managers or directors take actions adverse to shareholders' interests". Therefore, in corporate world the perceptions investors and managers have about each others' interests are at best incomplete. Talking about the interests of the managers and shareholders, Myers states "perfect alignment is implausible in theory and impossible in practice" (2001, p 95). This on-going debate on the interaction of investors and managers, both in *cooperative* and *non-cooperative* settings, has resulted in extensive theoretical and empirical research. The corporate governance literature contributes in this direction by focusing on stylized features of equity owners who are the residual claimants and risk bearers in a firm. The subject area which provides foundation for these studies is 'agency theory'.

Detailed analyses of equity ownership structure help us understand the connection between corporate governance and the agency problem. This relationship is analyzed in

---

[2] An Inquiry into the Nature and Causes of the Wealth of Nations (1776).

terms of *interest-alignment* versus *managerial entrenchment* hypotheses, and *active-monitor* versus *passive-voter* hypotheses. While studying the relation of corporate governance with economic development, Claessens argues "A corporation's ownership structure affects the nature of the agency problems between managers and outside shareholders, and among shareholders" (2003, p 12). He argues that the controlling shareholder has the ability and willingness to "closely monitor and discipline management" and, when ownership is concentrated "information asymmetries can also be assumed to be less" (ibid, p 12). In fact, various types of equity owners differ in terms of incentives and skills they have to monitor the managers and, thus, control agency costs.

This study attempts to investigate the impact of equity ownership structure on (a) capital structure, (b) investment efficiency, and (c) overall firm performance. For that matter equity ownership has been explored in three dimensions namely *direct* ownership, *ultimate* ownership and ownership *concentration*. The study is based on data of more than 300 public listed Pakistani firms which has been hand collected for the period 2002 to 2006. Main source of financial and corporate ownership information is the annual financial statements of the firms.

The second chapter explores how ownership structure of a firm affects its leverage ratio. Debate on capital structure, one of the extensively researched topics in finance, started in 1958 when Modigliani and Miller proposed capital structure irrelevance theory. Later studies by Jensen and Meckling (1976), and Miller (1977) proposed the *Trade-off theory*, which states that a firm trades off tax benefits of debt with financial distress costs. Myers and Majluf (1984) proposed the *Pecking-order theory* which explains how firms build a hierarchy of financing choices. Their theory is based on the premise of asymmetric information. Jensen (1986), using notion of moral hazard, highlighted value of debt in terms of controlling agency costs between managers and shareholders. In his words "debt reduces the agency costs of free cash flow by reducing the cash flow available for spending at the discretion of managers. These control effects of debt are a potential determinant of capital structure" (Jensen, 1986, p. 324).

In comparison to research on how capital structure of a firm is determined, there is relative scarcity of inquiries made on the relation between equity ownership and capital

structure. Jensen, Solberg and Zorn (1992) studied relation among insider ownership, debt and dividend policy in a simultaneous framework and found that higher insider ownership is related to low debt levels. Brailsford, Oliver and Pua (2002) highlighted that the relation between managerial ownership and leverage is non-linear. The key argument is that both ownership structure and capital structure affect agency costs. As stated earlier, debt covenants restrict managerial discretion and control agency costs. Moreover, with regard to control over the firm, equity holders compete with debt holders and controlling or majority shareholders compete with minority shareholders. Therefore, a study of the interaction of ownership and capital structures in curtailing *agency costs* and in understanding the competition for *control* would be quite intriguing.

Major findings of the second chapter are as following: Direct equity ownership by insiders and associated firms is inversely related to debt ratio. This implies that insiders seem to enjoy private benefits of control and they tend to protect their personal wealth against the bankruptcy risk by reducing leverage, and associated firms offer substitute source of funds for financing firm projects. Furthermore, shareholdings by financial institutions are related to high debt levels. As regards ultimate ownership, family control as an ultimate shareholder is related to more gearing. This implies that families try to protect their control over firms and safeguard it by using debt which finances firm projects. Lastly, ownership concentration is associated with low debt ratio, which indicates that ownership concentration substitutes debt in controlling agency cost and majority block holders are enjoying private benefits of control.

The third and fourth chapters of this dissertation focus on the effects of different types of equity ownership on investment performance and overall firm performance, respectively. The relation of different ownership configurations with the agency problem has been explored in terms of *incentive-alignment* and *managerial entrenchment* hypotheses. Moreover, the incentive to keep *corporate control* is an important factor which influences the relation between equity ownership and performance measures.

In third and fourth chapters performance measures – marginal Tobin's q and average Tobin's q, respectively – have been regressed on equity ownership. In the third chapter, a model, as proposed by Mueller and Reardon (1993), and Gugler and Yurtoglu (2003),

has been applied to calculate marginal Tobin's q directly by regressing growth rate of market value of firm on the ratio of investment to one period lagged market value of firm.

The main findings of the third chapter are as following: Equity ownership by insiders is positively related to investment performance. This shows convergence of interest of the insiders with the outside shareholders. The effect of shareholdings by financial institutions on investment efficiency is nonlinear – positive at lower level of voting rights and negative for higher levels. This shows that as shareholding by financial institutions increases their monitoring capacity is hindered by regulatory limits on their participation in firm affairs. This may leave the management entrenched in firm affairs. Foreigners as the largest shareholders have positive relation with investment performance, whereas the state as the largest owner affects investment performance negatively. Family and foreigners as ultimate owners affect investment performance positively. However, the state as ultimate owner affects investment performance negatively.

Generally, firm performance is studied assuming that ownership and leverage are exogenous to firm performance, which may give biased results. However, chapter four of this dissertation ownership structure and capital structure have been jointly determined with firm performance – "endogeneity argument[3] a la Demsetz (1983)", which has been further supported by Demsetz and Lehn (1985), Cho (1998), and Demsetz and Villalonga (2001). To control for endogeneity instrumental variable two-stage least squares estimation method has been applied on panel data of Pakistani firms. The main results from chapter four are as following: Equity holdings by insiders are positively related to Tobin's q, which shows convergence of interest between the managers and large outside shareholders. However, shareholdings by associated firms and financial institutions affect firm performance negatively. This indicates towards possible rent extraction through pyramiding. Ultimate ownership by family is positively related to Tobin's q. It seems that family control adds value to the firm.

---

[3] For further discussion see Lee and Ryu (2003).

Layout of the proceeding parts is as follows: the next section of this chapter presents an overview of corporate governance in Pakistan; chapter 2 explores the effect of equity ownership on the financing choice of firms; in chapter 3 the relation of equity ownership with investment performance has been explored; and chapter 4 investigates the impact of ownership structure on firm performance. Finally, chapter 5 presents overall summary of the results.

1.1   An Overview of Corporate Governance in Pakistan

"[T]he evolution of the Pakistani corporate entities has, historically, closely followed the path taken by English corporate entities. The English Companies Act, 1844 provided the initial impetus to the development of corporations in undivided India. In 1855, the Joint Stock Companies Act was enacted in undivided India, which, for the first time, provided for registration of companies. This was followed by the Indian Companies Act, 1882 and later by the Indian Companies Consolidation Act, 1913. Upon independence, Pakistan inherited the Indian Companies Consolidation Act, 1913. In 1949, this Act was amended in certain respects, including its name, where after it was referred to as the Companies Act, 1913. Until 1984, when the Companies Ordinance, 1984 (the Companies Ordinance) was promulgated, following lengthy debate, Pakistani companies were established and governed in accordance with the provisions of the Companies Act, 1913." (Manual of Corporate Governance[4], p 9)

In the tradition of U.K. and U.S. Pakistan is a market-oriented economy with common law base. The Companies Ordinance (1984) is the main statute under which companies – both private and public – are constituted as legal persons and the ordinance provides foundation for their corporate governance. Besides following the provisions of the Companies Ordinance (1984), banking companies have to abide by the Banking Companies Ordinance (1962) which outlines special provisions for banking companies.

With regard to legal and regulatory framework, corporate sector in Pakistan may be divided into financial and non-financial sectors such that there are several industries[5] in each sector. Enjoying autonomy from the Government of Pakistan, there are two corporate sector supervisors namely the Securities & Exchange Commission of Pakistan

---

[4] 'Manual of Corporate Governance' has been issued by the Securities & Exchange Commission of Pakistan (SECP).
[5] Examples of industries in financial sector include banks, insurance companies, pension funds, mutual funds, investment companies, brokerage houses, etc., whereas textiles industry, energy sector, chemicals and pharmaceuticals, cement, sugar, engineering, telecom, transportations, and food processing are examples of industries in non-financial sector.

(SECP)[6] established under Securities and Exchange Commission of Pakistan Act, 1997; and the State Bank of Pakistan (SBP)[7] constituted under the State Bank of Pakistan Order 1948 with its charter as laid down in the State Bank of Pakistan Act, 1956. Broadly speaking, the SECP is the apex regulator of corporate sector, capital markets and non-bank financial companies[8], both listed and non-listed ones; whereas the SBP supervises banking sector (commercial banks, development finance institutions and microfinance banks). Institute of Chartered Accountants of Pakistan (ICAP) is a statutory body[9] and plays significant role in improving corporate governance in the country.

There are three stock exchanges in Pakistan – Karachi Stock Exchange (KSE), Lahore Stock Exchange (LSE) and Islamabad Stock Exchange (ISE). KSE is the dominant stock exchange and other two exchanges just follow the trend in the KSE. Stock exchanges are independent joint stock companies (guarantee limited) and the SECP oversees their operations and rests the powers to constitute their board of directors and to vet the rules under which securities are traded in those stock exchanges. Additionally, Securities and Exchange Ordinance, 1969 provides for the protection of investors, regulation of markets and dealings in securities. Listed Companies (substantial acquisition of voting shares and takeovers) Ordinance 2002 provides for substantial acquisition of voting shares and takeovers of listed companies.

At the firm level corporate board is responsible for overseeing the management and overall control of the firm. According to the 'Guide[10] on Shareholders' Rights' ordinary shareholders have the right to participate in the elections to the position of directors or use his vote to elect or remove directors from the corporate board. Details on the responsibilities of the directors and functions of the corporate board may be referred

---

[6] In 1999 the SECP succeeded Corporate Law Authority which was attached to the Ministry of Finance of the Government of Pakistan, and it was previously regulating the corporate sector in Pakistan.

[7] As a part of financial sector reforms, the SBP was granted autonomy in 1994; and in 1997, through an Act of the Parliament of Pakistan autonomy of the SBP was further strengthened and amendments were approved in State Bank of Pakistan Act, 1956, Banking Companies Ordinance, 1962 and Banks Nationalisation Act, 1974. For reference visit www.sbp.org.pk

[8] Non-banking industries, among others, include manufacturing industries and non-bank financial institutions. As listed on the SBP website NBFIs include "Leasing companies, Investment Banks, Discount Houses, Housing Finance Companies, Venture Capital Companies, Mutual Funds), Modarabas, Stock Exchange and Insurance Companies". For reference visit www.sbp.org.pk

[9] Established in 1961 under the Chartered Accountants Ordinance (1961).

[10] Available at www.secp.gov.pk

from the Companies Ordinance (1984) and other relevant laws, rules, codes and statutory regulatory orders (SROs) as issued by the regulatory bodies.

There are few research studies on corporate governance in Pakistan. Hamid and Kozich (2006) give a brief overview of the corporate governance structure in Pakistan. They have focused on the legal aspects and highlight that mostly the corporations in Pakistan are family-controlled and they must learn how to adopt modern governance techniques of their corporations. According to them corporate governance in Pakistan is weak because corporate laws and codes have very weak penal provisions, legal system is not effective and financial press is not very vocal on issues pertaining to corporate governance.

Khalid and Hanif (2005) have studied corporate governance of banks in the South Asian region with special focus on Pakistan, India and Bangladesh. They give an overview of the corporate governance guidelines issued by the State Bank of Pakistan, Reserve Bank of India and Bangladesh Bank. They highlight that with the recent waves of privatization, deregulation and entry of the foreign banks, financial sectors in these countries is embracing the challenge of good corporate governance by reforming the supervisory role of the central banks, by restructuring the legal system and by introducing 'best practices' and 'codes' of corporate governance in the banking sector. Arshad, Goergen and Syed, (2006) studied corporate governance in the financial sector of Pakistan. They provide a review of corporate governance and banking sector reforms in Pakistan. They conclude that given a leading role of the banking industry in economic development of Pakistan, it should demonstrate its capacity to promote good corporate governance practices in the wider corporate sector.

Recent Initiatives and Developments:

In 2002 the SECP issued 'Code of Corporate Governance' which is a compilation of so called 'best practices' and provides general guidelines for companies to follow. Provisions of this Code have been integrated with the listing requirements[11] of the stock exchanges in Pakistan, and a dedicated version of this Code, along with 'Prudential

---

[11] For reference visit http://www.kse.com.pk/information/corporate_governance.php

Regulations[12] (for banks)' has been issued by the SBP for banking companies to adhere to. The *Manual of Corporate Governance* of the SECP states, "Compliance with the provisions of the *Code* is mandatory except for two that are voluntary in nature. The mandatory provisions deal with such matters as directors' qualifications and eligibility to act as such, their tenure of office, responsibilities, powers and functions, disclosure of interest, training, meetings of the Board of directors and the business to be conduct by it, the qualifications, appointment and responsibilities of Chief Financial Officer (CFO) and company secretary, the appointment and responsibilities of the Audit Committee, the appointment and responsibilities of internal and external auditors, and compliance by listed companies with the *Code*. The two voluntary provisions pertain to the appointment of independent non-executive directors and those representing minority interests on the Board of directors and the restriction for brokers to be appointed as directors of listed companies" (p 11).

All listed companies in Pakistan are required to comply with the *Code*. The SBP required non-listed banks and development finance institutions to fulfill requirements set by the *Code*. Moreover, some banks include requirements to adhere to the *Code* in their loan agreements. There are rating agencies in the country which have started rating companies for their corporate governance.

In 2004, the SECP and the SBP along with other various educational, professional and research institutions, laid foundation of Pakistan Institute of Corporate Governance (PICG) – a project of public-private partnership. The PICG is primarily focused on training and awareness of corporate executives and boards, and conducts surveys for research and development purposes. Activities of the PICG are focused to provide and enabling environment for the implementation of Code of Corporate Governance as issued by the SECP.

International Finance Corporation (IFC), private sector arm of the World Bank Group, has partnered in improving corporate governance practices in Pakistan. Apart from providing monetary and technical assistance, notable initiatives of the IFC include sponsoring Pakistan Corporate Governance Project (2005); holding various conferences

---

[12] State Bank of Pakistan Prudential Regulation 'G1 to G3'.

and workshops for private entrepreneurs, bankers, regulators, and judges; and conducting survey on corporate governance practices in Pakistan in 2007.

Given the legal and institutional background on corporate governance in Pakistan, it may be stated that there is no dearth of relevant laws, rules, regulations and guiding principles. However, some weaknesses[13] in the corporate governance which are listed as follows need to be addressed to improve corporate governance in the country:

a) Acute shortage of trained and experienced personnel to sit on corporate boards,

b) Little or no protection is available to minority shareholders,

c) Enforcement of the law with regard to investors' rights is lacking; courts are overloaded and prosecution is very costly and time consuming,

d) Generally financial disclosure by listed companies is adequate and timely; however, some black sheep in manufacturing sector and those which are owned and run by the state or state holding companies do not follow the rules (in fact the penalty for inadequate or delayed disclosure is so little that it does not motivate the corporations to abide by the law), and

e) Using complex accounting practices, business groups execute transactions with related parties.

---

[13] Most of these weaknesses have been highlighted in International Finance Corporation (IFC) publication "A Survey of Corporate Governance Practices in Pakistan 2007" available at www.ifc.org

Figure 1.1: Corporate Governance in Pakistan
(Institutional Arrangement)
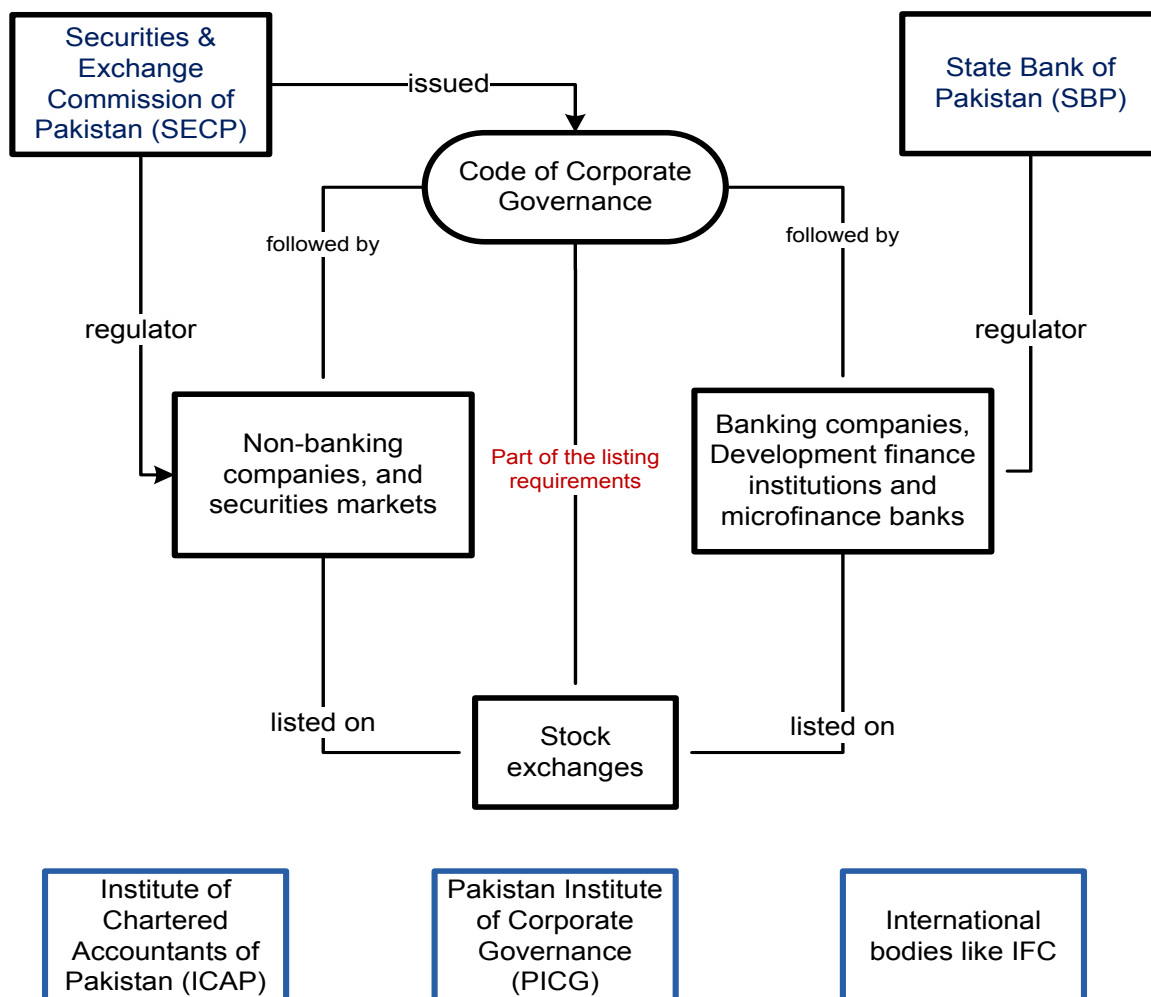
ICAP, PICG and international bodies like IFC play their role in improving corporate governance practices in Pakistan.

Chapter 2

Ownership Structure and Capital Structure

2.1 Theoretical background and Related Literature

A blend of debt and equity constitutes capital or financing structure of a firm. Important decisions related to debt include types of creditors, forms of credit and their maturity matrix, whereas allocation of voting and cash flow rights are equity related issues. Capital structure, a set of interrelated complex decisions, is instrumental in allocation of risks and control rights, and it sets foundation for different players to play their part in the governance of a firm. In the words of Jan Mahrt-Smith "many aspects of the financial structure interact: the ownership dispersion of a particular class of claims among investors, the shape of their return rights, the presence of covenants and other restrictions, the representation of particular classes of securities on the corporate board, as well as features of the institutional environment, such as the bankruptcy law (p 788)." Therefore, apart from contextual factors, capital structure is likely to be influenced by equity ownership structure.

2.1.1 Linkage between Ownership Structure and Capital Structure

Capital and ownership structures are interrelated through agency problem and control. Capital structure of a firm depends on agency cost and asymmetric information, and ownership structure mitigates these costs while exhibiting shareholders' preferences for control and highlights their incentive to monitor the management. The structural design in which ownership and capital structures create or control agency problem depends upon legal, financial and ethical parameters in an economy.

In an agency setting debt works as a tool to control agency costs[14]. Grossman and Hart (1982) argue that risk of bankruptcy will force the managers to mend their ways. In their words "clearly the efficacy of bankruptcy as a source of discipline for management will depend on the firm's financial structure – in particular, its debt-equity ratio". Jensen (1986) argues that firms get collateral advantage of preferring debt over equity in terms of controlling the agency costs. He underlines that debt loosens managers' control over free-cash-flows and squeezes margin for misappropriation of firm resources. However, an increase in debt may result in *asset substitution problem*[15] (Jensen and Meckling, 1976; Myers 1977; and Smith and Warner, 1979). When debt ratio is high, managers and shareholders, taken together, would undertake risky projects (those with positive net present value but with low probability of success). Controlling shareholders, in connivance with managers, will over-invest when riskiness of projects undertaken by the firm is not known to debt-holders. This makes debt a riskier option and increases cost of debt. Therefore, dynamics among shareholders, debt-holders and managers creates a balance between allocation of risk and sharing control.

Equity ownership is also associated with agency problem and it is instrumental in defining 'corporate control' (Denis and McConnell, 2003). Studies by Jensen and Meckling (1976), Fama and Jensen (1983), Shleifer and Vishny (1986) and (1997), Morck, Shleifer and Vishny (1988), and Stluz (1988) argue that incentive structure of managers is affected by the ownership structure of a firm. There are two extreme scenarios: a) individual owner (or a few owners acting in concert) with concentrated ownership versus manager and b) highly dispersed small shareholders versus manager. In the former case individual owner has huge incentive to monitor the manager and has necessary information to influence major decision in the firm. However, in the latter case, dispersion of ownership discourages small individual owners to participate in firm affairs, which that there is free-riders problem.

On the other hand, in the words of Denis and McConnell "controllers frequently have some degree of ownership of the equity of the firms they control; while some owners,

---

[14] Substantial amounts of free cash flows would entice the managers to engage themselves in activities like expropriations. Grossman and Hart (1980) argue that debt works as a disciplinary device to put a check on this kind of managerial inefficiency.
[15] Gavish, B. and Kalay, A. (1983) state "agency cost of debt consists of (1) the opportunity loss of wealth caused by the impact of debt on the investment decisions of the firm; (2) the monitoring and bonding expenditures by the firm; and (3) the cost of bankruptcy and reorganization".

by virtue of the size of their equity positions, effectively have some control over the firms they own. Thus, ownership structure (i.e. the identities of a firm's equity holders and the sizes of their positions) is a potentially important element of corporate governance" (2003, p 3). Therefore, it may be argued that equity ownership which confers certain rights – right to vote and right to cash flows – provides ways and means to control a firm in such a manner that cash flows to shareholders are maximized. Some of the benefits of control are shared and others, known as private benefits[16] of control, are not shared by all the shareholders. The control rights of an equity holder affect agency problem in a firm; for instance, large shareholders have incentive as well as capacity to better monitor the managers.

Equity ownership structure (in terms of identities of direct and ultimate owners, and ownership concentration) defines and distributes control rights to different shareholders who value control rights differently. For instance, insiders (manager and directors) especially if they belong to same family and owners of private unlisted firms are the types of investors who have invested substantial amount of their wealth and human resources value control more than other investors do. Therefore, insiders, as separate voting-block, prefer to have less debt. Enjoying benefits of control they want to avoid dominance and monitoring by the debt holders. Similarly small investors, owning private firms, would like to keep their control and avoid debt even when it is accessible to them (Mueller, 2003). Being founder owners they would keep control as a matter of prestige and stronger affiliation with the company. Another example is ultimate ownership by family who would protect their control by increasing leverage in the firms. This strategy would make their companies less attractive for raiders to takeover. These arguments motivate the inquiry that ownership structure, through dynamics of 'control', is likely to influence capital structure.

In any discussion on agency problem management is the focal point. As regards debt managers consider ensuing financial distress risk and bankruptcy cost may result in loss of their employment. Additionally, debt covenants reduce their powers vis-à-vis bond holders; therefore they would like to reduce debt level as much as possible. With regard

---

[16] Investors extract private benefits – pecuniary and non-pecuniary – over and above their investments. Such benefits are available to those shareholders only who have meaningful control over the firm (Denis and McConnell, 2003).

to equity they face similar threat of loss of employment if the ownership is concentrated and the owner allows a takeover that replaces management. Therefore, managers who run a firm on day-to-day basis have immediate stake in deciding financing pattern of firm projects.

2.1.2 Related Literature

Over half a century ago Modigliani and Miller (1958) debated sources of finance for corporate ventures. They built an ideal world of perfect information that is free of transaction costs and taxes. They proposed capital structure irrelevance theorem for firm value. Later in 1963 they updated their model and postulated that debt is preferred over equity when there are tax subsidies on debt related interest payments. From that time onwards this topic has been examined, both theoretically and empirically, by many yet it still begs conclusion as to how firms decide about a mix of two options – debt and equity. Another related inquiry is about existence of *target* leverage ratio, and if there is one, how firms adjust towards that target ratio.

Among others, work of Baxter (1967), Jensen and Meckling (1976), and Miller (1977) refined the debate on *Trade-off theory* regarding leverage ratio. Baxter argued that excessive use of debt increases credit risk of firm, which, in turn, would increase cost of credit. Jensen and Meckling introduced costs of financial distress, and Miller incorporated personal taxes in the setting. The trade-off theory proposes that firms should increase their leverage to a level where marginal benefits of debt, in terms of tax saving, become equal to financial distress cost of debt. Fischer, Heinkel, and Zechner (1989) introduced dynamic version of *Trade-off theory*. They argue if cost of adjusting leverage towards target debt ratio is higher than the cost of having a suboptimal capital structure, firms would deviate from the target debt ratio.

Furthermore, studies on other aspects related to capital structure offer competing explanations. Ross (1977) argued that increase in debt signals positively about firm performance. However, signaling works when investors are poorly informed as compared to managers. In such case firm would be inclined to follow pecking-order financing behavior. On the contrary, when potential investors have adequate

information about the firm signaling role of debt is not expected to impact choice of the managers regarding issuing debt or equity.

Later studies focused on the interaction between the managers (who hold private information about business risk) and investors (suppliers of credit). Myers and Majluf (1984) argued that to counteract the 'private information advantage' of the managers, the investors will tend to under-price the new stock issues. However, this foresight will deter the managers from issuing equity, instead they will resort to firm's internal resources for project financing, and if the internal resources are not sufficient then they will issue debt leaving equity issue as last option on the list. In order for this *Pecking-order theory* to hold firms should keep financial slack - reserve capacity to issue debt. With regard to equity market timing, dynamic version of Myers and Majluf (1984) implies that in post high performance periods rational managers will issue equity. This will lower the debt ratio (Lucas and McDonald (1990); Baker and Wurgler (2002)).

2.1.3 Motivation of Study

Many empirical studies have tested different theories of capital structure by analyzing firm specific factors while ignoring ownership structure of a firm. Generally these studies employ a set of determinants of capital structure which are drawn from financial statements of a firm and they include, but are not limited to, firm size, asset structure, profitability, growth opportunities, non-debt tax shields, tax rate, firm risk, dividend payouts, share price performance, etc. Then competing theories of capital structure offer explanations on the direction and strength of relationship each of these contextual factors have with leverage. However, empirical evidence of a pattern that firms follow to finance their ventures is not shared universally.

Challenging the assumption that owners constitute a homogeneous unit, it may be hypothesized that different types of owners – having different needs, preferences, values and strengths – would influence capital structure differently. However, most of the studies on capital structure ignore as to how equity ownership structure of a firm affects its choices to finance its projects. This disregard to equity ownership as a possible explanatory variable in determining the capital structure may cause model

misspecifications and loss in explanatory power of the models drawing questionable conclusions.

Furthermore, studies on role of debt as disciplinary device and its relation to ownership structure are mostly based on the assumption that a shareholder has *direct* ownership stake such that his control rights are proportional to cash flow rights. There are few studies[17] which explore relation between *ultimate* shareholding (directly and indirectly through pyramids, multiple control chains and cross-holdings) and capital structure. If benefits of control exceed ownership rights in arrangements like pyramids or cross-holdings, then debt may become partially ineffective in controlling agency cost. In such arrangements controlling owner may be expropriating rights of other stakeholders, especially minority shareholders (La Porta, Lopez-de-Silanes and Shleifer, 1999; and Claessens, Fan and Lang, 2006). Furthermore, different types of ultimate owner would employ debt to fulfill different objectives; for instance, family as ultimate owner would use debt as shield against threat of takeovers. Therefore, analysis of ultimate ownership would give deeper insight into the interaction of ownership structure with capital structure and their role in mitigating agency cost and asymmetric information.

Moreover, most of the empirical research on capital and ownership structures has been conducted using data from developed economies. In fact, it is the unavailability of corporate data in developing economies which puts barriers on research in corporate finance and industrial organization. Whilst legal, institutional and organizational arrangements in developing economies are rather weak, it provides an opportunity to test validity of corporate finance theories in developing economies. Therefore, considering Pakistan as a representative developing economy, it would be intriguing to know if relation between ownership structure and capital structure works the same way as it does in developed economies. This line of inquiry may produce results which would have strong implications for corporate governance in Pakistan.

There are few research studies done on corporate sector in Pakistan. To our knowledge, capital structure choice of Pakistani firms has been studied in two international and in

---

[17] Du and Dai (2005); Bianco and Nicodano (2006); Manos, Murinde and Green (2007); and Paligorova and Xu (2009).

three Pakistan-focused studies. La Porta, Lopez-de-Silanes, Shleifer and Vishny (LLSV) (1997) examined the impact of legal structure on external finance, and they classify Pakistan in the group of countries with weak legal system and smaller markets for external finance. Focusing on arrangements for investor protection across 49 countries, they find that countries with weak legal structure have "smaller and shallower" capital markets. Booth, Aivazian, Demirguc-Kunt and Maksimovic (2001) have studied capital structure in 10 developing countries include Pakistan in their sample set. They highlight significance of country specific factors besides firm specific factors in determining leverage ratio. However, with regard to Pakistan their sample is biased as they focused on KSE-100 index[18] companies only.

Pakistan-focused studies include one by Shah and Hijazi (2004) and the other by Shah and Khan (2007). Using four factors, the former did pooled regression analyses of capital structure choice of listed companies. The latter is an improvement of the first in terms of extending the time window from 1993 to 2002. Moreover, they added two more variables of interest and applied fixed effect panel regression to estimate their model. Third study by Hasan and Ali (2009) is on the impact of corporate governance and ownership on capital structure of listed Pakistani firms. They find that managerial shareholding has negative significant impact and institutional shareholding has positive yet insignificant impact on leverage ratio. Their study, using small sample of 59 firms, is based on pooled regression and provides limited coverage with respect to different types of owners.

Motivation in this study is to build on the existing literature and study the impact of ownership structure on financing decisions of publicly listed firms on the KSE.

---

[18] KSE-100 index reflects the market capitalization of top 100 companies listed on the Karachi Stock Exchange, the largest stock exchange in Pakistan.

2.2 Overview of Data

This study is focused on non-financial public listed firms[19] in Pakistan. Major challenge has been data availability, especially details on equity ownership are hard to find. Though listed companies in Pakistan are obliged to make their financial and non-financial information available to public yet absence of any comprehensive database makes data collection effort very difficult. I have hand collected data from annual financial statements of more than 350 firms listed on the KSE. The 'ownership' details have been gleaned directly from the financial statements of the firms. If possible, "investors' relation" sections of websites of the listed firms have also been browsed and some valuable information regarding equity ownership structure, board members, and chains of relations with other listed and non-listed firms have been collected. Likewise, websites of some listed companies have been very useful in identifying the type of ultimate shareholders. As a supplementary source, publications of State Bank of Pakistan (SBP)[20] – central bank of the country – have been consulted. Market knowledge, like information contained in the financial press, has been collected and, in some cases, it has instrumental in exploring identities of ultimate owners, which have been cross-checked with information on shareholding patterns as disclosed in annual statements of the firms.

Although financial data starting from 1997 is accessible, the estimates in the following study are based on five years annual panel data starting from year 2002, and reason for starting from year 2002 is that ownership information was made mandatory for public disclosure[21] only in 2002. Among other benefits, use of panel data allows more degrees of freedom and it helps in calculating efficient estimates by controlling co-linearity among explanatory variables and controls for unobserved heterogeneity. To cleanse the data I have excluded firms with missing variables and firms with data available for less

---

[19] Financial institutions - banks, insurance companies, investment banks, etc. - have different investment and capital structure compared to non-financial institutions. Reference in point are Myers (2001), Gugler, Mueller, and Yurtoglu, (2002) and Bjuggren, Dzansi, and Palmberg (2007).
[20] The SBP publishes selected items from the financial statements of companies listed on the KSE under the title 'Balance Sheet Analyses of Joint Stock Companies'.
[21] Public disclosure about the shareholding is required by Section 236 of the Companies Ordinance of Pakistan (1984). However, the specific instructions on the public disclosure of the pattern and identity of shareholders have been laid down in the section XIX(i) of the 'Code of Corporate Governance', issued by the corporate supervisory authority (Securities & Exchange Commission of Pakistan).

than 3 consecutive years. After doing that exercise 306 firms or 1,530 firm years have been used in this study.

2.2.1 Variables

Dependent Variable: Leverage is our dependent variable and it is defined as ratio of book value of debt as numerator, and market value of equity plus book value of debt as denominator[22].

Explanatory Variables: Ownership is main explanatory variable and it has been explored in three dimensions: direct ownership[23], ownership concentration, and ultimate ownership. Definition of ownership is mainly based on voting rights.

It is an established argument that debt disciplines managers and controls agency cost of free cash flows. Ownership structure also plays a role in controlling agency cost. Therefore, it would be interesting to know if debt and ownership structure work as substitute or complement for each other in controlling the agency cost. In this regard research is expanding to estimate the interaction of ownership and capital structures.

How equity ownership structure affects leverage ratio could be explained in terms of *active-monitoring hypothesis* versus *passive-voters hypothesis*. Studies by Jensen (1986), Shleifer and Vishny (1986), Friend and Lang (1988) and Shome and Singh (1995) propose that a particular type of owners has the will, skill and fiduciary position to actively monitor the activities of the managers and stop them from behaving opportunistically. This is how they protect their interests in the firm and work as substitute to the debt in controlling the agency cost. On the other hand, Pound (1988) and McConnell and Servaes (1990) purpose that if a particular category of shareholders collude with the managers and work in a manner which is against the interest of the other (dispersed or minority) shareholders then shareholding by that category would be

---

[22] Due to almost non-existent market for trading debt, book value of debt has been used as a proxy for market value of debt. References include studies by Titman and Wessels (1988), and Friend and Lang (1988). Bowman (1980) has asserted that no noise is produced by using book value of debt in place of market value of debt.

[23] Types of direct owners introduced in this dissertation are consistent with those defined in the "Code of Corporate Governance" issued by the SECP in 2002.

negatively related to debt. The following paragraph presents the case of possible interaction of ownership by managers and its impact on capital structure.

The principal-agent relation between investors and managers is translated as separation of ownership from control. If monitoring is lacking, managers have the incentives to shirk, misappropriate funds or to behave inefficiently if there is no one to monitor them. However, if managers acquire ownership stake in the firm, their interests would be aligned with that of outside shareholders – *incentive-alignment hypothesis*. Nevertheless, if ownership of managers keeps rising then at some level managers would entrench themselves – *managerial-entrenchment hypothesis*. Given this non-linearity in the behavior of managers, questions have been raised about the interaction between managerial ownership and leverage ratio – they substitute or complement each other in controlling agency cost. Leland and Pyle (1977), Berger et al. (1997) and Chen and Steiner (1999) show that managerial ownership and leverage are positively related, whereas Friend and Lang (1988), Jensen et. al. (1993), Bathala et. al. (1994), and Seetharaman et. al. (2001) show that managerial shareholding and leverage are negatively related. Chaganti and Damanpour (1991), Grier and Zychowicz (1994) and Al-Najjar and Taylor (2008) find negative relationship between institutional ownership and leverage.

In the following table 2.1 definitions of the key terms related to equity ownership and types of owners are presented.

Table 2.1: Definition of Ownership[24] Variables

Owner type	Definition
Direct ownership	Direct holding of control (voting) rights by different categories of owners. It is measured in percentage terms.
Ultimate ownership	Sum of direct and indirect percentage ownership of control (voting) rights. Indirect ownership could be through cross-shareholding, pyramids or multiple control chains. Types of ultimate owners include family, state, foreigner or legal person. Dummy variable has been used to identify the type of ultimate owner.
Ownership concentration	Three proxies have been used: voting rights of the largest owner, sum of the voting rights of top three shareholders, and sum of the voting rights of top five shareholders. In the case of single largest owner, identities of the owner have also been specified and dummy variable has been used to fathom the effect of different types of the largest single shareholder on the leverage ratio.
Voting rights[25] of controlling shareholder	Percentage of shares with voting rights of a company controlled by its ultimate owner. If firm A is controlled indirectly through another traded firm B, the percentage of voting rights of A in the hands of the controlling shareholder is equal to the minimum between the voting rights owned by the controlling shareholder in B and the voting rights owned by firm B in firm A. This algorithm can be generalized to more layers of controls and to more complex control structures.
Cash-flow rights of controlling shareholder	Percentage of shares conferring dividend rights to the holder of shares, calculated as following: if a firm A is controlled indirectly via another traded firm B, the percentage of cash flow rights of A owned by the controlling shareholder is equal to the product of cash-flow rights owned by controlling shareholder in B times the fraction of cash-flow rights owned by firm B in firm A. This algorithm can be generalized to more layers of controls and more complex control structures.

---

[24] The Companies Ordinance of Pakistan (1984) and other relevant laws require disclosure of equity ownership based on voting rights only.

[25] Du and Dai (2005) define voting right as "Right of a common stock shareholder to vote, in person or by proxy, for members of the board of directors and other corporate policies such as the issuance of senior securities, stock splits and substantial changes in operations". Further the definitions of the voting rights and cash flow rights of controlling shareholder have been adopted from Paolo (2002).

Table 2.1 (continued.)

	Direct owners
Insiders	Sum of percentage shareholding by managers, directors and their family members.
Associated firms	Sum of percentage shareholding by associated firms, where associated undertakings are any two or more companies interconnected with each other (a) if there is an owner/director/partner of a company who owns equal to more than 20 percent voting rights in each of the associated firms; (b) if the firms are under common management or control or one is the subsidiary of the other; and (c) if the undertaking is a Modaraba[26].
Group	Sum of shareholding by insiders and associated firms.
Financial institutions	Sum of shareholding by banks, mutual funds, pension funds, investment companies, insurance companies, etc.
Foreigners	Percentage shareholding by foreign shareholders
Government	Percentage shareholding by federal and provincial governments, government owned financial and non-financial firms, etc.
	Ultimate Owners
Family	Sum of percentage shareholding, directly and/or indirectly, by family. Family is a group of individuals, either by blood or by marriage, who owns firm's equity, individually or as a group. Mostly member(s) of a family hold slot of an officer or a director.
State	Sum of percentage shareholding, directly and/or indirectly, by federal and provincial governments, municipalities, government owned financial and non-financial firms, etc.
Foreigners	Sum of percentage shareholding, directly and/or indirectly, by foreigners.
Legal person	Sum of percentage shareholding, directly and/or indirectly, by non-listed firms.
Family (extended)	Sum of percentage shareholding by *family* and *legal person*.

---

[26] Modaraba companies are defined in section 2.2.2.

Figure 2.1: Direct Ownership (Mutually exclusive categories)
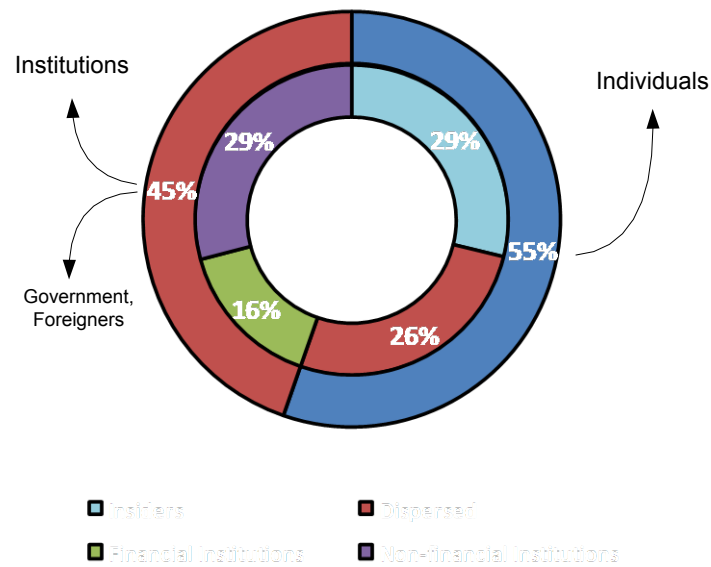
Figure 2.2: Direct Ownership (Tree diagram)
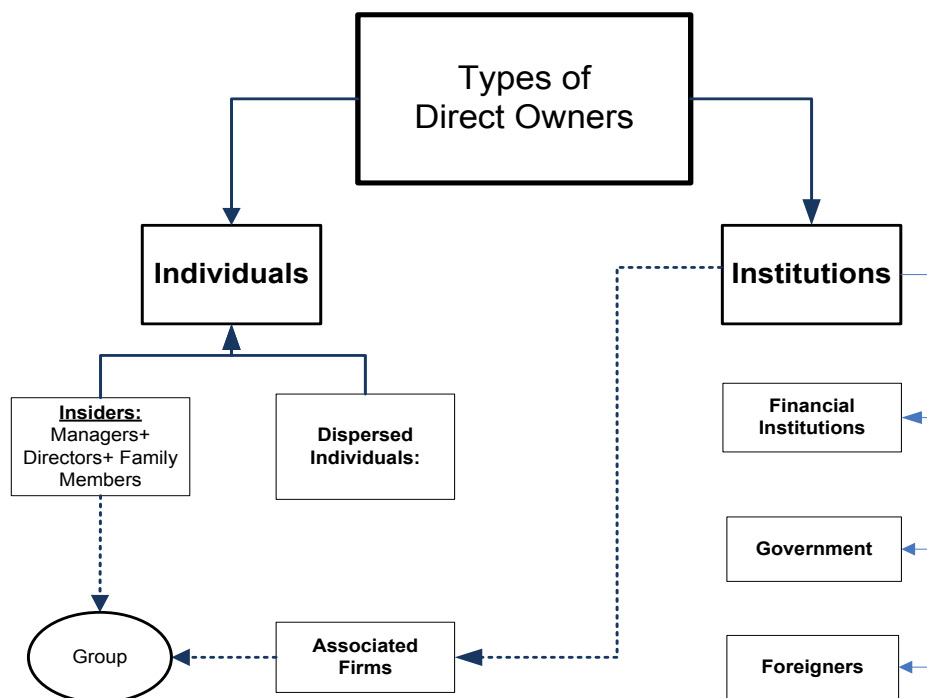
2.2.2 Summary Statistics

As shown in table 2.2 average size of a firm in terms of total assets is 3.8 billion Pakistani Rupee (hereafter PKR), with median assets 940 million PKR (in terms of gross sales it is 4.8 billion PKR with median 970 million PKR) . The table shows that average (median) debt ratio is 68 (73.5) percent. This ratio suggests that Pakistani listed firms are fairly leveraged. Further, the structure of assets is such that tangible assets, on average, are little more than half of total assets (52.36 percent). On average ratio of market value of common stock to book value of common stock is 85 percent and median value is 64 percent. Average dividend payout ratio is 15.3 percent of the net profit before taxes. The annual depreciation to asset ratio (NDTS) is 4 percent, and the firm profitability measured by return on equity is 11.3 percent on average with 10 percent median value.

Table 2.2: Descriptive Statistics (Firm Specific Variables)

Leverage is defined as ratio of total liabilities to total liabilities plus market value of common stock, tangibility is ratio of fixed assets to total assets, dividend payout is ratio of total dividend to net profit before tax, non-debt tax shield represent ratio of current depreciation to total assets, market-to-book is ratio of market value of equity to book value of equity, and risk is measured as standard deviation of market value of firm during last four years. All statistics are calculated over the whole set of 306 firms. Total assets and gross sales are measured in million of Pakistani Rupees, except risk all other variables are presented in percentage terms.

	Mean	Median	St. Dev.	Min	Max
Total Assets	3772	940	10864	5	150656
Gross Sales	4794	970	18017	0	353833
Leverage	67.67	73.50	24.02	1.38	100.00
Tangibility	52.36	53.15	22.58	0.00	98.69
Dividend Payout	15.26	0.00	35.46	-118.95	500.00
Non-debt Tax Shield	4.09	3.68	3.78	0.00	76.65
Return on Equity	11.31	10.00	78.61	-684.30	1242.90
Market to Book Ratio	84.63	63.96	208.49	70.00	2268.93
Risk	0.66	0.05	2.10	0.00	22.25

Table 2.3: Debt Ratios of Developing and Developed Countries

Debt ratio is defined as total liabilities divided by total liabilities plus net worth. Data for developing countries is borrowed from Booth, Aivazian, Demirguc-Kunt and Maksimovic (2001, Table 1), and for developed countries is borrowed from Rajan and Zingales (1995, Table IIIa).

	Nr. of Firms	Time Period	Debt Ratio (%)
Panel A: Developing countries			
Brazil	49	1985-1991	30.30
Mexico	99	1984-1990	34.70
India	99	1980-1990	67.10
South Korea	93	1983-1990	73.40
Jordan	38	1983-1990	47.00
Malaysia	96	1983-1990	41.80
Pakistan	**96**	**1980-1987**	**65.60**
Thailand	64	1983-1990	49.40
Turkey	45	1983-1990	59.10
Zimbabwe	48	1980-1988	41.50
Panel B: Developed countries			
United States	2580	1991	58.00
Japan	514	1991	69.00
Germany	191	1991	73.00
France	225	1991	71.00
Italy	118	1991	70.00
United Kingdom	608	1991	54.00
Canada	318	1991	56.00

Table 2.3 shows comparative statistics on leverage ratio for selected developed and developing countries. It gives distribution of capital structure in 10 developing countries (Panel A) and 7 developed countries (Panel B). It shows that Pakistan falls in the group of countries with highly leveraged corporations. Comparison of average leverage ratio as shown in table 2.3 with that in table 2.2 shows that it remains quite stable over time – 65.5 (period: 1980-87), and 67.67 (period: 2002-06).

Table 2.4: Descriptive Statistics (Ownership)

Summary statistics of the ownership variables are given in percentage terms. Panel A shows summaries on different types of direct owners; Panel B describes ownership concentration in terms of ownership held by the single largest shareholder, followed by different types thereof, and shareholding by the top three (five) shareholders; Panel C gives summaries on voting rights of different types of ultimate owners, and Panel D gives details on cash flow rights of different types of ultimate owner. Abbreviation used: Std. Dev. = Standard deviation, AF = Associated firms, FI = Financial Institutions, NFI = Non-financial institutions, For. = Foreigner, State = Government of Pakistan, T1 = the largest shareholder, T3 (5) = sum of shareholding by 3 (5) largest shareholders and Family (ext.) = Extended definition of family (Family + Legal Person).

Panel A: Direct ownership (in terms of voting rights)

Owner Type	Observations	Mean	Median	Std. Dev.	Min	Max
Insiders (1)	1526	28.78	25.00	25.79	0	95.70
AF (2)	1526	15.19	1.50	21.18	0	90.40
Group (1 + 2)	1526	43.97	47.34	23.80	0	97.51
FI (3)	1526	15.60	12.35	13.11	0	85.20
NFI (4)	1526	29.07	20.10	27.87	0	98.40
Dispersed (5)	1526	26.56	22.70	18.00	0	100.00
Foreigner	1526	7.85	0.00	19.18	0	94.90
State	1526	2.43	0.00	11.97	0	96.30
Institutions (3 + 4)	1526	44.69	40.60	30.01	0	100.00
Individuals (1 + 5)	1526	55.31	59.40	30.01	0	100.00

Panel B: Ownership concentration (in terms of voting rights)

Owner Type	Observations	Mean	Median	Std. Dev.	Min	Max
T1	1526	28.70	23.04	19.11	4.09	96.34
T1-Insiders	584	21.99	17.24	14.39	4.09	76.14
T1-AF	444	31.15	26.13	18.08	5.78	96.1
T1- FI	256	20.23	20.16	9.4	4.96	84.05
T1-For.	187	45.99	44.52	20	8.61	94.34
T1- State	55	60.57	60.43	24.42	24.86	96.34
T3	1526	50.09	46.6	20.74	7.06	99.84
T5	1526	60.76	60.79	19.47	12.81	99.88

Panel C: Ultimate Ownership (in terms of voting rights)

Owner Type	Observations	Mean	Median	Std. Dev.	Min	Max
Family (1)	890	53.96	53.50	17.01	5.30	97.51
State	75	62.41	62.76	22.37	24.90	96.30
Foreigner	200	56.36	53.45	19.50	15.00	94.90
Legal person (2)	270	46.37	44.73	15.97	9.20	95.90
Family (extd.) (1+2)	1160	52.20	50.85	17.07	5.30	97.50
Sum over categories	1435	50.98	50.70	20.26	5.30	97.51

Panel D: Ultimate Ownership (in terms of cash flow rights)

Owner Type	Observations	Mean	Median	Std. Dev.	Min	Max
Family (1)	890	51.53	50.10	17.88	5.30	97.50
State	75	57.93	54.40	23.38	24.90	96.30
Foreigner	200	56.07	53.40	19.63	15.00	94.90
Legal person (2)	270	41.24	41.72	18.78	3.57	93.60
Family (extd.) (1+2)	1160	49.13	48.94	18.60	3.57	97.50
Sum over categories	1435	48.36	48.59	21.12	3.57	97.51

Table 2.4 (Panel A) shows that mean (median) value of Insiders' holding is 28.78 (25) percent, whereas associated firms have 15 (1.5) percent shareholding. The two categories - insiders and associated firms - together (as group) hold 44 (47) percent, almost half of the total shares. Financial institutions' mean (median) holding is 15.6 (12.35) percent whereas that for non-financial firm is 29 (20) percent. The dispersed individuals own 26.6 percent on average (23 percent median) shares in the firms. On average foreigners hold 8 percent stake in firms, and the Government of Pakistan holds 2.5 percent stake. On the whole, individuals hold 55 (59) percent of the shares, whereas overall institutions have 45 (41) percent stake in firms' ownership. It may be clarified here that insiders and dispersed individuals add up to shareholding by 'individuals', and financial institutions and non-financial institutions taken together give total institutional holding.

Panel B of table 2.4 shows ownership concentration measured alternatively by shareholding by the largest owner, top 3 shareholders and top 5 shareholders. The

largest shareholder has further been identified as insiders or associated firms or financial institutions or foreigner or government. Average shareholding by the largest owner is 28.7 percent. Shareholding by top three (five) block-holders has mean value of 50.09 (60.76). In terms of average shareholding, there is considerable variation among different types of the largest owner. Insiders as the largest owner has mean value 22 percent, associated firms has 31 percent, financial institutions has average shareholding 20, foreigner has 46 percent, and government has the highest average holding (60.57 percent shareholding) as the largest owner.

As regards ultimate ownership, for 178 firms (890 observations or 58 percent of total) family is the ultimate owner, for 15 firms (75 observations or 4.9 percent of total) state is the ultimate largest owner, for 40 firms (200 observations or 13 percent of total) foreigner is the ultimate owner, for 54 firm (270 observations or 17.65 percent of total) legal person is ultimate controlling shareholder, and the remaining 19 firms (95 observations or 6.2 percent of total) are widely-held in our sample of 306 non-financial listed firms. For extended definition of family (family and legal person together) there are 232 firms (1160 observations or 75.8 percent of total) in this category.

Panels 'C' and 'D' provide summary statistics on ultimate ownership. There are 178 firms with family as ultimately controlling shareholder (if extended definition of family is considered then the number of firms with family as ultimate shareholder increases to 232), 25 firms with the state as ultimate shareholder and 40 firms with foreigner as the ultimate shareholder. There are 52 firms with legal person as ultimate shareholder.

Panel C of table 2.4 shows that mean (median) value of ultimate shareholder's voting rights for family controlled firms is 54 (53.5), for firms with state as ultimate owner is 62 (63), for foreigner as ultimate owner is 56 (54), and for legal person as ultimate owner it is 46 (45). For extended definition of family as an ultimate owner mean (median) shareholding is 52(51). Panel D of table 2.4 details summary statistics of cash flow rights of the ultimate owners.

The distribution of ownership of different types is shown in appendix A1 (percentile plots) and A2 (deciles tables). Table in appendix A2 shows that 70 percent of the observations for the largest shareholder (proxy for measuring ownership concentration)

are below 31.40; however, when we take sum of shareholding of the three (five) largest owners the number jumps to 60.17 (71.79). This shows that for most of the firms the largest owner is not holding absolute majority of the votes, instead he holds a sizeable minority block of voting rights.

2.3 Hypotheses:

2.3.1 Direct Ownership and Capital Structure:

Direct ownership represents *direct* voting rights of different types owners. Figure 2.1 shows mutually exclusive categories of direct owners: individuals and institutions. There are two subcategories of individuals – insiders and dispersed individuals, and two subcategories of institutions – financial institutions and non-financial firms. Figure 2.2 (tree diagram) further elaborates that 'government' and 'foreign' shareholders are elements of financial and non-financial institutions, and associated firms and insiders together form a voting bloc labeled as 'group'. Following is the detail on definitions of direct owners and hypotheses on their prospective relation with leverage ratio.

Insiders represent sum of percentage shareholdings by managers, directors and their family[27] members.

There is a range of arguments with respect to the impact of insiders' shareholding on capital structure. First, interest of managers/directors is aligned with outside shareholders in direct proportion to their shareholdings. Second, insiders have invested their non-diversifiable personal wealth (combination of wages and human capital) in the firm. Therefore, they would prefer to have minimum debt in order to avoid bankruptcy and financial distress cost. This strategy of managers becomes pronounced when they are facing shallow labor markets, they are in age bracket where it is difficult to switch profession, and their reputation leads them in alternate jobs available to them in the market. Agrawal and Nagarajan (1990) offer similar explanation in their study on all-equity firms and state that if more family members of the 'insiders' category engaged in

---

[27] According to Banking Companies Ordinance 1962, section 5(ff), family members in relation to a person means his spouse, dependent lineal ascendant and descendants and dependent brothers and sisters.

the firm affairs, then the firms would tend to have low debt in order to protect family[28] human capital. Third, Amihud and Lev (1981), Jensen (1986), and Friend and Lang (1988) argue that in a characteristic setting in which managers are entrenched, they would prefer to keep leverage as low as possible and maintain the firm as a going-concern. These arguments highlight possible negative relation between debt and insiders' ownership.

H2.1: Shareholdings by insiders affect debt ratio negatively.

Associated firms represent percentage shareholding by associated undertakings. According to corporate law in Pakistan, associated undertakings are any two or more companies interconnected with each other (a) if there is an owner/director/partner of a company who owns equal to more than 20 percent voting rights in each of the associated firms; (b) if the firms are under common management or control or one is the subsidiary of the other; and (c) if the undertaking is a Modaraba[29].

Salient features of shareholding by associated firms are as follows: One, associated firms are alternative sources of funds and their shareholding would reduce reliance on debt to finance firm projects. Two, there are executives in associate firms who would be vigilant[30] of management in all associated entities, and behave as *active monitors*. Hence, shareholding by associated firms would work as alternative disciplinary device to debt in controlling agency cost. Three, associated firms enjoy influence on the investee firm's board and they would like to keep tight control on strategic decision making in the firm. For reasons enumerated above, the following may be hypothesized:

H2.2: Shareholdings by associated firms affect debt ratio negatively.

---

[28] It is believed that as the shareholding of insiders goes up the number of family members of that category would go up to split up the shareholding appropriately for tax savings purposes.
[29] Modaraba is Islamic mode of doing business in which one person brings the money and another pools his efforts or skills. It is basically a partnership agreement between equity holder and manager. Refer Modaraba Companies and Modaraba (Flotation and Control) Ordinance, (1980) issued by Ministry of Law & Parliamentary Affairs, Government of Pakistan.
[30] Lev (1988) argues that institutions have better capacity to oversee the managers.

Group represents sum of shareholding by insiders and associates shareholding, forming a voting bloc, and as such inherits properties of the two constituents as regards influence on leverage ratio is concerned.

Financial Institutions: Sum of percentage shareholding by financial institutions, which include banks, insurance companies, pension funds, investment trusts, mutual funds, development financial institutions, etc.

There are some special characteristics attached to this category of *direct* shareholders. One, these institutions, in comparison to non-financial institutions, are more concerned about portfolio diversifications, especially when enforcement of creditors' rights is weak (Burkart and Panunzi, 2006). Two, banks – major players in the financial industry – face supervisory investment limits[31] on overall equity portfolio of the banks with reference to their own equity/assets and investment in one company's shares. Three, financial institutions[32] may have dual relationship with firms – they hold both debt and equity in firms. This double relation gives additional power to monitor the managers. Four, possible dual-relation and capacity of financial institutions to gather and process corporate information reduces information asymmetries between investee and financial institutions. Given that many factors are at work it remains an empirical matter how equity ownership of financial institutions affects debt ratio.

---

[31] Like other Anglo-Saxon economies Pakistan is market-centered economy where banks are not encouraged to play important governance role in the non-financial companies. In this regard the SBP has issued 'Prudential Regulations' for corporate/commercial banking which set standards and limits for banks with regard to their lending and equity holding activities. According to Regulation R-6, para (1.B) Acquisition of shares: (a) Banks or Development Finance Institution (DFIs) shall not own shares of any company in excess of 5% of their own equity. Further, the total investments of banks in shares should not exceed 20% of their own equity. DFIs which are not mobilizing funds as deposits/COIs from general public/individuals will be exempt from the requirement of capping their total investment in equities. However, DFIs which are mobilizing funds as deposits/COIs from general public/individuals will be required to contain their investment in shares up to 35% of their equity. The shares will be valued at cost of acquisition for the purpose of calculating bank's/DFI's exposure under this regulation. The investments of the bank/DFI in its subsidiary companies (listed as well as non-listed) and strategic investments of the bank/DFI shall not be included in these limits. The shares acquired in excess of 5% limit due to the underwriting commitments will be sold off / off loaded within a period of three months. The condition of capping aggregate exposure shall also be applicable on Islamic banks to the extent of 35% of their equity. For the purpose of this regulation, shares will also include units of all forms of Mutual Funds excluding NIT units till its privatization.

[32] Pakistani banks, dominant players in this category, are discouraged from exercising control in day-to-day affairs of the companies unless they are strategic investors, which is an investment made for a period of 5 years or more. For reference see Prudential Regulations issued by the SBP available at www.sbp.org.pk

Foreign represents sum of percentage shareholding by foreigners. As compared to domestic investors, foreign investors, generally, have more investable funds at their disposal. They enjoy special corporate tax concessions[33] which, according to *Trade-off theory*, lower interest tax savings on debt.

Usually foreign investors acquire ownership stake in large firms (Li, Yue and Zhao, 2009). Prospective lenders, in order to diversify their loan portfolio, would like to lend them yet the loan size[34] may be deterring lenders from financing their projects. Moreover, foreigners, as compared to domestic investors, have more own funds and they might be using internal capital markets to finance firm projects.

H2.3: Inverse relation between foreign shareholdings and leverage is expected.

Government represents sum of percentage shares held by government directly or through government agencies. Government ownership is based on economic as well as political objectives, and the latter may dominate the former. The self budget constraints of the government may hamper it to inject more equity in the firms owned by the state. Moreover, in the credit market, government owned banks are ever ready to finance projects of firms with large government shareholding[35]. In this case disciplining role of debt is compromised. Arguing in a similar manner, studies by Shleifer and Vishny (1994), Dewenter and Malatesta (2001), Khwaja and Mian (2005) highlight positive relation between state ownership and leverage. Following is the hypothesis in this regard:

H2.4: Positive relation between government ownership and leverage ratio is expected.

---

[33] "Foreign Private Investment (Promotion and Protection) Act, 1976" issued by the Government of Pakistan provides basis for special tax concessions to the foreigners, especially to ones who invest in industrial undertakings.

[34] The SBP's 'Prudential Regulation' R-1 says "(1) total outstanding exposure (fund based and non-fund based) by a bank/DFI to any single person shall not at any point in time exceed 30% of the bank's / DFI's equity as disclosed in the latest audited financial statements, subject to the condition that the maximum outstanding against fund based exposure does not exceed 20% of the bank's / DFI's equity. (2) The total outstanding exposure (fund based and non-fund based) by a bank/DFI to any group shall not exceed 50% of the bank's / DFI's equity as disclosed in the latest audited financial statements, subject to the condition that the maximum outstanding against fund based exposure does not exceed 35% of the bank's / DFI's equity.

[35] For reference see Gordon and Li (2003), Sapienza (2004), and Berger and di Patti (2006).

Apart from above we have three more categories (1) **outside individuals** which represent percentage of shares held by individuals other than insiders; (2) **individuals** who stand for the sum of the percentage shares held by the insiders and dispersed individuals; and (3) **firms** which denote sum of the percentage shares held by the financial and non-financial institutions.

2.3.2 Ownership Concentration[36] and Capital Structure:

Concentration of ownership controls the agency cost between the shareholders and managers by creating incentive for and monitoring capacity of the block holder. Changing the risk sensitivity of the investor, ownership concentration internalizes monitoring and controls free rider problem (Heinrich, 2002). In order to explore effect of equity ownership concentration on the capital structure, three measures of ownership concentration have been used: first, shareholding by the largest owner; second, in the tradition of La Porta et al. (1998) and Antoniou, Guney and Paudyal (2008), shareholding by top three shareholders; and third, in order to give wider coverage, leverage is regressed on shareholding by top five shareholders (Demsetz and Lehn, 1985; Demsetz and Villalonga 2001; and Brailsford, Oliver and Pua, 2002). Different categories[37] of the single largest shareholder have been identified as insiders, associated firms, financial institutions, foreigner, and government.

According to La Porta et al. (1998) concentrated ownership could be induced by reasons like substantial legal and financial benefits of control, dominant shareholders' capacity to better monitor the managers, and to counteract the poor legal protection available to small investors, etc. Bolton, Becht and Roell (2005) argue that partial ownership concentration and firm control by few large investors solve the collective action problem of the shareholders. In fact, as the stake of shareholders in the firm increases so does the incentive to engage more in firm affairs. Consequently shareholders become more watchful of management activities and try to protect their cash flow rights.

---

[36] Under the Companies Ordinance of Pakistan (1984), section (236) 'Form 34' has been prescribed for firms to disclose the pattern of shareholding; however, neither this law nor 'Code of Corporate Governance' as issued by the SECP, demand that identities of top one or two or three or five, etc. owners should be revealed by the listed firms.
[37] The pattern of shareholding is disclosed in the annual financial statements in such a manner that identity of the single largest from the details on shareholding by different types of direct owners. However, it is not possible to know the identities of the three or five largest shareholders.

Therefore, ownership concentration may substitute debt in the sense that it works as an alternative disciplinary device to control agency cost.

H2.5: Higher concentration of ownership is associated with a lower leverage ratio.

2.3.3 Ultimate Ownership and Capital Structure:

Equity ownership confers control rights. Ultimate owner acquires control rights exceeding his ownership rights. In order to define[38] ultimate owner (alternatively controlling shareholder), all shareholders with at least 5 percent control rights have been analyzed. Ultimate owner is the one who is (a) the largest stakeholder with control rights exceeding a predefined threshold at all links of the control chain, and (b) that shareholder is not controlled by anybody else. That controlling shareholder could be an individual or a group of individuals or state or a legal person. Ultimate shareholder acquires control rights directly or indirectly through listed and non-listed firms. In case of indirect control, through pyramids, cross-holding[39] and dual-class shares, ownership chains are traced and control (cash flow) rights are calculated to identify the controlling shareholders.

In contrast to direct shareholding, which is calculated at the first/base level of ownership hierarchy, ultimate ownership is calculated at the top level of control chain. Claessens,

---

[38] Faccio and Lang (2002) define ultimate shareholder as "a shareholder of a corporation is said to be an ultimate owner at a given threshold if he controls it via a control chain whose links all exceed that threshold. If a firm has two owners with 12 percent of control rights each, then we say that the firm is half controlled by each owner at the 10 percent threshold, but that the firm is widely-held at the 20 percent threshold. In the case of a firm with two owners – a family with 20 percent of control rights and a widely-held corporation with 19 percent of control rights – we would say that this firm is half controlled by each owner at the 10 percent threshold, but family-controlled at the 20 percent threshold". They define control chain as "a firm can be controlled by holdings through multiple control chains, even though it is not controlled by pyramiding. For example, suppose that Firm A controls 10 percent of B and 100 percent of C, which controls 15 percent of B. Since C is fully controlled by A in the control chain A-C-B, there is no pyramiding. However, Firm A controls Firm B directly and indirectly through Firm C, with control rights of 25 percent. We conclude that Firm A controls Firm B through multiple control chains because: (1) Firm B has a controlling owner at the 20 percent level; (2) B is controlled via multiple control chains; and (3) all links in each chain involve at least 5 percent of the control rights..

[39] Chernykh (2005) has defined pyramids and cross-ownership as following: "A pyramid is a group of companies with a vertical control chain that has an ultimate owner at its foundation. This arrangement allows the ultimate owner to effectively control all companies in a chain by owning just a fraction of their equity". "Cross-holdings or reciprocal holdings – occur when the company directly or indirectly controls its own stock. In other words, two or more companies may maintain interlock ownership positions in each other".

Djankov, Fan, Lang (2002), while studying the impact of cash flow and voting rights of the largest owner, highlight the difference between *direct* and *ultimate* owner. In their words, "In most cases, the immediate shareholders of a corporation are corporate entities, nonprofit foundations, or financial institutions. We then identify their owners, the owners of those owners, and so on. We do not consider ownership by individual family members to be separate, and we use total ownership by each family group-defined as a group of people related by blood or marriage-as the unit of analysis". Following these arguments the standard methodology as developed by La Porta et al. (1999) and, among others, followed by Claessens et al. (2000), Faccio and Lang (2002), and Barontini and Caprio (2005), has been followed in this dissertation.

Figure 2.3: An Example of Hypothetical Pyramid
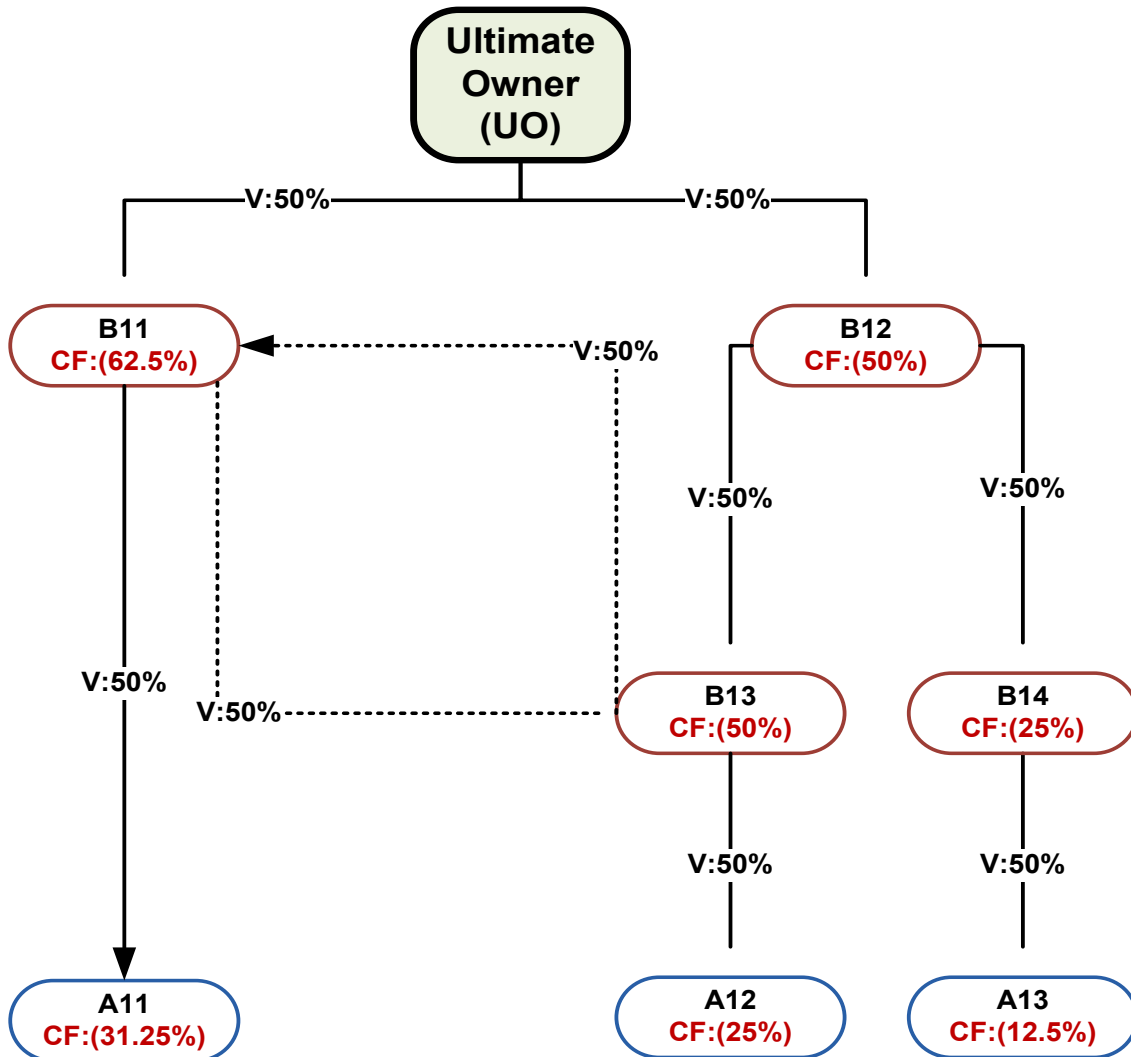
Figure 2.3 shows hypothetical diagram of a business group with dominant pyramidal structure, except with B11 and B13 (connected with dotted arrows) having 50 percent cross-shareholding each. Assume that ultimate owner is a family and there is one-share-one-vote rule, then control rights of the family are shown along the arrows and cash flow rights are shown inside the boxes. Blocks labeled as 'A' show firms which fall at the end of control chains and blocks labeled as 'B' are intermediate firms. Ultimate owner sits on the top of control chains. Voting (cash flow) rights of the ultimate owner in firm 'A11' are 50 (31.25) percent, in firm 'A12' 50 (25) percent, in firm 'A13' 50 (12.5) percent. In firms labeled as 'B' voting (cash flow) rights in 'B11' are 50 (62.5), in 'B12' and 'B13' are 50 (50) percent, and in firm 'B14' voting (cash flow) rights 50 (25) percent.

Different studies have used different thresholds[40] - La Porta et al. (1999) and Faccio and Lang (2002) have used 10 percent and 20 percent voting rights thresholds in their study; Claessens et al. (2000) have used 5 percent control rights thresholds; Chernykh (2005) have used 25 and 50 percent thresholds alternatively; and Bjuggren, Dzansi, and Palmberg (2007) have used 20 percent threshold in their analyses of the investment performance of the firms with family as the largest stakeholder. In this study I have used three thresholds 10 percent, 25 percent and 50 percent - first is used for broader coverage of sample, second level calculates effect of blocking minority and third, the conservative level, gives effect of absolute majority. After having implemented the threshold levels if there are two or more owners fitting the definition of ultimate owner, the one with larger stake has been picked for this study (Claessens et al. 1999).

An important characteristic of ultimate ownership is the identity of ultimate/controlling shareholder. In this dissertation ultimate owners have been categorized[41] as following:

---

[40] Following provisions of Pakistani corporate law are relevant in this regard: (1) 10 percent or more voting rights in a company would designate the holder as 'promoter' of that company, and that promoter would have to follow certain rules and regulations, which include mandatory disclosure of shareholding to the stock exchange. (2) Anyone who wishes to acquire more than 10 percent but less than 25 percent voting rights in a listed company shall make public announcement to the effect of shareholding rights one wants to acquire. (3) Acquisition of more than 50 percent voting rights in a company entitles the holder of those rights with the control rights of the company. For further reference see "Substantial Acquisition of Voting Shares and Takeovers Ordinance, 2002." available at www.secp.gov.pk.

[41] La Porta et al. (1999a), and Facio and Lang (2002) have categorized firms into widely-held firms and those with ultimate owner. Further, they have introduced five types of ultimate owners: (1) family or individual, (2) state, (3) widely held financial institution, (4) widely held firm, and (5) miscellaneous. However, unlike these studies I have focused on only Pakistan's non-financial listed firms, therefore the

1) family or individual, 2) state, 3) foreigner, and 4) legal person (a non-listed private company for which ownership information is not available). Normally family firms have one or more members of the family who are represented on the board of directors and/or they occupy slots as top executives of the firm. As regards 'legal person', data limitations force us to classify it as a separate category. However, alternatively, following Faccio and Lang (2002), ultimate ownership by 'legal person' (unlisted firm) has been clubbed together with 'family' as ultimate owner. They argue that unlisted 'legal person', having black-box nature, normally functions as a holding company for family assets. This alternative definition reduces types of ultimate owners to 1) family or individual, 2) state, and 3) foreigner. However, this alternative procedure may bias ultimate ownership measure. Results for both ultimate family and legal person as separate categories, and then clubbed together has been discussed. Lastly, there are some firms with either highly diffused ownership structure or those for which information on the identity of the owners is opaque are labeled as widely held.

Ultimate owner enjoys control over the firm decisions and affect financing choice of the firm. The impact of control rights of ultimate owner on leverage ratio may be positive or negative. Following are the explanations in this regard:

Controlling shareholders enjoy enormous benefits of control. Therefore, they would prefer to issue debt in place of equity for financing firm projects. This would help them avoid dilution of their control vis-à-vis other block holders or other equity holders who are potential raiders trying to take over the firm. Furthermore, given wide difference between control and ownership rights, the asymmetry between liability to suffer the loss in bad states and possibility of enjoying excess profits in good states would increase risk appetite of the controlling shareholders. Therefore, controlling shareholder would like to increase leverage to finance firm projects. In such circumstances *asset substitution* might takes place. Ultimate shareholder may issue debt for self-disciplining purpose giving signal about transparency in the use of free cash flows of the firm. These

---

type 'foreigners' has been introduced as an independent class. The category 'widely-held financial institutions' has been excluded from this study on account of the fact that banking companies in Pakistan are not encouraged to invest in non-financial firms as strategic investors. However, when financial institutions, banking as well as non-banking financial institutions (insurance companies, pension funds, mutual funds, etc.) hold equity stake in non-financial listed firms in Pakistan, it has been possible to trace the ultimate ownership of those firms as financial institutions make disclosure of their ownership structure.

arguments make a case of positive relation between control rights of ultimate shareholder and leverage ratio.

Conversely, there are arguments which assert that ultimate shareholder would like to reduce leverage. If he is extracting private benefits of control through tunneling[42] he would like to have minimum debt so that disciplining role of debt would not constrain this activity. Du and Dai (2005) has termed it as "reduce-debt-for-tunneling effect". Moreover, if legal system in the country is weak and fails to protect rights of minority shareholders then controlling shareholder would prefer to have higher concentration[43] of voting rights in the firm. This motive would impact leverage ratio negatively. Besides, higher concentration of ownership may work as an alternate device in controlling agency cost thereby lowering importance of debt in this regard. Based upon this discussion it may hypothesized that

Family as an ultimate owner is the dominant category. If family is the ultimate shareholder of a firm, while balancing the bankruptcy risk against tax benefits of debt, it would tend to jealously safeguard its interests in the firms against threat of takeovers by other families or firms, and in order to do that it might increase debt levels to that limit where its firms loose attraction for possible takeovers. Moreover, families are long term investors and firms under their control have longer histories. These factors soften their access to credit market. Therefore, it may be hypothesized:

H2.6: Shareholdings by family as ultimate controlling shareholders affect leverage ratio positively.

---

[42] Johnson, La Porta, Lopez-de-Silanes & Shleifer (2000) define tunneling as "transfer of resources out of a company to its controlling shareholder (who is typically also a top manager)". They say "tunneling comes in two forms. First, a controlling shareholder can simply transfer resources from the firm for his own benefit through self-dealing transactions. Such transactions include outright theft or fraud, which is illegal everywhere (though often goes undetected or unpunished), but also asset sales and contracts such as transfer pricing advantageous to the controlling shareholder, excessive executive compensation, loan guarantees, expropriation of corporate opportunities, and so on. Second, the controlling shareholder can increase his share of the firm without transferring any assets through dilutive share issues, minority freeze-outs, insider trading, creeping acquisitions, or other financial transactions that discriminate against minorities".

[43] La Porta et al. (1998), Bebchuk (1999a,b) and Nenova (2003) highlight downside risk of this concentration of equity ownership in the hands of ultimate owner by arguing that they might be expropriating minority shareholders as well as debt holders by voting for very risky projects.

40

Other types of ultimate owner – namely state and foreigners – would impact capital structure choice according to the same set of arguments as described in subsection 'direct ownership and capital structure'. However, the nature and strength of the impact of shareholding by foreigners and state as ultimate owners is left for empirical testing.

2.3.4 Control Variables:

Firm size: It is measured as natural log of gross sales. The information aspect as proposed by Rajan and Zingales (1995) argues that bigger firms are more transparent and hence risk of undervaluation of stocks are less, encouraging big firms to issue equity in place of debt. This implies a negative relation between firm size and leverage ratio. On the other hand 'too big to fail' cliché suggests that firm size is expected to have positive relation with the leverage ratio. Bigger firms are more diversified and have less probability of default as compared to their smaller counterparts (Friend and Lang, 1988; and Agarwal and Nagarajan, 1990). Part of the reason lies in the fact that bigger firms normally have longer corporate histories in the market. This builds their reputation further and they consolidate their access to debt markets, where they can borrow at cheaper rates (because average fixed costs of lending to bigger firms are less as compared to that for smaller firms). Bankruptcy costs, which have bearing upon leverage decision, are less relevant for bigger firms as they are substantially lower as compared to their firm value (Titman and Wessels, 1988).

Tangibility: Asset specificity is measured as ratio of fixed assets to total assets. Tangible assets, unlike intangibles, make it possible for the lender to value them correctly as available collaterals and avoid problems of information asymmetry arising from value discovery process of intangibles (Jensen and Meckling, 1976). This implies that a higher proportion of tangible assets makes it easier for the firm to pledge firm resources for acquiring debt and reduces the risks of asset substitution (Stulz and Johnson, 1985). Moreover, in bankruptcy, tangible assets are more likely to have some market value. Therefore, asset tangibility is expected to have positive relation with leverage ratio.

Profitability: It is measured as ratio of net profit before tax to equity (Carlton and Silberman, 1977; and Friend and Lang, 1988). *Pecking Order Theory* (POT) (Myers and Majluf, 1984) purposes that profitability has negative impact on leverage. Firms according to POT prefer to employ internal resources, which are built through higher profits, over the external ones. Therefore more profitable firms having more reserves will have lower leverage ratio. On the other hand, signaling theory says that increase in debt in itself is a signal of strength about firm performance, and that creditors are ready to lend. Therefore, according to signaling theory profitability has positive relation with leverage.

Growth opportunities: These are measured by ratio of market value of stock to book value of stock. According to POT there is negative relation between growth opportunities and leverage ratio. However, if internal resources of the firm are not sufficient to capitalize on those growth opportunities then the firm will exhaust debt capacity before issuing equity. Many studies (Titman and Wessels, 1988; and Mehran, 1992) postulate that in growing firms managers have higher tendency to expropriate funds from debt-holders. This, again, asserts a negative relation between growth and leverage. *Market-timing hypothesis* states that managers, facing growth opportunities, issue equity when their stocks are overvalued.

Dividend payout: This is the ratio of total dividends to net profit before taxes. There are competing explanations as far as relation of dividend payout ratio with leverage is concerned. Rozeff (1982), Easterbrook (1984), and Jensen (1986) argue that dividend payments control agency costs by reducing free cash flows available to managers and bring firm under greater market scrutiny. They argue that there is substitution of non-dividend monitoring devices by the dividend-monitoring. Higher dividend payout projects better future prospects and reduces cost of equity for firm, and it is usually followed by ew equity issues. This line of arguments suggests a negative relation between dividend payout ratio and leverage.

Firm Risk: This is measured as standard deviation of the market value of common share for last four years. More fluctuations in market value of a firm indicate lack of stability of firm policies affecting confidence of investors. As more risky firms would

find it difficult to get loans on better terms, it may be expected that relation between firm riskiness and leverage is negative.

Non-debt tax shield: This is measured as ratio of current depreciation to total assets. Modigliani and Miller (1963) revised their 'capital structure irrelevance' hypothesis by identifying that when firms have reasonable proportion of taxable income interest tax concessions must lead to higher proportions of debt in firm financing. The tax deductions for depreciation and investment tax credits can be considered as substitutes for tax benefits of debt financing. This implies that firms which have higher levels of these non-debt tax shields will have lower levels of debt (DeAnglo and Masulis, 1980).

2.4 The Model

The estimation techniques for panel analyses include constant coefficient model, fixed effects model, random effects model and generalized method of moments (System GMM)[44]. Leverage as a function of ownership, along with other control variables, has been modeled as in the following equations. Equation (2.1) is used to analyze effect of different types of *direct* owners on leverage; equation (2.2) estimate effect of *ownership concentration* on leverage ratio; and equation (2.3) estimate how different types of *ultimate* owners affect financing choice of a firm.

$$Y_{i,t} = \alpha_i + \sum_{i=1}^{k} \beta . X_{i,t} + \gamma . Z_j + v_{i,t} \tag{2.1}$$

$$Y_{i,t} = a_i + \sum_{i=1}^{k} b . X_{i,t} + d . VR_{i,t}^{:c} + f . VR_{i,t}^{:c} * D_s + \mu_{i,t} \tag{2.2}^{[45]}$$

$$Y_{i,t} = \psi_i + \sum_{i=1}^{k} \theta . X_{i,t} + \rho . VR_{i,t} * D_{th} + \delta . VR_{i,t} * D_{th} * D_u + \xi_{i,t} \tag{2.3}$$

---

[44] Linear Dynamic Panel-data Estimation Model in Arellano-Bond tradition.

[45] As the identities of top three and top five shareholders have not been included in the analyses, therefore, when 'c' represents sum of shareholding by top three or five shareholders, the interaction term with coefficient 'f' drops out of equation (2.2).

In above equations *'i'* represents ith firm, *'t'* is the time dimension, *'j'* is the type of direct shareholder (insiders, associated firms, group, financial institutions, state, foreigner, and dispersed individuals), *'c'* is the proxy for ownership concentration (Top1 or Top3 or Top5), *'s'* represents type of the single largest owner (insiders, associated firms, financial institutions, state, and foreigner), *'u'* represents type of ultimate owner (family, state, foreigner, legal person). Following are the definitions of key variables in the above equations

$Y_{i,t}$:   Leverage

$X_{i,t}$:   Vector of control variables (firm size, asset tangibility, market-to-book ratio, firm profitability, dividend payout ratio, non-debt tax shields).

Z_j: Direct ownership (voting rights) by owner type j, and coefficient of this variable shows effect of shareholding by direct owner j on the leverage ratio.

$VR_{i,t,c}$:   Ownership of 'c' type of proxy for ownership concentration (Top1 or Top3 or Top5).

D_j: Dummy variable for type 'j' of direct owners.

$VR_{i,t,c}*D_j$:   Interaction term of voting rights of 'c' type of proxy for ownership concentration and dummy for 'j' type of direct owner. For instance 'c' is the largest owner (Top1) and 'j' represents direct shareholding of financial institutions then coefficient of this variable separate the effect of voting rights of financial institution as the largest owner from the voting rights of the largest owner without mention of its type.

D_{th}:   Dummy variable for threshold level 'th' (10 percent, 25 percent or 50 percent of voting rights.

$VR_{i,t}*D_{th}$:   Interaction term of voting rights of ultimate owner (without considering type of the ultimate owner) and dummy for 'th' level of threshold of voting rights.

$VR_{i,t}*D_{th}*D_u$:   Interaction term of voting rights of ultimate owner and dummy for threshold level (10, 25 or 50 percent voting rights) and dummy for 'u' type of ultimate owner. For example 'u' represents family as the ultimate owner with at least 25 percent voting rights (threshold

level), then coefficient of this variable separate effect of shareholding of family as ultimate owner, given that the shareholding is at least 25 percent of the voting rights, from the effect of voting rights of ultimate owner (without mention of its type) with at least 25 percent voting rights.

In above models disturbance term varies over time and we assume that it is free of serial correlation. It has properties like zero mean and σ^2 variance. All the equations have been estimated using the fixed effects (FE) model[46].

2.5 Empirical Results

2.5.1 Direct ownership and Leverage

Results in Table 2.5 show effect of *direct* ownership by owner type 'j' on leverage ratio. Direct ownership by **insiders** (model 1) is focus category. Results show that shareholding by insiders[47] is negatively related to leverage ratio and coefficient is statistically significant, and plausible explanations of this negative relation are as follows: One, in terms of controlling agency cost, it appears that shareholding by insiders work as a substitute to debt. As shareholding by insiders increases the need for debt as a disciplining device decreases. Two, managers tend to protect their non-diversifiable human capital which would be threatened by bankruptcy risk caused by issuing debt. Therefore, they would like to have minimum debt. Three, managers prefer to avoid performance pressure caused by compulsions of regular debt repayments. Four, in the absence of monitoring by debt holders, managers would be extract private benefits of control. Therefore insiders prefer less debt. These results are consistent with the findings of Friend and Lang (1988), Jensen et. al. (1993), Bathala et. al. (1994), and Seetharaman et. al. (2001). However, they do not agree with the findings of Leland and

---

[46] We have applied 'random effect (RE) model'. Hausman test confirms that FE is preferred over RE.

[47] We have tested our model for quadratic relation between the leverage and insiders' ownership to calculate if the 'incentive effect' of insider ownership changes to 'entrenchment effect' at the higher level of insider ownership. However, the coefficient of quadratic term is statistically insignificant. Therefore, our findings are not consistent with the idea of curvilinear relationship between managerial ownership and firm value as proposed by Fama and Jensen (1983), Demsetz (1983), Morck et. at (1988), and McConnell and Servaes (1990) and (1995).

Pyle (1977), Chen and Steiner (1996), and Berger et. al. (1997), finding that managerial ownership has positive relation with leverage.

The model 2 in table 2.5 shows that shareholding by **associated firms** affects leverage ratio negatively. This inverse relation asserts that associated firms replace debt as an alternative source of funds and as a tool controlling agency cost. Moreover, associated firms may be extracting benefits of control by keeping debt ratio as low as possible. Similar results hold for overall **group** (sum of insiders and associated firms) shareholdings. This shows that group works as a voting bloc of insiders and associated firms. Table 2.5 (model 4) shows that shareholding by **financial institutions** affect leverage ratio positively. Possible reasons for this positive relation include financial institutions as equity holders would like the firm to increase debt so that firm may be brought under the discipline of debt holder. This is very important when financial institutions are not allowed by their regulators to participate in the day-to-day affairs of the firm. This is how financial institutions would exploit possible double role - as shareholders as well as bondholders – and exercise more control. Another argument is that financial institutions, which are constrained by supervisory investment limits, would increase their stake, and hence the control, in the firm by encouraging it to increase leverage.

Further table 2.5 (models 5 and 6) shows that **foreign** ownership is negatively related to leverage ratio, and **government** ownership, as hypothesized, is associated with higher leverage ratio. However, both these results are statistically not different from zero.

2.5.3 Ownership Concentration and Leverage

Models 1, 2 and 3 of table 2.6 show effect of shareholding by top five, top three and the single largest shareholders, respectively, on the leverage ratio. For all three measures of ownership concentration the effect is negative and statistically significant. This shows that the tightly held the equity ownership of the firms is the lower is the debt appetite. It may be argued, concentration of equity ownership aligns the interest of shareholders and manager by creating incentive for big block holders to oversee the activities of the management. In both cases disciplinary role of debt, it seems, is replaced by

concentration of equity ownership. These findings are consistent with the results of Antoniou et al. (2008) for pooled data.

Models 4 to 8 present results for different types of the largest owner and show that only financial institutions as the largest owners affect the leverage ratio positively and for all other types of the largest owner it is negative. As shown in the table 2.6 the coefficients of the interaction terms for insiders, associated firms, government and foreigners as the largest owner are statistically insignificant.

2.5.2 Ultimate Ownership and Leverage

In the following pages tables 2.7, 2.8, and 2.9 show the impact of ultimate ownership structure on leverage ratio for threshold levels 10, 25 and 50 percent respectively. Relation between ultimate ownership structure and leverage ratio is estimated by interacting three variables: voting rights of the ultimate owner (VR), dummy for a particular threshold level (D_{th}), and dummy variable to identify type of ultimate owner.

As shown in the following table 2.7 ultimate ownership by family (for both narrow and extended definitions – Fam and FamE) the coefficient of the interaction terms is positive for all threshold levels (10, 25 and 50 percent). The positive coefficients show that families use debt as a device to protect their control rights over the firm. They increase leverage to shield their firms from takeovers as high leverage ratio would lessen chances of takeover by rivals (see Harris and Raviv (1988), and Stulz (1988)). It may further be argued that families use debt as a signaling device. On the one hand debt issuance may be projected as self-discipline device, especially with regard to free cash flows of the firm; and on the other hand, higher debt shows confidence of creditors on firm projects. Nevertheless, main reason which for family controlled firms issue debt, in place of equity, is that they want to ensure their control over the firm.

For other types of ultimate owner - state, foreigners and legal person - coefficients of the interaction terms are statistically insignificant for all threshold levels.

Table 2.5: Direct Ownership and Capital Structure:

$$Y_{i,t} = \alpha_i + \sum_{i=1}^{k} \beta.X_{i,t} + \gamma.Z_j + \nu_{i,t}$$

Leverage is dependent variable and equity holding of direct owner (of type j) is the main explanatory variable. Log of sales, asset tangibility (Tang), market to book ratio (M/B), return on equity (RoE), risk, dividend payout ratio (DPO), and non-debt tax shield (Ndts) are control variables. Types (j) of direct owner include: Insiders, Associated Firms (AF), Group (Insiders + Associated firm)., Financial Institutions (FI), Foreigner, and State (Government of Pakistan).

	(1) Insider	(2) Associate	(3) Group	(4) FI	(5) For	(6) State
ln(s)	-1.687***	-1.720***	-1.644***	-1.395**	-1.668***	-1.640***
	(-2.88)	(-2.94)	(-2.81)	(-2.39)	(-2.80)	(-2.72)
Tang	0.104***	0.103***	0.107***	0.097***	0.101***	0.103***
	(2.81)	(2.78)	(2.89)	(2.64)	(2.72)	(2.76)
M/B	-1.204***	-1.202***	-1.222***	-1.256***	-1.195***	-1.197***
	(-5.97)	(-5.97)	(-6.08)	(-6.28)	(-5.92)	(-5.93)
RoE	-0.019***	-0.019***	-0.019***	-0.019***	-0.019***	-0.019***
	(-4.48)	(-4.57)	(-4.53)	(-4.42)	(-4.51)	(-4.53)
Risk	-2.377***	-2.346***	-2.317***	-2.342***	-2.408***	-2.381***
	(-7.39)	(-7.28)	(-7.21)	(-7.36)	(-7.47)	(-7.38)
DPO	-1.241	-1.270	-1.263	-1.172	-1.262	-1.248
	(-1.41)	(-1.44)	(-1.44)	(-1.34)	(-1.43)	(-1.41)
Ndts	0.160*	0.152*	0.141*	0.118	0.168**	0.165*
	(1.88)	(1.78)	(1.66)	(1.39)	(1.97)	(1.94)
Insider	-0.084*					
	(-1.80)					
AF		-0.148**				
		(-2.11)				
Group			-0.144***			
			(-3.16)			
FI				0.318***		
				(5.18)		
Foreigner					-0.044	
					(-0.58)	
State						0.069
						(0.65)
Const.	78.285***	78.425***	81.849***	69.501***	76.243***	75.465***
	(16.76)	(16.88)	(16.86)	(14.86)	(16.80)	(16.06)
Obs.	1525	1525	1525	1525	1525	1525
R²	0.12	0.12	0.13	0.14	0.12	0.12
F-value	21.16	21.33	22.11	24.51	20.74	20.75
Within	14.06	14.03	14.11	14.37	13.66	13.94
Hausman	541.64	456.56	704.79	1392.2	209.55	412.72
p-value	0.00	0.00	0.00	0.00	0.00	0.00

t-stat in parenthesis, *** significant at 10%; ** at 5%; * at 1% levels.

Table 2.6: Ownership Concentration and Capital Structure

$$Y_{i,t} = a_i + \sum_{i=1}^{k} b.X_{i,t} + d.VR_{i,t,c} + f.VR_{i,t,c} * D_j + \mu_{i,t}$$

Leverage is dependent variable and proxy for ownership concentration (c = T1, T3 or T5) is the main explanatory variable. 'j' presents type of the largest owner (Insider, associated firm, financial institution, state or foreigner). Log of sales, asset tangibility (Tang), market to book ratio (M/B), return on equity (RoE), risk, dividend payout ratio (DPO), and non-debt tax shield (Ndts) are control variables. Types (j) of direct owner include: Insiders, Associated Firms (Associate), Group (Insiders + Associated firm)., Financial Institutions (FI), Foreigner, and State (Government of Pakistan).

	(1) T5	(2) T3	(3) T1	(4) T1-Insider	(5) T1-AF	(6) T1-FI	(7) T1-State	(8) T1-For.
ln(s)	-1.695***	-1.730***	-1.668***	-1.679***	-1.657***	-1.609***	-1.666***	-1.674***
	(-2.90)	(-2.96)	(-2.86)	(-2.88)	(-2.84)	(-2.76)	(-2.86)	(-2.87)
Tang.	0.100***	0.099***	0.100***	0.099***	0.103***	0.104***	0.100***	0.097***
	(2.69)	(2.66)	(2.69)	(2.66)	(2.78)	(2.79)	(2.69)	(2.60)
M/B	-1.193***	-1.195***	-1.190***	-1.185***	-1.199***	-1.234***	-1.191***	-1.191***
	(-5.93)	(-5.94)	(-5.93)	(-5.89)	(-5.98)	(-6.12)	(-5.93)	(-5.94)
RoE	-0.019***	-0.019***	-0.020***	-0.020***	-0.020***	-0.020***	-0.020***	-0.019***
	(-4.54)	(-4.53)	(-4.62)	(-4.61)	(-4.71)	(-4.71)	(-4.61)	(-4.59)
Risk	-2.442***	-2.445***	-2.366***	-2.368***	-2.345***	-2.330***	-2.365***	-2.370***
	(-7.59)	(-7.61)	(-7.39)	(-7.39)	(-7.32)	(-7.27)	(-7.38)	(-7.40)
DPO	-1.221	-1.199	-1.274	-1.262	-1.281	-1.343	-1.275	-1.271
	(-1.39)	(-1.36)	(-1.45)	(-1.43)	(-1.46)	(-1.53)	(-1.45)	(-1.45)
Ndts	0.166*	0.163*	0.129	0.129	0.121	0.122	0.129	0.132
	(1.96)	(1.92)	(1.51)	(1.51)	(1.41)	(1.43)	(1.51)	(1.54)
T5	-0.122**							
	(-2.48)							
T3		-0.116***						
		(-2.60)						
T1			-0.188***	-0.204***	-0.162***	-0.206***	-0.188***	-0.175***
			(-3.56)	(-3.19)	(-2.91)	(-3.84)	(-3.56)	(-3.08)
T1-Insid.				0.031				
				(0.44)				
T1-AF					-0.124			
					(-1.46)			
T1-FI						0.217*		
						(1.87)		
T1-State							0.016	
							(0.08)	
T1-For.								-0.075
								(-0.65)
Constant	83.580***	82.286***	81.511***	81.817***	81.661***	80.732***	81.475***	81.725***
	(15.47)	(16.18)	(17.16)	(17.03)	(17.19)	(16.94)	(17.07)	(17.16)
Obs.	1525	1525	1525	1525	1525	1525	1525	1525
R²	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.13
F-value	21.57	21.65	22.49	20.00	20.25	20.43	19.98	20.03
Within	13.95	13.97	14.08	13.99	14.08	14.11	13.99	13.93
Hausman	290.55	294.98	385.87	459.19	406.93	423.97	322.74	347.09
p-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

t-stat in parenthesis, *** significant at 10%; ** at 5%; * at 1% levels.

Table 2.7: Ultimate Ownership and Capital Structure (Dependent Variable: Leverage)

$$Y_{i,t} = \psi_i + \sum_{i=1}^{k} \theta.X_{i,t} + \rho.VR_{i,t} * D_{th} + \delta.VR_{i,t} * D_{th} * D_u + \xi_{i,t}$$

Leverage is dependent variable and equity holding of ultimate owner (of type u) is the main explanatory variable. Model 1 shows impact of shareholding by ultimate owner (without mention of its type). D_{th} is dummy for threshold of voting rights (th = 10, 25 or 50 percent), D_u = dummy for type 'u' of ultimate owner. Model 2 to 6 show effect of shareholding by specified type (u) of ultimate owner. Log of sales, asset tangibility (Tang), market to book ratio (M/B), return on equity (RoE), risk, dividend payout ratio (DPO), and non-debt tax shield (Ndts) are control variables. Types (u) of ultimate owner include: Family, State, Foreigner, Legal person (LP) and Family (extd.) = Family + LP.

Threshold dummies	UO (Model 1)			Family (Model 2)			State (Model3)		
	D_{10}	D_{25}	D_{50}	D_{10}	D_{25}	D_{50}	D_{10}	D_{25}	D_{50}
ln(s)	-1.621***	-1.664***	-1.687***	-1.577***	-1.645***	-1.671***	-1.623***	-1.664***	-1.681***
	(-2.78)	(-2.85)	(-2.88)	(-2.72)	(-2.82)	(-2.86)	(-2.79)	(-2.85)	(-2.87)
Tang.	0.096***	0.096***	0.100***	0.091**	0.092**	0.097***	0.096***	0.096***	0.099***
	(2.60)	(2.60)	(2.68)	(2.47)	(2.49)	(2.61)	(2.59)	(2.58)	(2.66)
M/B	-1.229***	-1.240***	-1.195***	-1.189***	-1.213***	-1.193***	-1.225***	-1.234***	-1.201***
	(-6.13)	(-6.16)	(-5.94)	(-5.93)	(-6.02)	(-5.93)	(-6.11)	(-6.12)	(-5.96)
RoE	-0.019***	-0.019***	-0.019***	-0.018***	-0.019***	-0.019***	-0.019***	-0.019***	-0.019***
	(-4.49)	(-4.52)	(-4.47)	(-4.29)	(-4.39)	(-4.41)	(-4.46)	(-4.49)	(-4.46)
Risk	-2.346***	-2.357***	-2.387***	-2.356***	-2.367***	-2.389***	-2.338***	-2.348***	-2.375***
	(-7.33)	(-7.35)	(-7.43)	(-7.39)	(-7.39)	(-7.44)	(-7.31)	(-7.32)	(-7.39)
DPO	-1.237	-1.209	-1.253	-1.183	-1.147	-1.183	-1.205	-1.172	-1.233
	(-1.41)	(-1.37)	(-1.42)	(-1.35)	(-1.30)	(-1.34)	(-1.37)	(-1.33)	(-1.40)
Ndts	0.136	0.146*	0.160*	0.121	0.138	0.156*	0.137	0.146*	0.160*
	(1.61)	(1.71)	(1.88)	(1.43)	(1.62)	(1.84)	(1.62)	(1.72)	(1.88)
UO	-0.179***	-0.124***	-0.046**	-0.335***	-0.221***	-0.111***	-0.169***	-0.115***	-0.038
	(-4.00)	(-3.09)	(-1.99)	(-4.98)	(-3.71)	(-2.80)	(-3.70)	(-2.80)	(-1.62)
Family				0.277***	0.176**	0.098**			
				(3.10)	(2.19)	(2.01)			
State							-0.24	-0.293	-0.13
							(-1.08)	(-1.32)	(-1.33)
Constant.	85.047***	82.439***	77.775***	84.270***	81.906***	77.895***	85.285***	82.818***	77.784***
	(16.95)	(16.67)	(16.92)	(16.84)	(16.57)	(16.97)	(16.99)	(16.73)	(16.93)
Obs.	1525	1525	1525	1525	1525	1525	1525	1525	1525
R²	0.13	0.13	0.12	0.14	0.13	0.13	0.13	0.13	0.12
F-value	22.97	22.05	21.26	21.63	20.2	19.39	20.55	19.81	19.11
Within	14.09	13.991	13.976	14.194	14.019	13.996	14.035	13.953	13.986

(Continued)

Table 2.7 (continued)

Threshold dummies	Foreigner (Model 4)			LP (Model 5)			Family (extd.) (Model 6)		
	D_{10}	D_{25}	D_{50}	D_{10}	D_{25}	D_{50}	D_{10}	D_{25}	D_{50}
ln(s)	-1.619***	-1.665***	-1.686***	-1.608***	-1.672***	-1.686***	-1.615***	-1.676***	-1.674***
	(-2.78)	(-2.85)	(-2.88)	(-2.76)	(-2.86)	(-2.88)	(-2.78)	(-2.88)	(-2.87)
Tang.	0.094**	0.090**	0.099***	0.099***	0.095**	0.100***	0.085**	0.083**	0.092**
	(2.50)	(2.39)	(2.64)	(2.66)	(2.54)	(2.68)	(2.28)	(2.22)	(2.48)
M/B	-1.230***	-1.243***	-1.195***	-1.223***	-1.243***	-1.195***	-1.207***	-1.219***	-1.203***
	(-6.13)	(-6.17)	(-5.93)	(-6.09)	(-6.17)	(-5.93)	(-6.03)	(-6.06)	(-5.98)
RoE	-0.019***	-0.019***	-0.019***	-0.019***	-0.019***	-0.019***	-0.018***	-0.019***	-0.019***
	(-4.48)	(-4.51)	(-4.47)	(-4.47)	(-4.53)	(-4.47)	(-4.35)	(-4.39)	(-4.42)
Risk	-2.349***	-2.365***	-2.388***	-2.347***	-2.357***	-2.388***	-2.353***	-2.369***	-2.381***
	(-7.34)	(-7.37)	(-7.43)	(-7.33)	(-7.35)	(-7.43)	(-7.38)	(-7.41)	(-7.43)
DPO	-1.241	-1.22	-1.254	-1.240	-1.218	-1.251	-1.175	-1.169	-1.21
	(-1.41)	(-1.39)	(-1.42)	(-1.41)	(-1.38)	(-1.42)	(-1.34)	(-1.33)	(-1.37)
Ndts	0.138	0.149*	0.161*	0.126	0.150*	0.159*	0.150*	0.156*	0.170**
	(1.62)	(1.75)	(1.88)	(1.47)	(1.75)	(1.87)	(1.77)	(1.83)	(2.00)
UO	-0.174***	-0.112***	-0.045*	-0.166***	-0.132***	-0.045*	-0.367***	-0.293***	-0.169***
	(-3.70)	(-2.63)	(-1.89)	(-3.48)	(-3.02)	(-1.80)	(-4.56)	(-4.00)	(-3.05)
Foreigners	-0.053	-0.106	-0.01						
	(-0.34)	(-0.84)	(-0.11)						
LP				-0.095	0.050	-0.005			
				(-0.72)	(0.45)	(-0.08)			
FamE.							0.272***	0.241***	0.149**
							(2.81)	(2.75)	(2.45)
Constant.	85.289***	82.923***	77.831***	85.019***	82.542***	77.761***	84.366***	82.203***	78.396***
	(16.83)	(16.66)	(16.83)	(16.94)	(16.67)	(16.90)	(16.85)	(16.67)	(17.07)
Obs.	1525	1525	1525	1525	1525	1525	1525	1525	1525
R^2	0.13	0.13	0.12	0.13	0.13	0.12	0.14	0.13	0.13
F-value	20.41	19.67	18.88	20.46	19.61	18.88	21.41	20.55	19.64
Within	13.938	13.843	13.878	14.082	13.98	13.965	14.177	14.063	14.011

t-stat in parenthesis, *** significant at 10%; ** at 5%; * at 1% levels

2.5.4 Control Variables:

Results of conventional factors determining the capital structure are consistent with earlier studies. In following paragraph we give the details.

The size of the firm, measured as natural logarithm of sales, has negative significant relation with leverage. *Trade-off theory* predicts that as the firm grows in size the proportion of bankruptcy cost goes down. Therefore smaller firms should have low leverage as compared to their large counterparts. Our results are not consistent with this theory. We find negative significant effect of firm size on leverage ratio which shows that as the firms grow big, their activities become more and more transparent and the information asymmetry between the firm and the investors diminishes leaving less room for mis-pricing of stock offers. This finding is consistent with the hypothesis proposed by Rajan and Zingales (1995). The asset tangibility has positive significant impact on leverage ratio. This is an issue of debt capacity and our result implies that firms with higher proportion of fixed assets in total assets have advantage in raising debt by offering more collateral to the creditors. Growth opportunities are measured by the ratio of market-to-book value of common stocks. Coefficient for this variable is negative significant showing a pecking order behavior of firms; that is, when firms face new projects they would prefer to issue equity in place of debt. The profitability measured by return on equity has significant inverse relation with leverage. Explanation could be higher retention by the profitable firms indicating that as firms become more profitable they build reserves and follow pecking order of utilizing internal resources first before opting for external resources. Moreover, stocks of such firms would be in high demand in the equity market and managers facing new growth opportunities would time capital markets and fetch credit directly by selling equity instead of debt. This negative relation of profitability with leverage is consistent with results of Friend and Lang (1988), De Jong and Veld (2001), and Flannery and Rangan (2006). As far as dividend payout ratio is concerned there is negative yet insignificant relation between dividend payout and leverage ratio. This negative relation could be explained in terms of *Pecking-order theory*. The relation of leverage with non-debt tax shields is positive and it is significant

for most of ownership identities. This result indicates that firms value the tax shield provided by the annual depreciation.

2.6   Conclusion

In this chapter the impact of equity ownership structure has been analyzed on financing choices of a firm. A fixed effects model has been used on panel data of Pakistani listed firms. Ownership has been explored in three dimensions: direct equity holding, ultimate owners' stake, and concentrated ownership. Leverage ratio has been regressed directly on direct equity ownership, whereas the impact of ultimate ownership has been calculated by using interaction terms between the voting rights (at least equal to 10, 25 and 50 percent threshold levels alternatively) and dummy for different types of ultimate owners. Similar approach has been applied in studying the impact of shareholding by the largest shareholder on leverage ratio.

After controlling for factors like firm size, asset specificity, market-to-book ratio, return on equity, firm risk, dividend payout ratio, and non-debt tax shields the study finds that ownership by insiders and associated firms have negative impact on leverage ratio. In contrast to that, financial institutions' shareholding is positively related to debt ratio. These findings show that shareholdings by insiders substitute role of debt in controlling the agency cost between the shareholders and managers. There might be private benefits of control for the insiders and they might be avoiding bankruptcy risk of debt. Likewise, associated firms' shareholding seems to substitute the financing requirements of a firm and those institutions appear to value control considerably. On the other hand, in the face of restrictions to participate in the day-to-day affairs of non-financial firm, financial institutions through their equity ownership exerts positive impact on leverage ratio. This shows that financial institutions promote the firms in which they hold ownership stake to issue more debt and follow the discipline imposed by debt covenants. This positive relationship between equity holding by financial institutions and debt ratio might reduce information asymmetries between the firms and financial institutions due to double

relation between the two: lender-borrower relationship, and investor-investee relationship.

Ownership concentration is measured as shareholding by the single largest shareholder and alternatively by equity holding of top three (five) shareholder. The study finds that there is negative relation between ownership concentration and leverage ratio. On the one hand this points in the direction that big block-holders substitute for the disciplinary role of debt; and on the other hand, they seem to value control over the firm and that they are enjoying private benefits of control, possibly at the cost of minority shareholders.

As regards shareholding by ultimate owners, the interaction term for family ownership (for both narrow and broad definitions of family) is positive at all threshold levels of control rights. This finding highlights three factors: one, family firms use debt as signaling device and their willingness to follow the discipline on free cash flows of the firm imposed by debt covenants. Furthermore, it shows that families avoid sharing control of their firms with (prospective) equity holders and instead of issuing equity they go to the debt market for meeting financing needs of their firms. They use debt to deter takeovers.

An interesting finding of this study is that insiders as direct shareholder refrain from issuing debt whereas ultimate ownership of a family favors debt over equity. Such results have implications for corporate governance in Pakistan.

Chapter 3

Ownership Structure and Investment Efficiency

3.1   Theoretical Background and Related Literature

Investment is inherently linked to output growth both at macroeconomic as well as firm level; and the stronger this relation is the better it would be for the national and firm growth, respectively. Many research studies conducted in different fields including, but not limited to, development economics, corporate finance and industrial organization provide evidence in support of the role of investment in spurring national growth as well as firm value. At macro level this argument is supported by empirical studies conducted by Auerbach and Summers (1979), Barro (1991), and Levine and Renelt (1992); and at firm level studies by Stenbacka and Tombak (2002). However, mere focus on the 'level' of investment and the rules applied to investment decision making leave a void in performance measurement models. Other factors which play their role in deciding investment efficiency include operating environment – a set of financial, legal and structural constraints (for instance, negative real returns, adverse currency exchange regime, low income-saving trap, weak contract enforcement apparatus, and market imperfections, etc.). In this regard literature on corporate financial economics and corporate governance has tried to explore effects of firm specific factors and market micro-structure on corporate investment performance. Such factors include accounting variables, governance indicators and ownership structure.

Pioneering work of Berle and Means (1932) on 'separation of ownership and control' started the debate on principal-agent problem. Subsequent studies widened the scope of research towards ownership structure, capital structure and overall firm performance. The main theme of those studies is how to control different types of agency problems – one between the managers and shareholders; two, between controlling shareholders and

minority shareholders; and three, between debt holders and shareholders. These studies highlight the difference between incentives and capacities of different types of shareholders, which, subsequently, have bearings on investment and overall firm performance. The complexity of analyses grows when heterogeneity of owners, concentration of shareholding and types of direct as well as ultimate owners are considered.

The issue of finding an appropriate measure of firm performance has been widely debated[48]. There are studies which raised questions about the nature of firm performance indicators and their sensitivity towards ownership structure or other firm related variables (Randøy, Thomsen and Oxelheim, 2006; Bjuggren et al., 2007; and John, Johanna and Daniel, 2009). Different performance measures have been used in different studies, and they can be categorized into accounting measures and economic measures. Accounting measures, taken from the financial statements, include operating profit, earnings before tax and interest payments, return on assets, return on capital employed, return on equity, return on investment, etc. On the other hand, economic measures of performance include economic value added, risk-adjusted rate of return on capital, risk adjusted rate of return on assets, and (average) Tobin's Q, etc. An addition to the list of economic measures is 'marginal Tobin's Q', which links the return on investment to cost of capital.

Using marginal Tobin's Q, Bjuggren et al. (2007) studied the impact of family ownership on investment performance for 110 Swedish listed firms with dual class shares. They find that family ownership has positive impact on firm performance; however, they argue, excess vote over cash flow rights affect marginal Tobin's q negatively. Their findings imply that family control provides for adequate monitoring the management and approving those projects only which have positive net present value. Further, they prescribe that control enhancing mechanism, like dual class shares, should be checked.

Studying international data Gugler, Mueller and Yurtoglu (2008) has investigated effect of insider ownership and ownership concentration on investment performance of 3,290

---

[48] For further details see Dalton, Daily, Ellstrand, and Johnson (1998); Hermalin and Weisbach, (2003).

firms, both from English-origin and Continental European countries. They have used percentage voting rights as a proxy for entrenchment effect and value of shareholding as a proxy for wealth effect of insider ownership. With regard to insider ownership, their main findings are that managerial entrenchment affects investment performance negatively and wealth effect of insider ownership affects investment positively. They also find that institutional ownership has positive impact on investment performance in U.S., and shareholding by financial institutions affect the investment performance negatively in both Anglo-Saxon countries and in Europe.

Besides exploring determinants of board structure, John et al. (2009) have investigated the impact of board related features on investment performance measured by marginal Tobin's Q using panel data of 188 Swedish listed firms. They find that features like gender diversity on the board, directorship of CEO and size of the board have negative effect on investment performance. However, they argue, when all these features are simultaneously included in the regression equation the effects of gender diversity and CEO's directorship become statistically insignificant.

Pakistan, which was British colony during the nineteenth and the first half of the twentieth century, has inherited the Anglo-Saxon legal system, especially in the fields of business and commerce. Over the last sixty years or so the industrial-legal environment has not shown pro-growth efficiency when compared to that of other countries with similar age and history in terms of winning freedom from British or other colonial powers. Pakistani corporate sector seems to suffer from flaws in governance structure; it lacks efficient supervisory environment and suffers from haphazard policy formulation. Immediate outcome of these failures is dominance of lopsided ownership structure of major corporations as described in section 2.3 in terms of high concentration and strong family control over corporate resources.

This study is motivated to explore the relationship between investment and firm value and the impact of ownership structure on the investment performance. In order to explore these ideas a novel method as proposed by Mueller and Reardon (1993), refined by

Gugler and Yurtoglu (2003), and applied in studies on Swedish firms by Bjuggren et al., (2007) and John et al. (2009), has been followed in this study. This method has advantages of being elegantly simple, easy to interpret, and controls for possible endogeneity, etc.

The objective of this study is to explore how investment decision making is influenced by different types of (a) *direct* owners like insiders, associated firms, financial institutions, foreigners and government; (b) *ultimate* owners like family, state and foreigner; and (c) ownership *concentrations* measured by shareholdings of the single largest shareholder and shareholdings by top three (five) shareholders.

In this regard it is generally hypothesized that ownership and investment performance are non-linearly related. To have an insight on this issue a model has been estimated for different threshold levels of shareholdings. Keeping in view following provisions of Pakistani corporate law three threshold levels of voting rights (10 percent, 25 percent and 50 percent) have been chosen: one, ten percent or more voting rights in a company would designate the holder as 'promoter' of that company, and that promoter would have to follow certain rules and regulations, which include mandatory disclosure of shareholding to the stock exchange; two, anyone who wishes to acquire more than 10 percent but less than 25 percent voting rights in a listed company shall make public announcement; and three, acquisition of more than 50 percent voting rights in a company entitles the holder with management rights of the company[49]. La Porta et. al. (1999) has used variety of thresholds (10 percent, 20 percent, etc.) to define ultimate control of a family over a firm. Other examples include Claessens et. al. (2002); Faccio and Lang (2002) use 20 percent cut-off; however, they control for 10 percent as well; Bjuggern et. al. (2007) has used 20 percent cut-off to define family firm. Lamba and Stapledon (2001) use 15 percent and 25 percent as cut-off thresholds. Arslan and Karan (2006) take the largest shareholder as the variable of interest.

---

[49] For reference see "Substantial Acquisition of Voting Shares and Takeovers Ordinance, 2002." available at www.secp.gov.pk

3.2 Variables and Hypotheses

Dependent Variable: Growth rate of market value $\left(\dfrac{M_{i,t} - M_{i,t-1}}{M_{i,t-1}} \right)$.

Explanatory Variables: Key explanatory variable is ratio of investment to one period lagged market value $\left(I_t / M_{t-1} \right)$ and other variables are constructed by using interaction term of ownership dummy with ratio of investment to lagged value of market capitalization.

$M_{i,t}$ represents market value of firm of firm **'i'** at the end of period **'t'**. It is calculated as sum of market capitalization of outstanding shares and market value of debt. Market capitalization is calculated by multiplying average market price of common stock (on cut-off date[50]) with total number of outstanding shares. Debt has been proxied by book value of debt as corporate bond market is almost non-existence in developing countries like Pakistan.

I_t *denotes* investment defined as sum of investable funds on the financial statements namely profit 'Π', change in debt ΔD, change in equity ΔE, depreciation (Dep), research and development expenditures (R&D), and advertising expenses (Adv.) minus the leakages from the firms resources namely taxes (Tax) and dividends (Div). The R&D and advertising expenses are not readily available for a big chunk of firms; they have been proxied by taking 1 percent of the costs of sales.

$$I = Π - Tax - Div + Dep. + ΔD + ΔE + R\&D + Adv \qquad (3.1)$$

Both the change in market value of firm ($M_{i,t} - M_{i,t-1}$) and the investment have been scaled by the lagged market value ($M_{i,t-1}$) to get growth rate of market value and investment to ratio of lagged market value of firm, respectively. Finally, for a given threshold of voting rights, effect of different types of owners, direct as well as ultimate

---

[50] Last working day of June for all firms except for sugar industry in which case the cutoff date is the last working day of September as firms are obliged to make their financial statements public at the end of June and September, respectively.

owners, and ownership concentration has been calculated by interacting dummies for different types of owners with ratio of investment to one period lagged market value of firm $\left(I_t \middle/ M_{t-1} \right)$.

Following is the list of hypotheses for this part of study:

Insiders: Shareholding by insiders aligns the interest of managers with that of shareholders (incentive alignment hypothesis) and exerts positive impact on investment performance. This relationship is stable for all thresholds (10 percent, 25 percent and 50 percent) of voting rights by the insiders.

H3.1:   Equity holding by insider (as direct owners and as the largest owner) affects investment performance positively.

Associated firms: Shareholding by associated firms creates a wedge between cash flow rights and control rights. Therefore, it may be argued that as shareholding of associated firms increases the investment moves away from value maximizing principle.

H3.2:   Negative relation holds between shareholding by associated firms and investment performance.

Financial institutions: As referred in section 2.2 of chapter 2, financial institutions, especially banks, are not encouraged to participate in day-to-day activities of non-financial firms of which they are equity holders. Therefore, with small equity stake in a firm, financial institutions do not have strong incentive and capacity to to monitor the management. However, as equity holding of financial institutions goes up, they become dominant shareholders of a firm, they have the incentive to monitor the management but they are barred by regulatory restrictions from interfering in daily affairs of the firm. In such circumstances managers of the firms might become very strong and may pursue goals which do not enhance firm value.

H3.3:   *The impact of shareholding by financial institutions (as direct owners and as the largest owner) on investment performance is non-linear; positive at lower level of ownership stake and negative at higher level of ownership stake.*

Foreigner: It is assumed that foreigners are better equipped in terms of management skills and commitment to make value enhancing project choices.

H3.4: Foreigners (as direct shareholder, as the largest shareholder and as ultimate shareholder) makes investment behavior efficient and value enhancing.

Government: Shareholding by government is marred with lack of monitoring of the management which results in increased agency cost of equity. This makes managers in state owned firms highly entrenched. Moreover, it may be argued that generally the debt holders of state owned corporations are state owned financial institutions; therefore, agency cost of debt would also be higher.

H3.5: Government (as direct shareholder, as the largest shareholder and as ultimate shareholder) affects investment performance negatively.

Family: Ultimate ownership by family ensures adequate monitoring of the managers. In fact, as described in earlier sections, family, which considers its investment as family jewel, tries to protect its control over the firm and exercise monitoring. Moreover, family members sit on the board and participate in the management of the firm. All these factors control agency cost.

H3.6: Ultimate ownership by family is positively related to investment efficiency.

Ownership concentration: Higher concentration of shares in the hands of one or few shareholders increases their incentive to monitor the firm management. This in turn leads to selection of positive net present value projects.

H3.6: Tightly held firms show better investment performance.

3.3 Summary Statistics

Table 3.1: Descriptive Statistics (Firm Specific Variables)

	Mean	**Median**	**St. Dev.**	**Min**	**Max**
M_t	4585.10	938.50	14859	7.80	276612.80
I_t	811.50	120.50	2792.20	-12211.70	49054.50
$\dfrac{M_t - M_{t-1}}{M_{t-1}}$	21.80	11.90	39.00	-69.60	373.90
$\dfrac{I_t}{M_{t-1}}$	25.70	16.20	38.50	-75.30	373.00

In Table 3.1 M_t represents market value of firm in period 't', I_t represents investment a firm undertakes in period 't', $\dfrac{M_t - M_{t-1}}{M_{t-1}}$ represents growth rate of market value, and $\dfrac{I_t}{M_{t-1}}$ is the investment in period 't' scaled by market value in period 't-1'. The table shows that average market value of a firm is 4.59 billion Pakistani rupees (PKR) with median value 938.50 million PKR. Average (median) investment by a firm is 811.50 (120.50) million PKR. The average growth rate of market value of a firm is 22 percent with 12 percent as the median value.

Definitions and summary statistics of ownership and other relevant variables (different types of direct, ultimate and the largest shareholder) are the same as presented in section 2.2 of chapter 2. For full summary statistics of ownership categories, see Table 2.2.

3.4   Methodology

To test the effects of ownership structure on investment performance of Pakistani listed firms the methodology of Gugler and Yurtoglu (2003)[51] has been adopted. The model is rooted in simple criterion of a net present value (NPV) of a project. The model is based on the argument that under certain market related conditions (there is perfect competition in product markets, production function is characterized by constant-returns-to-scale and firms are price takers) marginal return on capital equals average return on capital which is equal to the cost of capital (Hayashi, 1982). However, any violation of above conditions results in a situation where marginal return is not equal to average return and average Tobin's q misestimates investment performance. In that case principle of equating marginal cost of capital with marginal return on capital makes better sense[52].

The *NPV,* which is the difference between cash outflows (investment outlays) and present value of future cash inflows, prescribes the rule that projects with positive *NPV* should be undertaken and others should be discarded. In other words accept projects only if *NPV = PV – I > 0*, where $PV = \sum_{t=1}^{n} CF_t \frac{1}{(1+r)^t}$, and I = investment.

If stock markets are assumed to be fairly efficient then at time 't' an unbiased estimate of the value of a firm should be equal to present value of investments undertaken by the firm. If **'r'** denotes (pseudo) permanent rate of return on investment and **'θ'** is the internal rate of return then following equality may be stipulated:

$$PV_t = \frac{I_t r_t}{\theta_t} = qm_t I_t \tag{3.2}$$

---

[51] Their methodology is based on marginal Tobin's q as developed by Mueller and Reardon (1993).
[52] Gugler and Yurtoglu (2003) give example of comparing investment performance of a monopolist with that of a competitive firm. They argue that with similar (optimal) level of investment, profits on existing stock of assets would be larger for monopolist as compared to profits of rival competitive firm. This implies that average Tobin's q would be bigger for a monopolist as compared to that for a competitive firm.

Gugler and Yurtoglu (2003) define **'qm'** as "the change in the market value of the firm, PV_t, divided by the change in its capital stock (I_t) that caused it". If **'qm'** is equal to one then present value is equal to the investment. This implies that if $NPV > 0$ (**qm** > 1) then managers are passing up the profitable investment opportunities (under investment); and if the $NPV < 0$ (**qm** < 1) then, from shareholders' point of view, managers have over invested in projects (managerial discretion).

In this setting, market value of firm would increase (decrease) if present value of its investments is greater (lesser) than depreciation of assets accumulated from previous investments.

$$M_t - M_{t-1} = PV_t - \delta.M_{t-1} + \mu \qquad (3.3)$$

where **'δ'** is the depreciation rate, **'M_t'** is current market value of firm, and **'M_{t-1}'** is the total accumulated assets, and **'μ'** is the error committed by the market in valuing the firm and this has usual properties of having normal distribution with zero mean. After replacing PV_t in equation (3.3) by **'I_t'** from equation (3.2) and rearranging, we get following equation:

$$\frac{M_t - M_{t-1}}{M_{t-1}} = -\delta + qm_t \frac{I_t}{M_{t-1}} + \frac{\mu_t}{M_{t-1}} \qquad (3.4)$$

For estimation purposes different specifications of above model have been used. Following specification works as benchmark model and estimates investment performance of all the listed firms **'i'** in our data set:

$$\frac{M_{t,i} - M_{t-1,i}}{M_{t-1,i}} = -\alpha_i + \beta_1 \frac{I_{t,i}}{M_{t-1,i}} + \frac{\mu_{t,i}}{M_{t-1,i}} \qquad (3.5)$$

For estimating the effect of direct (ultimate) shareholdings by different types of owners, interaction terms of $\left(\dfrac{I_t}{M_{t-1}} \right)$ and dummy for owner type 'j' have been included as following:

$$\frac{M_{t,i} - M_{t-1,i}}{M_{t-1,i}} = -\alpha_i + \beta_2 \frac{I_{t,i}}{M_{t-1,i}} + \beta_3 \left(\frac{I_{t,i}}{M_{t-1,i}} \right) * Dummy_j^k + \frac{\mu_{t,i}}{M_{t-1,i}} \qquad (3.6)$$

where 'j' (in case of direct ownership) represents types of direct owners and (in case of ultimate ownership) represents type of ultimate owner; 'k' represent threshold level (in our model there are three threshold levels of voting rights, that is, k = 10 percent or 25 percent or 50 percent); and $Dummy_j^k$ is binary variable which takes value 1 when shareholding by owner type 'j' is at least equal to the threshold level 'k', and 0 otherwise. The coefficient 'β_3' of interaction term calculates difference in investment performance for type of direct (ultimate) owner 'j' vis-à-vis when the rest.

Similarly, following equation estimates effects of ownership *concentration* on investment performance.

$$\frac{M_{t,i} - M_{t-1,i}}{M_{t-1,i}} = -\alpha_i + \beta_4 \frac{I_{t,i}}{M_{t-1,i}} + \beta_5 \left(\frac{I_{t,i}}{M_{t-1,i}} \right) * Dummy_s^{k,c} + \frac{\mu_{t,i}}{M_{t-1,i}} \qquad (3.7)$$

In above equation 'c' represents measure of ownership concentration – measured alternatively by shareholding of the single largest shareholder or sum of shareholding by top three shareholders, or sum of shareholding by top five shareholders (for details section 2.4 of chapter 2); 's' is the type of the single largest owner (insiders, associated firms, financial institution, foreigner, and government) and in case of shareholding by top three or five shareholders the subscript 's' drops out. Lastly, dummy variable can be explained with the help of an example: let 'c' represents the single largest owner, 'k' stands for 25 percent threshold level of voting rights and s represents 'financial

institution' then $Dummy^{k,c}_s$ would be equal to one when the largest owner is a financial institution with at least 25 percent equity stake in the firm, and 0 otherwise. Therefore, coefficient 'β_5' would calculate difference in investment performance for ownership by financial institution as the largest owner for given threshold level of voting rights vis-à-vis when the ownership is different for all other firms.

3.4.1 Model Specification and Other Tests

Above equations can be estimated using different regression models namely pooled-ordinary least squares (OLS) model, fixed effects model, or random effect model. However, model selection is done with the help of tests like 'F' (Chow) test which compares efficiency of OLS pooled data model to the fixed effects model, Breusch-Pagan Lagrange Multiplier test tells if firm-specific intercepts are different from each other (comparing random effects model with OLS pooled data model), and Hausman specification test is applied to compare fixed effects with random effects model. The specification tests results (reported in the appendix A3.2) show that firms have heterogeneous characteristics and that the fixed effects model is the most appropriate one.

Next, in order to test for first-order autocorrelation in the residuals Durbin-Watson test statistic for the fixed effects model with firm-specific time trends has been calculated[53]. D-W test statistic for panel data is 2.056 (which is almost equals to 2) showing that there is no first-order autocorrelation in the residuals and as such there is no need to apply dynamic panel analyses. In order to test for group-wise heteroskedasticity in fixed effect regression model a modified version of Wald test[54] has been applied.

---

[53] Bhargava, Franzini and Narendranathan (1982) modified the Durbin-Watson test for first order autocorrelation in residuals for the balanced panel data.
[54] Greene (2000). The stata command for test is xttest3.

3.5 Empirical Results:

Table 3.3 shows investment efficiency according to the base model as set in equation (3.5). This model calculates marginal 'q' directly by regressing 'growth rate of market value' on 'ratio of investment to one period lagged market value'. The estimate of marginal 'q' is 0.80 which implies that managers are entrenched; they are using their discretion and over-invest in projects. In terms of *NPV* rule, management of an average firm listed on the KSE is not able to enhance firm value adequately to the benefit of shareholders.

Table 3.2: Investment performance (Base Model)

$$\frac{M_{t,i} - M_{t-1,i}}{M_{t-1,i}} = -\alpha_i + \beta_1 \frac{I_{t,i}}{M_{t-1,i}} + \frac{\mu_{t,i}}{M_{t-1,i}}$$

'Growth rate of market value' is dependent variable and 'ratio of investment to lagged market value' is explanatory variable. The estimates are based on fixed effect model.

$\dfrac{I_{t,i}}{M_{t-1,i}}$	Constant	Obs.	R^2	Firms	F-value	Within
0.800***	1.327	1527	0.55	306	1493.57	1.613
(38.65)	(1.57)				(0.00)	(0.00)

t-stat in parenthesis, *** significant at 10%; ** at 5%; * at 1% levels.

In the following sections results have been presented for different types of direct and ultimate owners, and ownership concentrations, each tested for three different levels of control thresholds (10, 25 and 50 percent). However, results for threshold level of 25 percent of voting rights are mainly discussed in the following section.

3.5.1 Direct Ownership and Investment Performance

As discussed earlier, insiders, associated firms, group, financial institutions, foreigners and the state are the main types of direct owners. Table 3.3 presents results in this regard.

Insiders: In this study it has been tested if control rights of insiders enhance investment efficiency, which would, in turn, contribute towards value of the firm. Table 3.3 (models 1, 2 and 3) shows that shareholding by insiders (managers, directors and their family members) affects investment performance positively, for all threshold levels of voting rights. With insiders' shareholding at least 25 percent, the coefficient of interaction term is statistically significant and the estimated marginal 'q' is 0.83 as compared to 0.76 if the shareholding of insiders is below 25 percent. These results are consistent with hypothesis (H3.1) and they are also consistent with the findings of Bjuggren et al. (2008) for Swedish listed firms. It may be argued that shareholding by insiders reduce agency cost by aligning interests of the managers with the shareholders. As the relationship is consistently positive for all threshold levels of voting rights, it shows that incentive alignment dominates managerial entrenchment.

Associated Firms: Table 3.3 (models 4, 5 and 6) show that effect of shareholding by associated firms is negative and statistically significant for 50 percent level of voting rights. The coefficient of the interaction term is -0.265, which implies that estimated marginal 'q' is 0.56 as compared to 0.83 if shareholding of insiders is below 50 percent. This shows that at higher levels of shareholdings by associated firms investment decision making fails to enhance market value of firm. Possible reason for this negative impact of associated firms' shareholding on investment performance is that as shareholdings by associated companies rise they influence management to pass up profitable projects. For 10 and 25 percent threshold levels of voting rights coefficients are statistically insignificant.

Group is a voting block representing the sum of the voting rights of insiders and associated firms. Table 3.3 (models 7, and 8) show that marginal 'q' is 0.82 (0.82) when shareholding of group is at least 25 (10) percent as compared to 0.68 (0.65) when the group shareholding is less than 25 (10) percent. This considerable contribution supports the hypothesis that group shareholding affects investment performance positively. However, when ownership of the group rises to 50 percent or more (model 9 of Table 3.3) the impact of group shareholding becomes statistically insignificant.

Financial institutions' shareholding appears to have non-linear relation with investment performance. Table 3.4 (models 10, 11 and 12) shows that ownership by financial institutions has positive relation with investment performance at 10 percent threshold level; however, it changes direction from positive to negative at 25 percent threshold level of voting rights. When voting rights are 10 percent or above, the estimated marginal 'q' is 0.86 as compared to 0.75 if the shareholding of financial institutions is below 10 percent voting rights. When shareholding of financial institutions is more than 25 percent marginal 'q' is 0.65 as compared to 0.80 when the ownership stake of financial institution is less than 25 percent. The coefficient of interaction term at 50 percent threshold level, however, is statistically insignificant.

One possible explanation for change in positive effect of ownership stake by financial firms (for 10 percent or more voting rights) into negative effect (for 25 percent or more voting rights) is imposition of regulatory restrictions on their participation in firm affairs. It may be argued that for 10 percent threshold of voting rights of financial institutions, other equity holders would have dominant control in the firm and they do efficient investment decisions by effectively monitoring the management. However, when financial firms acquire equity stake equal to or more than 25 percent they become one of the dominant shareholders yet they are not able to monitor the managers effectively. This lack of monitoring makes the management entrenched which renders the investment inefficient.

Foreign shareholding: Table 3.4 (models 13, 14 and 15) shows that foreign shareholding is positively attached to investment performance at 10 percent and 25 percent levels of ownership; however, the coefficients are statistically insignificant. At 50 percent or more ownership stake by foreigners, the effect on investment performance is negative yet again it is statistically insignificant.

Government shareholding: In accordance with popular belief, ownership stake by the government has negative effect on the investment performance of the firms. Table 3.4

(model 16, 17 and 18) shows that the coefficient of the interaction term with regard to state ownership is negative; however, it is statistically significant at ownership 25 percent threshold only. The estimated marginal 'q' at 25 percent is 0.49 as compared to 0.80 when the ownership stake of government is less than 25 percent. For 10 and 50 percent threshold levels of voting rights the coefficient is statistically insignificant

Table 3.3: Direct ownership and investment performance

$$\frac{M_{t,i} - M_{t-1,i}}{M_{t-1,i}} = -\alpha_i + \beta_2 \frac{I_{t,i}}{M_{t-1,i}} + \beta_3 \left(\frac{I_{t,i}}{M_{t-1,i}} \right) * Dummy_j^k + \frac{\mu_{t,i}}{M_{t-1,i}}$$

Table 3.3 reports results of regression of growth rate of market value (dependent variable) on ratio of investment to lagged market value, and interaction term of this ratio with dummy for type 'j' of direct shareholder (insiders, associated firms (AF), group (Insider + Associated firms), financial institutions (FI), foreigners, and state). 'K' represents threshold level of voting rights. Marginal q is calculated by adding β_2 and β_3.

	Insiders			Associated firms (AF)			Group		
Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Threshold	10	25	50	10	25	50	10	25	50
$\frac{I_t}{M_{t-1}}$	0.727***	0.760***	0.765***	0.789***	0.803***	0.826***	0.653***	0.680***	0.797***
	(19.03)	(23.66)	(28.25)	(29.07)	(33.70)	(38.23)	(10.02)	(12.95)	(25.21)
Insiders	0.101**	0.067*	0.078*						
	(2.25)	(1.65)	(1.95)						
AF				0.023	-0.014	-0.265***			
				(0.58)	(-0.30)	(-3.99)			
Group							0.162**	0.140**	0.004
							(2.37)	(2.48)	(0.09)
Constant	1.481*	1.422*	1.572*	1.316	1.335	1.412*	1.390*	1.418*	1.333
	(1.75)	(1.68)	(1.84)	(1.56)	(1.58)	(1.68)	(1.65)	(1.68)	(1.57)
Obs.	1527	1527	1527	1527	1527	1527	1527	1527	1527
R^2	0.55	0.55	0.55	0.55	0.55	0.56	0.55	0.55	0.55
F-value	751.80	749.11	750.4	746.55	746.24	763.88	752.43	753	746.18
Within	1.635	1.622	1.629	1.613	1.612	1.654	1.636	1.64	1.596

(continued)

Table 3.3 – Continued.

	Financial institutions			Foreigner			State		
Model	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Threshold	**10**	**25**	**50**	**10**	**25**	**50**	**10**	**25**	**50**
$\dfrac{I_t}{M_{t-1}}$	0.748***	0.819***	0.801***	0.793***	0.797***	0.806***	0.803***	0.803***	0.802***
	(26.9)	(37.35)	(38.63)	(34.93)	(35.69)	(37.35)	(38.57)	(38.69)	(38.60)
FI	0.107***	-0.150***	-0.232						
	(2.76)	(-2.61)	(-0.93)						
Foreigner				0.037	0.016	-0.083			
				(0.69)	(0.27)	(-1.10)			
State							-0.238	-0.376*	-0.314
							(-1.46)	(-1.77)	(-1.26)
Constant	1.183	1.557*	1.337	1.286	1.322	1.319	1.444*	1.466*	1.379
	(1.40)	(1.84)	(1.58)	(1.52)	(1.56)	(1.56)	(1.70)	(1.73)	(1.63)
Obs.	1527	1527	1527	1527	1527	1527	1527	1527	1527
R²	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
F-value	754.64	753.72	747.13	746.71	746.23	747.51	748.53	749.63	747.95
Within	1.583	1.64	1.614	1.593	1.585	1.602	1.621	1.625	1.618

t-stat in parenthesis, *** significant at 10%; ** at 5%; * at 1% levels.

3.5.2 Ownership Concentration and Investment Performance

Ownership concentration is measured alternatively by shareholdings of the single largest owner, and sum of shareholdings of top three (five) shareholders. Furthermore, effect of shareholdings by different types of the single largest shareholder is also estimated. Table 3.4 presents results in this regard.

Table 3.4 (model 1, 2 and 3) shows that effects of shareholdings by the single largest owner on investment performance in nonlinear. It is positive for threshold level of 10 and 25 percent voting rights and negative for 50 percent voting rights. The coefficient of interaction term is significant at 10 percent threshold and marginally significant at 50 percent threshold level. It may be argued that at lower level of voting rights there is alignment of interest of the single largest owner and interest of the management; however, as the voting rights of the single largest owner are equal to more than 50 percent of voting rights entrenchment effect dominates incentive alignment effect. Marginal 'q' is 0.81 (0.72) when the largest shareholder has 10 (50) percent or more voting rights as compare to 0.53 (0.81) when voting rights of the largest owner is less than 10 (50) percent.

Table 3.4 (models 4 to 18) presents effects of different types of the largest single shareholder on investment performance. Model 4, 5 and 6 of Table 3.5 show that 'insider' as the largest shareholder affects investment performance positively; however, this effect is statistically significant at 25 percent threshold level of voting rights only. This shows incentive alignment of the largest owner with that of management. Marginal 'q' in this case is 0.89 when shareholding of 'insider' is equal to or more than 25 percent of the voting rights, as compared to 0.78 when shareholding of 'insider' is less than 25 percent of voting rights.

Table 3.4 (models 7, 8 and 9) shows that equity ownership of associated firms as the single largest owner has positive effects on investment performance at 10 percent threshold level and negative impact on investment performance at 25 and 50 percent threshold levels. However, it is

significant at 50 percent threshold only. Estimate of marginal 'q' at 50 percent threshold level is 0.61 as compare to 0.81 when voting rights of associated firm is less than 50 percent.

Table 3.4 (model 10, 11 and 12) shows that shareholdings by financial institution as the single largest shareholder affect investment performance negatively at lower thresholds (10 and 25) and positively at higher (50) threshold. However, it is statistically significant when voting rights of financial institution as the single largest owner are equal to or more than 50 percent voting rights.

Table 3.4 (model 13, 14 and 15) shows that shareholdings by foreigner as the single largest shareholder affect investment performance positively at all thresholds levels (10, 25 and 50); however, it is statistically significant for 10 and 25 percent thresholds of voting rights. Estimated marginal 'q' is 0.98 when voting rights of foreigner as the single largest shareholder are equal to more than 10 percent as compared to 0.78 when they are less than 10 percent. Likewise, marginal 'q' is 0.93 when foreigner is the single largest shareholder are equal to more than 25 percent as compared to 0.79 when they are less than 25 percent. Coefficient for 50 percent threshold level of voting rights is statistically insignificant.

Models 16, 17 and 18 of Table 3.4 show that state as the largest shareholder affect investment performance negatively and the coefficient of interaction term is statistically significant for all threshold levels. Estimated marginal 'q' is 0.81 (0.81) (0.81) when voting rights of the government are equal to more than 10 (25) (50) percent, as compared to 0.48 (0.48) (0.50) when voting rights of the government as the largest owner are less than 10 (25) (50) percent. Therefore, it may be argued that, in terms of market value of firm, government ownership influences investment decision making negatively and destroys firm value.

Result regarding shareholdings by top three (five) shareholders have been reported in the appendix A3.3, which shows that the impact is nonlinear and the coefficients of interaction terms are statistically insignificant except for shareholdings by top five shareholders for 25 percent threshold of voting rights.

Table 3.4: Ownership concentration and investment performance

$$\frac{M_{t,i} - M_{t-1,i}}{M_{t-1,i}} = -\alpha_i + \beta_4 \frac{I_{t,i}}{M_{t-1,i}} + \beta_5 \left(\frac{I_{t,i}}{M_{t-1,i}} \right) * Dummy_s^{k,c} + \frac{\mu_{t,i}}{M_{t-1,i}}$$

(1) This table reports results of regression of growth rate of market value (dependent variable) on ratio of investment to lagged market value, and interaction term of this ratio with dummy of the largest owner (and type of the largest owner). Fixed effect model has been used. (2) Abbreviations: 'K' represents threshold level of voting rights, 'C' indicates concentration of shareholding, and 'S' represents type of the largest owner (T1 = shareholding of the single largest owner, T1_Insider = insider, T1_AF. = associated firm, T1_FI = financial institutions, T1_for. = foreigner, and T1_state = government).

	T1			T1_Insider			T1_AF		
Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Threshold	**10**	**25**	**50**	**10**	**25**	**50**	**10**	**25**	**50**
$\dfrac{I_t}{M_{t-1}}$	0.527***	0.796***	0.814***	0.790***	0.781***	0.797***	0.785***	0.811***	0.808***
	(6.09)	(28.61)	(36.36)	(29.35)	(34.69)	(38.07)	(31.30)	(35.83)	(38.28)
T1	0.287***	0.008	-0.090						
	(3.24)	(0.21)	(-1.63)						
T1_Insider				0.022	0.105**	0.098			
				(0.54)	(2.12)	(0.85)			
T1_AF							0.046	-0.065	-0.202**
							(1.05)	(-1.23)	(-2.01)
Constant	1.472*	1.332	1.355	1.376	1.484*	1.333	1.348	1.306	1.377
	(1.74)	(1.57)	(1.60)	(1.62)	(1.75)	(1.58)	(1.59)	(1.54)	(1.63)
Obs.	1527	1527	1527	1527	1527	1527	1527	1527	1527
R²	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Firms	306	306	306	306	306	306	306	306	306
F-value	757.86	746.22	749.12	746.50	751.19	746.97	747.39	747.84	750.69
Within	1.636	1.563	1.623	1.602	1.598	1.608	1.616	1.618	1.623

(Continued)

Table 3.4 – Continued.

Model	T1_FI			T1_For.			T1_State		
	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Threshold	**10**	**25**	**50**	**10**	**25**	**50**	**10**	**25**	**50**
$\dfrac{I_t}{M_{t-1}}$	0.804***	0.802***	0.800***	0.781***	0.790***	0.796***	0.813***	0.813***	0.812***
	(37.55)	(38.35)	(38.68)	(36.02)	(36.97)	(37.60)	(38.63)	(38.65)	(38.59)
T1_FI	-0.065	-0.105	0.962*						
	(-0.86)	(-0.85)	(1.66)						
T1_For.				0.197***	0.136*	0.069			
				(2.80)	(1.72)	(0.71)			
T1_State							-0.331***	-0.338***	-0.315***
							(-3.12)	(-3.16)	(-2.91)
Constant	1.396	1.355	1.282	1.085	1.181	1.300	1.283	1.278	1.225
	(1.64)	(1.60)	(1.52)	(1.28)	(1.39)	(1.53)	(1.52)	(1.52)	(1.45)
Obs.	1527	1527	1527	1527	1527	1527	1527	1527	1527
R²	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Firms	306	306	306	306	306	306	306	306	306
F-value	746.99	746.98	749.25	754.90	749.47	746.73	756.99	757.27	755.58
Within	1.615	1.615	1.623	1.564	1.575	1.602	1.652	1.653	1.646

t-stat in parenthesis, *** significant at 10%; ** at 5%; * at 1% levels.

3.5.3 Ultimate Ownership and Investment Performance

Table 3.5 presents results regarding the impact of shareholding by different types of ultimate owners on investment performance of a firm. Models 1, 2 and 3 of Table 3.6 show that shareholding by the ultimate owner (without mention of the identity of ultimate owner) affects investment performance positively for 10 percent and 25 percent thresholds of voting rights and negatively for 50 percent threshold of voting rights. However, the coefficient of interaction term is significant for 10 and 50 percent thresholds only.

Models 4, 5 and 6 of table 3.5 show that shareholding by **family** as ultimate owner has positive bearings on the investment performance. Estimated marginal 'q' is 0.83 (0.83) (0.83) when shareholding is equal to or more than 10 (25) (50) percent shareholding as compared to 0.75 (0.75) (0.77) when shareholding is less than 10 (25) (50) percent voting rights. These results imply that family as ultimate owner remains vigilant of the management and contributes positively in the investment decision making. When extended definition of family is used then the effect of shareholding by family (extd.) still remains positive, however the coefficient of interaction term is significant for 25 percent threshold level only.

Table 3.5 (models 7, 8 and 9) shows that **state** as ultimate shareholder exerts significant negative effects on investment efficiency as it does as a direct shareholder and as the largest owner. The estimated marginal 'q' is 0.50 (0.50) (0.46) when shareholding by the state as ultimate owner is equal to or more than 10 (25) (50) percent, as compared to 0.81 (0.81) (0.81) when shareholding of the state as ultimate owner is less than 10 (25) (50) percent. These findings show that the state as ultimate controlling shareholder damages investment performance.

Table 3.5 (models 10, 11 and 12) shows that legal person as ultimate shareholder affects investment performance negatively at all threshold levels of voting rights. However, the effect the statistically significant at 50 percent threshold of voting rights. The estimated marginal 'q' is

0.58 when shareholding by legal person is equal to or more than 50 percent, as compared to 0.82 when shareholding of the legal person is less than 50 percent.

Table 3.5 (models 13, 14 and 15) show that **foreigners** as ultimate shareholder have positive effect on investment efficiency. Estimated marginal 'q' is 0.93 (0.93) (0.90) when shareholding by foreigner as ultimate owner is equal to or more than 10 (25) (50) percent, as compared to 0.78 (0.78) (0.79) when shareholding of foreigner as ultimate owner is less than 10 (25) (50) percent. This implies that foreigners as controlling shareholders monitor managers adequately and contribute in investment decision making in such a manner that shareholder value is increased.

Table 3.5: Ultimate ownership and investment performance

$$\frac{M_{t,i} - M_{t-1,i}}{M_{t-1,i}} = -\alpha_i + \beta_2 \frac{I_{t,i}}{M_{t-1,i}} + \beta_3 \left(\frac{I_{t,i}}{M_{t-1,i}} \right) * Dummy_j^k + \frac{\mu_{t,i}}{M_{t-1,i}}$$

(1) This table reports results of regression of growth rate of market value (dependent variable) on ratio of investment to lagged market value, and interaction term of this ratio with dummy for different types of ultimate owners. Fixed effect model has been used. (2) Abbreviations: UO = Ultimate owner, UO_Family = shareholding by family as ultimate owner, UO_State. = shareholding by government as ultimate owner, UO_LP = shareholding by legal person ultimate owner, UO_for. = shareholding by foreigner as ultimate owner, UO_FamE = shareholding by family (extended definition) as ultimate owner, and obs. = observations.

Model	Ultimate owner (UO)			UO_Family			UO_State		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Threshold	10	25	50	10	25	50	10	25	50
$\dfrac{I_t}{M_{t-1}}$	0.407**	0.448***	0.824***	0.747***	0.745***	0.769***	0.814***	0.814***	0.813***
	(2.50)	(4.07)	(23.27)	(22.28)	(22.50)	(27.05)	(38.56)	(38.58)	(38.70)
UO	0.399**	0.362***	-0.036						
	(2.43)	(3.26)	(-0.85)						
UO_Family				0.085**	0.088**	0.064			
				(2.00)	(2.10)	(1.59)			
UO_State							-0.311***	-0.316***	-0.351***
							(-3.16)	(-3.19)	(-3.33)
Constant	1.304	1.336	1.269	1.370	1.378	1.445*	1.297	1.293	1.247
	-1.54	-1.59	-1.49	(1.62)	(1.63)	(1.70)	(1.54)	(1.54)	(1.48)
Obs.	1527	1527	1527	1527	1527	1527	1527	1527	1527
R^2	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Firms	306	306	306	306	306	306	306	306	306
F-value	752.72	758	746.97	750.61	751.05	748.98	757.24	757.50	758.51
Within	1.626	1.627	1.61	1.626	1.629	1.613	1.656	1.657	1.657

(Continued)

Table 3.5 – Continued.

	UO_LP			UO_Foreigner			UO_FamE		
Model	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Threshold	**10**	**25**	**50**	**10**	**25**	**50**	**10**	**25**	**50**
$\dfrac{I_t}{M_{t-1}}$	0.812***	0.808***	0.816***	0.783***	0.783***	0.793***	0.748***	0.733***	0.797***
	(35.49)	(35.41)	(38.22)	(35.76)	(35.78)	(37.12)	(16.11)	(16.28)	(26.21)
UO_LP	-0.066	-0.048	-0.233***						
	(-1.22)	(-0.89)	(-2.92)						
UO_For.				0.148**	0.153**	0.103			
				(2.24)	(2.31)	(1.21)			
UO_FamE							0.065	0.084*	0.005
							(1.25)	(1.68)	(0.13)
Constant	1.307	1.310	1.322	1.135	1.118	1.243	1.380	1.406*	1.337
	(1.54)	(1.55)	(1.57)	(1.34)	(1.32)	(1.46)	(1.63)	(1.66)	(1.57)
Obs.	1527	1527	1527	1527	1527	1527	1527	1527	1527
R^2	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Firms	306	306	306	306	306	306	306	306	306
F-value	747.84	747.05	755.65	751.75	752.12	747.81	747.91	749.31	746.19
Within	1.611	1.609	1.623	1.582	1.582	1.561	1.596	1.609	1.579

t-stat in parenthesis, *** significant at 10%; ** at 5%; * at 1% levels.

3.6   Conclusion

Marginal Tobin's q evaluates investment performance by comparing cost of capital with return on investment. Employing marginal q as a measure of investment performance this study finds that return on investment for the average Pakistani firm is less than its cost of capital. The study is primarily focused on estimating the impact of (a) shareholding by different types of direct owners – insiders, associated firms, group, financial institutions, foreigners and government; (b) shareholding by different types of ultimate owners – family, state, and foreigner; and (c) concentrated ownership, on investment performance of Pakistani listed firms. In order to account for non-linearity in the relationship between ownership structure and investment performance, all the hypotheses have been tested for three different levels of ownership stake; 10 percent or more, 25 percent or more and 50 percent or more. Using model in the tradition of Gugler and Yurtoglu (2003) this study reports marginal q, which has been calculated using the fixed effects model.

The main findings of this study largely lend support to the theoretical predictions. Shareholdings by different types of direct owners affect investment performance differently. Ownership by 'insiders' has positive impact on the investment performance. This implies that as ownership stake of managers, directors and their family members goes up the interest of the shareholders get aligned with the interest of managers. This results in efficient investment decisions about capital stock accumulation. The associated firms have negative impact on firm performance which implies that related companies engage the management of the firm in value reducing investment projects; however, these factors are significant at higher ownership stake (50 percent or more control rights) only. Group ownership, which is sum of shareholding by insiders and associated firms, cast positive net impact on investment performance for low and medium levels of group ownership; however, for higher ownership levels the negative effect of associated firms' shareholdings dominate the positive impact of insiders' shareholdings. The impact of shareholding by financial institutions at low levels is positive and turns negative as it rises to medium and high levels of voting rights. This may be attributed to the restrictions imposed on financial institutions in participating in the affairs of the firms. Government

81

shareholding renders the investment decision making inefficient whereas foreigners exert positive impact on investment performance.

Ownership concentration, proxied by the shareholdings of the largest owner, affects investment performance. The relationship between shareholding and investment performance is non-linear; it is positive for 10 and 25 percent thresholds and negative for 50 percent threshold levels of voting rights. This implies an incentive alignment effect of moderate shareholding by the single largest owner is dominated by the entrenchment effect as that largest owner becomes holder of absolute majority of controlling rights. Further, analyses of identities of the largest owner reveal that insider and foreigner as the largest owners have positive impact on investment performance, whereas the state as the largest owner affects investment performance negatively.

As regards ultimate ownership, shareholding by family and foreigner as ultimate owners affect investment performance positively whereas the state as ultimate shareholder has negative impact on firm value in terms of marginal q. These findings imply that family and foreigner participate effectively in investment decision making, whereas state control, which is punctuated with entrenched management, results in return on investment which is less than the cost of funds used to finance that investment.

Given that adequate information is available, the possible lines of further inquiry may incorporate details on other corporate governance aspects like board structure and performance, level and adequacy of financial disclosure, and quantification of the possible wedge between cash-flow and control rights.

Chapter 4

Ownership Structure and Firm Performance

4.1 Theoretical Background and Related Literature

Jensen and Meckling define agency relationship as a "contract", "which involves delegating some decision making authority to agent" (1976, p 310). Later on Jensen purports "Corporate managers are the agents of shareholders, a relationship fraught with conflicting interests. Agency theory, the analysis of such conflicts, is now a major part of the economics literature" (1986, p 323). In short, agency theory deals with the problem that principals (shareholders) and agents (managers) share same goal while reconciling their tolerance for risk. However, as soon as shareholders delegate control to the managers to run the firm, conflict arises between the two groups. In fact shareholders would like the managers to work in a manner which maximizes shareholder value; whereas self-interest of the managers dominates and they make those corporate decisions which ensures their personal gains and strengthens their control over the firm.

Agency cost, which is mainly the sum of monitoring cost and bonding cost incurred by the shareholders and managers, respectively, is the primary outlay for resolving the conflict between the principal and the agent. This agency cost can be minimized in different ways, so called internal and external mechanisms, which include: by encouraging managers to acquire ownership stake in the firm *(incentive alignment hypothesis)*; by acquiring debt so that managers, facing the bankruptcy threat, are left with little amount of free cash flow at their discretion *(free-cash flow and financial distress hypotheses)*; by concentrating shareholding in few hands especially institutions who can be more watchful as compared to other shareholders and thereby affect firm performance (Agrawal and Knoeber (1996); Crutchley, Jensen, Jahera and Raymond,

(1999)); by regular dividend payments so that market starts monitoring the managers; activism of the shareholders and boardroom efficiency, etc. Corporate governance literature suggests that these techniques are meant to enhance firm performance.

In 1932 publication of book *"The Modern Corporation and Private Property"* by Berle and Means set the stage for research on corporate performance and ownership structure. Since then theoreticians and empirical researchers in corporate finance and industrial organization have been analyzing the fundamental relation between firm performance with financing modes and types of investors a firm has. However, the challenge of research is such that when one tries to untangle one thread he ends up confusing the other. Reasons for this profound confusion are numerous, theoretical as well as empirical. From theoretical stand point the relationship between the agents and principals is quite complex and it is a function of evolving dynamics of the environment in which they interact. From empirical point of view there are issues involving selection of estimation technique(s), broadening and paneling of datasets, endogeneity and simultaneity of variables, weak assumptions about linear simplification of nonlinear relationships, homoscedasticity and assumptions about normality of variables, etc.

As in earlier chapters, focus of this study is to explore effects of *direct* ownership, *ultimate* ownership and ownership *concentration* on firm performance. This study is undertaken assuming both ownership and leverage are determined jointly with firm performance. I find that insiders, both as direct and largest shareholder, have positive effect on the firm performance whereas shareholding by associated firms is inversely related to firm performance. Regression results show that shareholdings by financial institutions have negative effects on firm performance; however, they are significant only when financial institutions are the largest shareholders. Foreigners as direct and largest shareholder have positive yet insignificant impact on firm performance. Government as direct and largest shareholder affects firm performance positively, yet the coefficient is insignificant. However, when government is the ultimate shareholder, it has significant negative effect.

A brief review of literature has been presented in this section in two parts: first part reviews literature on the impact of ownership structure on firm performance and other part takes account of existing literature on the interaction of capital structure and firm performance.

4.1.1 Ownership Structure and Firm Performance

Different types of investors differ from one another not only in terms of their investment objectives but also in terms of their capacity to monitor the management (Demsetz and Lehn, 1985). There are host of studies which explore relation between firm performance and equity holdings by management, blockholders, families, institutions, foreigners, and government, etc. These studies offer substantial contribution to corporate governance literature and highlight importance of other factors like characteristics of corporate board, activism by shareholders, share trading activities in the equity markets, and competition in markets for corporate managers, etc.[55].

Pioneering research by Jensen and Meckling (1976) proposed that managerial shareholding exert positive impact on firm performance by creating incentive structure for the managers. They argue that a configuration in which interests of managers and shareholders are aligned reduces the agency problem. Studies by Demsetz (1983) and Demsetz and Lehn (1985) studied relationship between managerial shareholding and firm performance. They raised questions about linearity of relationship. Further studies by Cho (1998), and Demsetz and Villalonga (2001) have underscored the issue of endogeneity of ownership structure. The former study finds that performance affects ownership structure not vice versa; whereas, measuring ownership alternatively in terms of fraction of shares held by managers and fraction of shares held by the five largest owners, Demsetz and Villalonga assert that companies adjust their "ownership systematically in ways that are consistent with value maximization" (2001, p.1176). Therefore, it may be argued that there is no systematic significant relation between ownership structure and firm performance. However, Kapopoulos and Lazaretou (2007)

---

[55] For reference see Walsh and Seward (1990), and Shleifer and Vishney (1997).

85

study Greek corporate sector, and Ganguli and Agarwal (2008) study Indian mid-cap companies and they find that ownership concentration influences firm performance treating the former as endogenous variable. These studies assume that ownership structure is determined endogenously.

Furthermore, Mehran (1995), using data on 153 large and small industrial USA firms, have analyzed shareholding by different types of owners – shareholding by CEO, managers and directors, outside directors, outside block holders, etc. Using Tobin's Q and return on assets as measures of firm performance, he finds that only CEO ownership is value enhancing; ownership by managers and directors does not have significant effect, and block holders do not affect firm value at all.

In the same vein, Fama and Jensen (1983), Loderer and Martin (1997), Gedajlovic and Shapiro (2002), and Gedajlovic, Yoshikawa and Hashimoto (2005) have investigated factors which affect firm value. Studying determinants of corporate performance, they have explored effect of ownership stake of insiders – executives, founders, directors and immediate family members – a group of shareholders with direct managerial control of the firm. These studies have given mixed conclusion: the impact of insiders' shareholding on firm performance may work both ways: Alchian and Demsetz (1972) argue that insiders take adequate risk while adopting policies which are consistent with the value maximizing principle; whereas according to Fama and Jensen (1983), the fact that substantial amount of insiders' wealth is tied in firm projects makes them fairly risk-averse, which, in turn, may induce them to pass up firm value enhancing investment opportunities.

Morck, Shleifer and Vishny (1988) apply piece-wise linear regression technique and find that profitability – measured by Tobin's Q – has nonlinear relation with the fraction of shares by firm management. They find that firm value increases as management ownership rises to 5 percent, it falls as management ownership goes up to 25 percent, and it rises again with higher levels of managerial ownership. Other studies by Stulz (1988), McConnell and Servaes (1990), Holderness et al. (1999), and Short and Keasy (1999)

also postulate that relationship between ownership structure and firm performance is not linear. There seems to be wider consensus that firm performance goes up, falls down and then rises again as the fraction of shares held by management rises. This nature of relationship is thought to explain the interaction of entrenchment effect and wealth effect of managerial ownership.

Studies by Agarwal and Knoeber (1996), and Crutchley et al. (1999), Tsai and Gu (2007) have explored the impact of institutional ownership on firm performance and they argue that this relationship is positive. An interesting study by Loderer and Martin (1997) finds (using simultaneous equations models) that ownership does not predict performance; however, that performance has a negative impact on institutional ownership.

Whitley and Czaban (1998) argue that when firms are privatized by selling shares to foreigners, this transfer of ownership results in major organizational restructuring of the privatized firms which in turn affects the firm performance. While studying the impact of foreign shareholding Useem (1998) states that foreign shareholders change the market competition by pushing other firms to restructure their operations in the direction of shareholder value maximization. Makhija and Spiro (2000), using data of 988 newly privatized Czech firms (an emerging market), argue that foreign shareholders have better monitoring abilities; therefore, foreign shareholding enhances firm value.

La Porta et al. (1998) explored interaction of legal system and finance using data from 49 countries, including Pakistan. They have studied the impact of ownership concentration on firm value after controlling for macroeconomic factors in their regression. They find that developing economies, like Pakistan, with weak legal protection for small investors and with smaller capital markets have more concentrated ownership.

Using data for 1301 corporations in eight East Asian economies, Claessens, et al. (2002) have studied the cash flow and voting rights of the ultimate/largest owner in terms of incentive alignment and entrenchment effect, respectively. They find that cash flow rights of the largest owner are positively related to firm value (incentive alignment effect), and

voting rights of the largest owner are negatively related to firm value (entrenchment effect). On exploring identities of the ultimate owner, they find that their results are driven by family control. While exploring interaction of ultimate control of the state and ultimate control of private investor, Chernykh (2005) finds nonlinear relation between ultimate ownership by state and firm performance.

There are a few studies focused on corporate performance in Pakistan. Javid and Iqbal (2007) have constructed a composite index of corporate governance using information regarding corporate board, ownership structure and disclosure. However their sample size is very small – 50 listed top performing firms and that induces a bias in their study. Their composite index, however, indicates that better corporate governance adds value to the firm. Cheema and Bari (2003) did comparative statistical analyses on corporate governance in South Asian economies - India, Pakistan, Sri Lanka and Bangladesh. Ibrahim (2006) has written an essay on corporate governance issues in Pakistan, broadly focusing on legal dimension only.

4.1.2 Capital Structure and Firm Performance

With regard to corporate governance of a firm there are three main players – managers, shareholders and debt-holders. In case shareholders occupy management slots or managers hold substantial fraction of the equity, the agency cost of outside equity is reduced. The seminal work of Jensen and Meckling (1976) and Jensen (1986) set foundations for the role of debt in constraining the managers so that they may work in the interest of shareholders and enhance firm value. In the words of Myers "A high debt ratio can be dangerous, but it can also add value by putting the firm on diet" (2001, p 98).

Highlighting the managers' incentive structure Mehran (1992) has argued that when 'outside monitoring' is low managers have incentive to under-lever the firm to avoid bankruptcy risk. On the other hand, Jensen (1986) argues that in order to protect the interest of shareholders, firms with prevalent moral hazard problems, would tend to have higher debt ratio which would force the managers to work for value maximization of the

firm. Therefore, the conclusion on the relationship between leverage and firm performance is inconclusive.

Bajaj, Chan and Dasgupta (1998) promote a model, which allows for moral hazard and adverse selection problems such that capital structure and firm performance are affected by monitoring mechanism and ownership structure of a firm. While exploring effect of ownership structure on capital structure and firm performance, Driffield, Mahambare and Pal (2005) have tried to deal with the simultaneity between capital structure and firm performance by applying three-stage least squares. They find that higher ownership concentration is positively associated with leverage.

Similarly, Berger and di Patti (2006), while studying the banking industry in U.S., highlight the issue of simultaneity between capital structure and firm performance. They argue that agency cost of outside equity is measured by the loss in firm value caused by self-interest of the managers who are optimizing their own utility functions at the cost of interests of the shareholders. They further state that capital structure affects agency costs and thereby influences firm performance.

There are two countervailing arguments that tax shield enhances firm value of levered firm but financial distress cost of debt reduces firm value. Chou and Lee (2007), using data of Taiwanese firms, find that there is curvilinear relation between return on equity and leverage ratio; it increases as leverage ratio goes up and then falls for high levels of leverage ratio. Zeitun and Tian (2007) analyzed effect of Jordanian firms' leverage ratio on firm performance. Using return on assets and Tobin's Q as performance measure, they find that capital structure is negatively related with firm performance.

In sum, putting any measure of firm performance on the left-hand side of the equation and covariates like ownership structure and leverage, along with other control variables, on the right-hand side of the equation is marred with host of theoretical and empirical issues. Motivating this study it may be argued that corporate sector of Pakistan (characterized by family control, concentrated equity ownership, and weaknesses in

corporate governance) offers an interesting opportunity to test a range of hypotheses on the relation between ownership structure and firm performance.

4.2 Data and Variables

4.2.1 Variables

While researching firm performance there are three issues which need to be considered carefully: (a) selecting appropriate firm performance measure; (b) listing dependent and explanatory variables and projecting expected nature of relationship; and (c) dealing with reverse causality between ownership structure and firm performance, and simultaneity between leverage and firm performance.

Dependent Variables: Two-stage least squares technique has been applied in this study with two equations in the first stage and one in the second stage. There are two dependent variables for two equations in the first stage (ownership and leverage), and in the second stage firm performance measure, main dependent variable, is placed on the left hand side of the equation.

As regards firm performance measures there is a long list of candidates – accounting based measures, which include return on equity (ROE), return on assets (ROA), earnings before taxes and interest (EBIT); and market based measures, which include market value added (MVA), economic value added (EVA), and Tobin's-Q. This study explores firm performance using Tobin's Q, which is defined as ratio of market value of firm to book value of assets. Market value of firm is the sum of market value of equity and book value of debt.

Explanatory Variables: Ownership is main explanatory variable and, as stated in earlier chapters, it has been explored in three dimensions: direct ownership, ownership concentration, and ultimate ownership. Definition of ownership is mainly based on voting

rights. Vector of control variables include leverage, log of assets, asset tangibility, quick ratio, and firm risk.

4.2.2 Summary Statistics

Table 4.1 presents summary statistics of firm specific variables. As shown in the table average size of a firm in terms of total assets is 3.80 billion Pakistani Rupee (hereafter PKR), with median assets 940 million PKR (in terms of gross sales it is 4.8 billion PKR with median 970 million PKR) . Further, the table shows that average (median) value of Tobin's Q – firm performance measure – is 1.14 (0.98). Average (median) debt ratio is 68 (73.50) percent suggesting that Pakistani listed firms are fairly leveraged. Further, the structure of assets is such that tangible assets, on average, are little more than half of total assets (52.36 percent). Quick ratio, an indicator of the ease with which a firm is able to pay off its immediate liabilities, has average (median) values as 87 (61). Firm risk (measured by the standard deviation of the last four years' market value of stocks) has average 0.66 and median value 0.05. The mean (median) effective tax rate is 22.12 (12.31) percent. Average dividend payout ratio is 15.30 percent of the net profit before taxes. The annual depreciation to asset ratio (NDTS) is 4 percent, and the firm profitability measured by return on equity is 11.30 percent on average with 10 percent median value.

Table 4.1: Descriptive Statistics

(Firm specific variables)

All statistics are calculated over the whole set of 306 firms. Total assets and gross sales are measured in million of Pakistani Rupees; Tobin's q is ratio of market value of equity and book value of debt to total assets; risk is measured as standard deviation of market value of firm during last four years; and rest of variables are presented in percentage terms.

Variables	Mean	Median	St. Dev.	Min	Max
Total Assets	3772	940	10864	5	150656
Gross Sales	4794	970	18017	0	353833
Tobin's q	1.14	0.98	0.58	0.20	6.62
Leverage	67.67	73.50	24.02	1.38	100.00
Tangibility	52.36	53.15	22.58	0.00	98.69
Quick Ratio	87.04	61.06	110.77	0.49	1522.76
Risk	0.66	0.05	2.10	0.00	22.25
Effective Tax Rate[56]	22.12	12.31	100.95	-300.00	1600.00
Dividend Payout	15.26	0.00	35.46	-118.95	500.00
Return on Equity	11.31	10.00	78.61	-684.30	1242.90
Non-debt Tax Shield	4.09	3.68	3.78	0.00	76.65
Asset Turnover	119.47	100.75	107.94	0.00	1487.50

Detail on sources of data has been given in section 2.2 of chapter 2. Definitions and summary statistics of ownership and other relevant variables (different types of direct, ultimate and the largest shareholder) are presented in section 2.2 of chapter 2. For full summary statistics of ownership categories, see Table 2.2.

---

[56] In order to control for outliers the model in section 4.4 has been tested by controlling for top/bottom 1 percent and top/bottom 5 percent values of the variables of interest (especially effective tax rate, dividend payout ratio and return on equity), and generally the results are robust to extreme values.

4.3   Hypotheses

4.3.1   Direct Ownership and Firm Performance:

Direct ownership represents *direct* voting rights of immediate shareholders by category of owner. As stated in chapter 2, section 2.2 categories of direct owners include insiders, associated firms, group, financial institutions, foreigners and the state.

Insiders, the focus category of direct owners, is defined as percentage of voting rights held by managers, directors and their family members. *Convergence of interest* hypothesis suggests that ownership by this category of shareholders aligns their interest with that of shareholders. Therefore, following hypothesis may be set in this regard:

H4.1: Equity ownership by insiders affects firm performance positively.

Shareholding by ***associated firms***[57] may work in either direction - positive or negative. If associated companies are seeking rent through their equity holding in the firm – siphoning or misallocating resources of investee firm and passively participating in its control and decision making process then shareholding by such associated companies would affect firm value negatively. However, if associated companies actively participate in the management of investee firm then they would add value to the investee firm.

Group, sum of voting rights of insiders and associated firms, is supposed to work as a voting block. The impact of equity holdings of group on firm value depends on the strength of effects of the constituent parts (insiders and associated firms). However, it may be postulated that groups parallel the idea of *big firms* which have a pool of financial, technical and human resources at their disposal. Therefore, groups, taken as well diversified portfolio of assets and liabilities, are better able to absorb losses in one part and smooth out the dividends to other member firms. Nonetheless, empirical

---

[57] Definition of associated firms is prescribed in the Companies Ordinance (1984) of the Government of Pakistan, and it is based upon minimum 20 percent voting rights with the associated/related firm. Further detail is provided in section 2.2 of chapter 2.

analyses in the following section would help in determining the nature of relationship between equity ownership by group and firm performance measured by Tobin's q.

Financial institutions have the advantage of gathering and analyzing detailed information about companies which could be their real or potential borrowers. This information advantage not only helps them in making better investment decisions but also adds to their monitoring capacity. However, it may also be argued that main investment objectives of financial institutions – non-strategic investors – invest in equities for the sake of diversifying their portfolio. Moreover, as far as banks are concerned, banking sector supervisor (SBP) discourages banks from engaging in day-to-day affairs of the firms they hold the shares of. Given these competing arguments regarding the nature of relationship between equity holding by financial institutions on firm performance, the determination of direction and strength of relationship is left to empirical analyses.

Shareholding by **foreign** investors brings not only the foreign capital and technical advantage to the firm but also enhances market confidence in that firm in the sense that foreign investors have better business skills, better access to international capital market, and would be better able to survive business cycles thereby adds to the firm value.

H4.2: Foreign shareholding affects firm performance positively.

Government ownership is based on economic objectives as well as political ambitions, and the latter usually dominate the former at the cost of interests of other stakeholders of the firm and the taxpayers. Moreover, the managers of public companies have no incentive to enhance the efficiency of the firm as they have no threat of job loss. Free of almost all monitoring, they have ample opportunities to extract private benefits of control and misappropriate the firm resources.

H4.3: Government shareholding affects firm performance negatively.

4.3.2 Ownership concentration:

Like in previous chapters, ownership concentration is measured in terms of shareholding by the single largest owner and, alternatively by the equity holding of top three and top five shareholders.

La Porta et al. (1998) have argued that countries with weak legal protection to the investors would have more concentrated shareholding of the firms. According to them shareholding concentration provides not only substantial legal and financial benefit of control and enhanced capacity to monitor the managers but also it works to safeguard against poor legal protection available to small investors. Pakistan has inherited common law background from the British colonial rule; however, unlike Anglo-American model of diffused shareholding, the corporate ownership structure is rather concentrated. Moreover, the rights of minority shareholders are not very well protected[58].

Apart from above it may be argued that as the ownership stake of the shareholders increases the incentive to engage more and more in the firm affairs increases. This would add to the monitoring of the firm managers so that their efficiency may be enhanced. We, therefore, expect a positive relation between the ownership concentration and firm value.

H4.4: Ownership concentration affects firm performance positively.

H4.4a: Insider and foreigner as the single largest owner affect firm performance positively (Incentive alignment hypothesis) whereas financial institution and the state affect firm performance negatively (rent extraction and passive voter hypothesis).

---

[58] Corporate law in Pakistan (Companies Ordinance of Pakistan 1984, XLVII) states that one should have at least 20 percent shareholding in a firm before seeking remedy from the court of law against any misconduct in business by rest of the shareholders. In order to lodge complain to the corporate supervisor (SECP) one should represent at least 10 to 20 percent shareholding of the firm. There is no section in the law or in the Code of Corporate Governance dealing with rights of the shareholders with shareholding less than 10 percent, therefore, it may be concluded that minority shareholders go without any legal protection.

4.3.3 Ultimate Ownership

The definition of ultimate shareholder and the types thereof remain the same as in chapter 2. Being the largest and controlling shareholder(s) of the firm, ultimate shareholders' interests would be aligned with the management, especially in case of family having the largest and controlling stake. Family as an ultimate shareholder is expected to have positive bearings on the firm performance as they tend to protect their interests in the firm which they might consider as family jewel. Moreover, there are higher chances that family members are directly engaged in the day-to-day functioning of the firm. For foreigners as ultimate owner we may draw similar argument. However, government as an ultimate shareholder might affect the performance of the firm negatively due to weak oversight of the management, bureaucratic inefficiencies, and using corporate resources for political expediency. Following are the proposed hypotheses:

H4.5: Ultimate control of family on a firm affects its performance positively.

H4.6: State as ultimate owner of a firm affect its performance negatively.

H4.7: Foreigners as ultimate owners of a firm have positive effects on firm performance.

4.3.4 Other Explanatory variables:

Leverage is measured as the ratio of book value of debt to market value of equity plus book value of debt. A positive sign of leverage in our model would assert that higher debt level reduces agency cost of outside equity and, therefore, forces the managers to take care of the interest of the shareholders. Another explanation is that as a firm accumulates more and more profits it may tend to substitute debt for equity, and for such a successful firm access to debt market (with all its tax saving and other benefits) increases. On the other hand, negative sign of market leverage highlights that income effect of increased profitability is stronger than substitution effect in the sense that better performing firms invest their profits back into the pool of investible funds thereby decreasing debt holding. Firms do this in order to protect shareholders' rights to free cash flows of the firm.

Firm size is another determinant of firm performance. It is measured as natural log of total assets. A positive affect of the size of firm on its performance shows that the firm is enjoying economies of scale. On the other hand, if firm size has negative affect on firm performance then the firm may be over-sized.

Asset tangibility (Tang) is ratio of the fixed assets to total assets and it could have positive or negative relationship with firm performance. A negative relation of asset specificity with the firm performance may be an indicator that the firm has over invested in fixed assets which may not have secondary markets, whereas positive relation between asset tangibility and firm performance is indicative of market's confidence on the nature, size, utility and marketability of the fixed assets.

Quick ratio (QR) or acid-test ratio, the ratio of current assets minus inventories to current liabilities, measures the ease with which a firm is able to meet its short-term liabilities using its most liquid assets. The higher the quick ratio, the greater is the margin it adds to firm performance.

Risk measured by the standard deviation of the last four years' market value of common stock. Assuming that market is occupied by stable, risk-averse and long term investors then market would like the stock price to remain stable; that is, riskiness of the firm is low. This implies that the relation between Tobin's q and firm risk is expected to be negative.

4.4   Methodology

4.4.1 Endogeneity

In traditional setting of regression equation right-hand side variables (regressors) determine the left-hand side (dependent) variable. However, it could be true that dependent variable tends to explain one or more explanatory variables. Those explanatory

variables which are also explained by the dependent variable are called endogenous variables. In fact some regressors are endogenous because they correlate with the residuals and they come at the cost of creating bias in estimation. If the model suffers from endogeneity problem then OLS estimators would give biased and inconsistent parameter estimates[59]. There are various techniques to deal with this problem. Among others, one such technique is two-stage least squares - instrument variables regression (2SLS-IV) and Generalized Method of Moments (GMM)[60].

In order to handle endogeneity problem, ownership and capital structure have been jointly determined with firm performance. Following Demsetz and Lehn (1985), 2SLS technique has been used to estimate two simultaneous equations. 2SLS is basically a least squares technique, and, unlike OLS, it is robust to endogenous variables. However, 2SLS estimates are not efficient asymptotically.

Discussing endogeneity between ownership and firm performance Demsetz (1983) argues that in pursuit of maximization of firm value ownership is determined endogenously. Other studies by Hermalin and Weisbach (1991) and Cho (1998) support this argument. They state that increasing returns to scales may prompt the managers towards equity issues and that may increase diffuseness of equity ownership. Therefore, it is not always the case that ownership dispersion and firm value are negatively related[61].

Capital structure is also suspected to be endogenous to firm performance. It may be argued that better performing firms (earning high profits) may like reduce their debt levels so that they set themselves free from the restrictions imposed by the debt covenants. This is especially true for firms with block holdings by insiders or families. Moreover, better firm performance reduces the cost of equity capital. These arguments explain that firm performance affects capital structure choice. Looking at the flipside, it may be argued that, apart from its tax advantage, debt reduces agency cost of outside

---

[59] Woolridge (2003).
[60] As a matter of fact 2SLS-IV is a version of GMM.
[61] This is one of the most convincing arguments countering Berle and Means (1932) proposition that firms perform badly as their ownership becomes more and more diffused.

equity by pushing managers to run the firm in manners consistent with wealth maximization principle. However, highly leveraged firms face financial distress cost which may have bearings on the firm value. In sum, it may be stated that firm performance and leverage are both cause and effect for one another.

4.4.2 Two-stage Least Squares Estimation Technique

This study is based on instrumental variables two-stage least squares within estimators (fixed effects) model for panel data. Basically the estimators are two-stage least squares generalizations of simple panel-data estimators for exogenous variables. Following are the simultaneous equations:

$$Q_a = a_i + b_i.X + c.O + d.L + \varepsilon_{i,t} \qquad (4.1)$$

where Q_a stands for average Tobin's Q; X represents vector of determinants of firm performance, and it includes log of sales, tangibility, firm risk, and quick ratio; O represents ownership variables; and L represents leverage.

Ownership (O) and leverage (L) have been instrumented as following

$$L = \alpha_1 + \beta_i.Y + \eta_{i,t} \qquad (4.2)$$

$$O = \alpha_2 + \gamma_i.Z + v_{i,t} \qquad (4.3)$$

where Y and Z are vectors of determinants shared by leverage and ownership, and their elements includes log of assets, market-to-book ratio, asset turnover, dividend payout, effective tax rate, and non-debt tax shields

Firm level characteristics have been used as instruments for both leverage and ownership equations. The validity of the instruments may be discussed in terms of Sargan-Hansen test statistics (in econometrics terms) and by seeking references from the literature. As

99

regards the literature, empirical studies by Titman and Wessels (1988); Barclay and Smith (1995); Booth et al. (2001); and Antoniou et al. (2008) find that firm specific characteristics like firm size, dividend payout, tax rate, profitability, and non-debt tax shields are major determinants of the corporate capital structure choice. Likewise, studies on the relation between ownership structure and firm performance (Demsetz and Lehn, 1985; Crespi Cladera, 1998; Bebchukk, 1999a and 1999b) have used firm size, growth opportunities, dividends, asset turnover, and profitability as the factors influencing firm ownership. Al-Najjar and Taylor (2008) purport that factors like firm size, asset tangibility, growth opportunities, business risk, etc. are common determinants of ownership and capital structures. Following these studies equations (4.1 to 4.3) have been formulated. Additionally, Sargan-Hansen test statistics, reported in the subsequent parts of this chapter, validate instruments used in those structural equations.

4.4.3 Testing Endogeneity (Model)

Before applying 2SLS model on panel data, it would be necessary to test endogeneity. Durbin-Wu-Hausman (hereafter DWH) test, a two-step testing method, is used in this regard[62]. The DWH test procedure is as follows:

Taking endogenous variables - ownership and leverage - one by one and regressing them against a list of exogenous variables, residuals *(ω and τ)* are saved, and then in the second stage those estimated residuals are placed among other explanatory variables on the right-hand side of the structural equation (4.6).

$$L = \kappa_i + \sigma_l . E + \omega_{i,t} \qquad\qquad (4.4)$$

$$O = \delta_i + \pi_l . E + \tau_{i,t} \qquad\qquad (4.5)$$

$$Q_a = \lambda_i + \theta_m . W + \lambda_1 . (\omega_{i,t}) + \lambda_2 . (\tau^j_{i,t}) + \psi_{i,t} \qquad\qquad (4.6)$$

where

---

[62] For reference see Davidson and MacKinnon (1993)

E: Vector of *'l'* exogenous variables which include firm size, tangibility, quick ratio, risk, market-to-book ratio, non-debt tax shield, asset turnover, effective tax rate, and dividend payout

W: vector of *'m'* explanatory variables which include ownership type, leverage, size, tangibility, quick ratio, and Risk.

$\omega_{i,t}$:   Estimated residuals for (market) leverage

$\tau_{i,t}^{j}$:   Estimated residuals for ownership type *'j'*

For the given model if the coefficient of the residuals – *'ω' and 'τ'* – is statistically significant, it may be concluded that OLS estimates are biased and inconsistent. Therefore, DWH test provides basis for using 2SLS in order to get estimates of firm performance, ownership and leverage relation[63].

4.4.4 Test of Over-identifying Restrictions

As 2SLS regression technique has been applied, therefore order (identification) and rank conditions[64] need to be taken care of. The order condition for identification involves excluded exogenous variables and endogenous variables in our estimation equation in such a manner that the number of former should not be less than the later. The rank condition for identification requires that there must be at least one variable in the second equation which is not included in the first equation and must have a non-zero coefficient.

The null hypothesis for testing the orthogonality conditions (over-identifying conditions) is that the excluded variables (instruments) are valid instruments; that is, they are uncorrelated with the error terms. The failure of the null hypothesis[65] casts doubts about the validity of the instruments used.

---

[63] For reference on how to apply 2SLS see Cong, R. (2004), available at www.stata.com
[64] Wooldridge (2003).
[65] STATA module 'xtoverid' command with cluster option reports an over-identification statistic that is robust to arbitrary heteroskedasticity and within-group correlation and as stated earlier, rejection of null hypothesis renders validity of instruments, used in 2SLS model, objectionable.

4.5   Empirical Results

4.5.1 Testing Endogeneity of Leverage and Ownership

For our model, with both leverage and ownership considered endogenous variables simultaneously, second stage results are shown in appendix A4.1 – A4.3 for direct, concentrated and ultimate ownership, respectively. The coefficients of estimated residuals of leverage (ω) are statistically significant for sixteen out of eighteen models; similarly, coefficients of residuals of ownership variables are statistically significant for seventeen out of eighteen models. Therefore, it may be argued that leverage and ownership are endogenous to the firm performance equation and that 2SLS-IV[66] is a better estimation technique than OLS.

4.5.2 Control Variables:

The coefficient of ln(a) – proxy for firm size – is negative and statistically significant which shows that as the firm size increases the performance of the firm, measured by Tobin's Q, goes down. This result is consistent with the findings of Demsetz and Lehn (1985), Agarwal and Knoeber (1996) and Agarwal and Ganguli (2008). The coefficient of **tangibility** (Tang) is negative and insignificant for most of the categories of ownership. The coefficient for **quick ratio** (QR) is negative and statistically significant which implies that the market has a negative view on assets which are easily convertible to cash. The coefficient for **risk** is positive for all ownership types and it is statistically significant for most of them.

---

[66] The first stage regression results are reported in the Appendix A4.5. In the first stage of the 2SLS-IV regression endogenous covariates (ownership and leverage) are estimated and then the predicted values of those endogenous covariates have been used in the second stage of the 2SLS-IV regression. The first stage results show that coefficients of firm size, risk, asset turnover and non-debt tax shield are statistically significant for most of the owners' types and coefficients of quick ratio, risk, asset turnover and non-debt tax shield are statistically significant for leverage equation.

Leverage: The coefficient of leverage (Lev.), suspected of being endogenous, is negative for all ownership types and it is statistically significant for most of them. The negative sign shows that less levered firms have higher market value. Possible explanation for this inverse relationship is that when the firms earn profits they, following *Pecking-order theory*, either recycle profits to finance new ventures or they payoff their debts so that the shareholders may benefit from greater dividend disbursements in the future.

4.5.3 Direct ownership and firm performance[67]

Insiders: This is probably the most researched category when it comes to testing effect of ownership structure on firm performance. Model (1) in Table 4.2 shows that coefficient of 'insiders' is positive and statistically significant. This implies that agency problem between the shareholders and managers is partially resolved by insiders' shareholding - firm performance improves by 6.8 percent for every unit increase in shareholding by the insiders. This is obviously the result of convergence of interest of the managers with that of other stakeholders (Jensen and Meckling, 1976). Our results are consistent with findings of Monsen, John and David (1968), Alchian and Demsetz (1972), Leach and Leahy (1994), Mehran (1995), and Loderer and Martin (1997).

Associated Firms: Shareholding by related companies (model 2 - Table 4.2) exerts negative[68] significant effect on firm performance. This implies that associated firms siphon the investee firm's resources.

The combined effect of the insiders' shareholdings and associated firms' shareholding comes under the category of **group**. Table 4.2 (model 3) shows that shareholding by 'group' has positive significant effect on firm performance. Possible explanation for this

---

[67] To check robustness of firm performance measure, 2SLS regression has been run with return on equity (RoE), in place of Tobin's q, as dependent variable and the results are reported in the appendix in tables A4.6 (for direct owners) and A4.7 (for ultimate owners). Generally, the results are robust in terms of direction of relationship, with slight variations in strength of relationship.
[68] We have tested the model for different levels of associated firms' shareholding starting from 5% to more than 50%; however the direction of relationship throughout remains negative.

positive impact is that group works as a unified whole and better able to allocate firm resources efficiently.

Shareholdings by **financial institutions**, as shown by model (4) in Table 4.2, have negative yet statistically insignificant impact on firm performance. Model 5 in Table 4.2 shows that **foreign shareholding** affects firm performance positively; however, that effect is statistically insignificant. Direct shareholding by the **state** is value enhancing as far as the direction of relation between voting rights with Government of Pakistan and firm performance measure (Tobin's q) is concerned; however, statistically the estimate is not different from zero.

Table 4.2: Direct Ownership and Firm Performance
(Dependent variable: Average Tobin's q)

Table reports regression results with (average) Tobin's q as dependent variable and equity holding of type 'j' of direct owner as main explanatory variable. Leverage (Lev.), log of assets (ln(a)), asset tangibility (Tang.), quick ratio (QR), and firm risk are control variables. Types of direct owner (j) include: Insider, Associated Firms (AF), Group (Insiders + Associated firm), Financial Institutions (FI), Foreigner and the State (Government of Pakistan). Sargan represents Sargan-Hansen test statistic for over-identifying restrictions.

	(1) Insider	(2) AF	(3) Group	(4) FI	(5) Foreigner	(6) State
Lev.	-0.014***	-0.022***	-0.011**	-0.008	-0.012	-0.013
	(-2.62)	(-4.79)	(-2.40)	(-1.20)	(-1.56)	(-0.81)
ln(a)	-0.266***	-0.056	-0.207***	-0.166**	-0.179*	0.548
	(-3.00)	(-1.59)	(-2.86)	(-2.16)	(-1.80)	(0.76)
Tang.	-0.003	-0.001	-0.003**	-0.002	0.003	-0.005
	(-1.55)	(-0.90)	(-2.10)	(-1.18)	-0.73	(-0.71)
QR	-0.077***	-0.096***	-0.090***	-0.087***	-0.080**	0.00
	(-2.77)	(-4.79)	(-4.22)	(-4.28)	(-1.98)	(-0.00)
Risk	0.069***	0.061***	0.060***	0.082***	0.109**	0.189
	(2.91)	(3.43)	(3.27)	(3.40)	(2.26)	(1.11)
Insider	0.068***					
	(2.67)					
AF		-0.056*				
		(-1.83)				
Group			0.046**			
			(2.29)			
FI				-0.04		
				(-1.45)		
Foreigner					0.159	
					(1.54)	
State						0.562
						(0.86)
Constant	2.143***	3.950***	1.547**	3.584***	1.791*	-2.979
	(4.33)	(6.14)	(2.29)	(6.67)	(1.93)	(-0.43)
Obs.	1525	1525	1525	1525	1525	1525
F-value	13.85	22.83	21.30	28.77	6.62	1.44
Within	4.49	7.86	7.21	9.99	2.15	0.46
p-value	0.00	0.00	0.00	0.00	0.00	1.00
Sargan	2.33	13.26	3.89	11.34	3.76	2.84
p-value	0.50	0.00	0.27	0.10	0.29	0.42

t-stat in parenthesis, *** significant at 10%; ** at 5%; * at 1% levels.

4.5.4 Ownership Concentration and Firm Performance:

Three alternative measures – shareholding by the single largest owner, shareholding by top three shareholders, and shareholding by top five shareholders – have been used to estimate the impact of ownership concentration on firm performance. Table 4.3, models (1) to (3) show that ownership concentration is inversely related with firm performance. This negative impact shows that high concentration in the hands of single largest or top three or top five shareholders points towards entrenchment effect, yet coefficient for all three measures of ownership concentration are statistically insignificant.

However, when we look deeper into the identities of the largest owner, Table 4.3, models (4) to (8) show that shareholding by insider, foreigner and state – as the largest owner – has positive relation with Tobin's q, whereas associated companies and financial institutions as largest owner exert negative impact on firm performance. Table 4.3 shows that coefficients for foreigner and state as the largest owner are statistically insignificant.

These results show that when corporate management acquires ownership stake such that that they become the largest equity holder in the firm, their interest gets aligned with the interest of other stakeholders. In fact block holding by the management controls opportunistic behavior of the managers. Associated firms, as the largest shareholder, exert negative impact on firm performance. On the one hand, associated firms may be taken as passive voters who may not be vigilant of the management; and on the other hand, associated companies being controlling shareholders may be misappropriating firm resources. Similarly, financial institutions as the largest equity owner also affect firm performance negatively, which again may be explained in terms of *passive-voter hypothesis*. As explained earlier, since financial institutions are discouraged from participating in day-to-day affairs of the investee firms, they are not able to effectively monitor the management which results in negative impact on firm performance.

Table 4.3: The largest owner and Firm Performance
(Dependent variable: Average Tobin's q)

Table reports regression results with (average) Tobin's q as dependent variable. Main explanatory variable is proxy ownership concentration (shareholding of top five (three) or the largest owner) as shown in Models 1 to 3. In Models 4 to 8, dummy for type of the largest owner has been interacted with the voting rights of the largest owner. T5 (T3) represents sum shareholding of top five (three) shareholders and T1 represents shareholding of the largest owner. Types of the largest owner are Insider (T1-Insid), Associated firm (T1-AF), financial institution (T1-FI), foreigner (T1-For.) and State (T1-State). Leverage (Lev), log of assets (ln(a)), asset tangibility (Tang.), quick ratio (QR), and firm risk are control variables. Sargan represents Sargan-Hansen test statistic for over-identifying restrictions.

	(1) T5	(2) T3	(3) T1	(4) T1-Insid	(5) T1-AF	(6) T1-FI	(7) T1-For.	(8) T1-State
Lev.	-0.020***	-0.015	-0.018***	-0.013***	-0.019***	-0.014***	-0.025*	-0.019***
	(-3.90)	(-1.14)	(-5.79)	(-2.65)	(-5.69)	(-3.32)	(-1.77)	(-3.23)
ln(a)	-0.014	0.08	-0.049	-0.250***	-0.048	-0.206***	0.069	-0.051
	(-0.23)	(-0.34)	(-1.51)	(-2.90)	(-1.58)	(-3.78)	(-0.41)	(-0.97)
Tang.	-0.003	-0.009	-0.002**	-0.003*	-0.001	-0.004**	0.014	-0.002
	(-1.64)	(-0.83)	(-2.04)	(-1.70)	(-1.08)	(-2.50)	(-0.87)	(-1.03)
QR	-0.121***	-0.161	-0.104***	-0.112***	-0.118***	-0.101***	-0.162*	-0.101***
	(-4.15)	(-1.50)	(-6.70)	(-4.54)	(-6.27)	(-4.64)	(-1.91)	(-3.44)
Risk	0.02	-0.083	0.054***	0.069***	0.053***	0.062***	0.03	0.052**
	(0.53)	(-0.41)	(3.97)	(3.14)	(3.68)	(3.24)	(0.51)	(2.02)
T5	-0.05							
	(-1.09)							
T3		-0.165						
		(-0.71)						
T1			-0.01					
			(-0.77)					
T1-Insid.				0.075**				
				(2.48)				
T1-AF					-0.035*			
					(-1.71)			
T1-FI						-0.120***		
						(-3.66)		
T1-For.							0.418	
							(1.05)	
T1-State								0.319
								(1.10)
Constant	5.804**	10.361	3.167***	3.343***	3.239***	4.209***	-0.613	2.249***
	(2.17)	(0.98)	(7.79)	(8.15)	(10.25)	(8.63)	(-0.18)	(2.99)
Obs.	1525.00	1525.00	1525.00	1525.00	1525.00	1525.00	1525.00	1525.00
F-value	16.03	2.01	37.53	15.92	33.10	20.59	2.44	10.37
Within	5.54	0.67	12.87	5.27	11.48	6.52	0.79	3.56
p-value	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
Sargan	7.36	0.64	21.30	4.46	20.06	1.75	2.13	16.39
p-value	0.06	0.89	0.00	0.22	0.00	0.63	0.55	0.00

t-stat in parenthesis, *** significant at 10%; ** at 5%; * at 1% levels.

4.5.5 Ultimate ownership and Firm Performance

Results in Table 4.4 show the impact of shareholding by different types of ultimate owners on firm performance for different threshold levels of voting rights (10 percent, 25 percent and 50 percent). Model (1), (2) and (3) show that voting rights of the ultimate owners, without any regard to the identity of the ultimate owner, have positive significant relation with Tobin's q. This implies that, in general, ultimate owners exercise their control rights in manners consistent with value maximization principle.

Models (4) to (18) show results for different identities of ultimate owner and they show that equity holding of family as ultimate shareholders, for both definitions of family, has positive significant impact on firm performance for all threshold levels of voting rights. These findings imply that family control is value enhancing. In fact business families are strategic investors who have tied up their family wealth in their business, and they place family members on the board of directors and in the management of the firms under their control who exercise effective control over the firm management. In sum, longer histories of business families, which play important role in markets for suppliers of raw material and funds, and commitment of the family to superior entrepreneurship results in positive impact on firm value.

Ultimate shareholdings by foreigners have nonlinear relation with firm value. However, coefficient for ultimate shareholding is statistically insignificant for all threshold levels. Equity stake of state as ultimate shareholder affects firm value negatively for all threshold levels and the coefficients are statistically not different from zero.

Table 4.4: Ultimate Ownership and Firm Performance (Dependent variable: Average Tobin's q)

Table reports regression results with (average) Tobin's q as dependent variable. In Models 1 to 3 main explanatory variable is equity holding by the ultimate owner, and in models 4 to 18 interaction term for different types of ultimate owner become main explanatory variable (dummy for type of the largest owner has been interacted with the voting rights of the ultimate owner). UO represents shareholding of ultimate owner. Types of ultimate owner are Family (UO_Family), State (UO_State), Foreigner (UO_Foreigner), Legal person (UO_LP), and Family with extended definition (UO_FamE). Leverage (Lev), log of assets (ln(a)), asset tangibility (Tang.), quick ratio (QR), and firm risk are control variables. Sargan represents Sargan-Hansen test statistic for over-identifying restrictions.

	Ultimate owner (UO)			UO_Family			UO_State		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Threshold	**10**	**25**	**50**	**10**	**25**	**50**	**10**	**25**	**50**
Lev.	-0.012***	-0.013***	-0.017**	-0.016***	-0.016***	-0.019***	-0.020***	-0.020***	-0.019*
	(-2.63)	(-2.82)	(-2.52)	(-3.80)	(-3.73)	(-3.09)	(-2.67)	(-2.67)	(-1.92)
ln(a)	-0.204***	-0.182***	-0.319**	-0.190***	-0.177***	-0.236**	-0.023	-0.023	-0.008
	(-3.03)	(-3.02)	(-1.98)	(-3.45)	(-3.58)	(-2.54)	(-0.31)	(-0.31)	(-0.09)
Tang.	-0.000	0.000	0.002	-0.001	-0.001	0,000	-0.003	-0.003	-0.004
	(-0.11)	(0.15)	(0.61)	(-0.82)	(-0.88)	(-0.12)	(-1.16)	(-1.16)	(-1.10)
QR	-0.086***	-0.083***	-0.097***	-0.084***	-0.083***	-0.092***	-0.079*	-0.079*	-0.064
	(-3.91)	(-3.69)	(-2.70)	(-3.63)	(-3.76)	(-2.86)	(-1.88)	(-1.88)	(-1.14)
Risk	0.070***	0.069***	0.064**	0.060***	0.064***	0.056**	0.068**	0.068**	0.077
	(3.64)	(3.58)	(2.01)	(3.06)	(3.37)	(2.02)	(1.99)	(1.99)	(1.65)
UO	0.045**	0.041**	0.049*						
	(2.47)	(2.48)	(1.72)						
UO_Family				0.067***	0.056***	0.052**			
				(3.26)	(3.50)	(2.31)			
UO_State							-0.472	-0.472	-0.303
							(-1.11)	(-1.11)	(-1.58)
Const.	1.096	1.214	2.687***	1.560***	1.770***	2.908***	4.240***	4.202***	3.394***
	(1.37)	(1.60)	(4.78)	(2.90)	(3.83)	(5.99)	(3.21)	(3.26)	(4.06)
Obs.	1525	1525	1525	1525	1525	1525	1525	1525	1525
F-value	21.23	20.75	7.34	19.21	21.16	9.59	6.81	6.81	3.81
Within	7.07	6.92	2.40	6.17	6.77	3.09	2.31	2.31	1.19
p-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Sargan	3.65	3.57	1.19	2.16	1.94	2.47	5.56	5.56	0.58
p-value	0.30	0.31	0.76	0.54	0.59	0.48	0.14	0.14	0.90

(Continued)

Table 4.4 (Continued)

	UO_For.			UO_LP			UO_FamE		
	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Threshold	**10**	**25**	**50**	**10**	**25**	**50**	**10**	**25**	**50**
Lev.	-0.018***	-0.016***	-0.019***	-0.020***	-0.023***	-0.018***	-0.013***	-0.012***	-0.017***
	(-3.49)	(-3.66)	(-4.69)	(-5.44)	(-5.13)	(-5.56)	(-3.27)	(-2.74)	(-3.29)
ln(a)	-0.101*	-0.064**	-0.073**	-0.042	-0.038	-0.039	-0.172***	-0.175***	-0.226***
	(-1.76)	(-2.00)	(-2.03)	(-1.34)	(-1.09)	(-1.06)	(-3.40)	(-3.38)	(-2.59)
Tang.	0.008	-0.008	0.002	-0.001	-0.001	-0.002	-0.003*	-0.003*	-0.001
	-0.81	(-0.58)	-0.7	(-1.02)	(-0.32)	(-1.63)	(-1.92)	(-1.87)	(-0.58)
QR	-0.090***	-0.108***	-0.100***	-0.107***	-0.116***	-0.106***	-0.084***	-0.077***	-0.088***
	(-3.17)	(-4.83)	(-4.94)	(-6.45)	(-5.85)	(-6.37)	(-4.24)	(-3.53)	(-3.28)
Risk	0.064***	0.053***	0.056***	0.046***	0.041**	0.050***	0.069***	0.073***	0.064***
	(2.62)	(3.28)	(3.12)	(3.02)	(2.30)	(3.32)	(4.05)	(3.93)	(2.76)
UO_For.	0.202	-0.085	0.075						
	(1.06)	(-0.42)	(1.63)						
UO_LP				-0.036	-0.061**	-0.022			
				(-1.56)	(-2.14)	(-1.10)			
UO_FamE							0.044***	0.045***	0.037**
							(2.80)	(2.90)	(2.18)
Const.	1.161	3.744*	2.457***	3.241***	3.531***	2.902***	1.627***	1.530***	2.922***
	(0.68)	(1.88)	(5.89)	(9.91)	(8.67)	(11.67)	(3.01)	(2.71)	(7.30)
Obs.	1525	1525	1525	1525	1525	1525	1525	1525	1525
F-value	13.13	26.75	21.70	33.51	25.76	33.40	26.68	23.55	13.61
Within	4.44	9.16	7.26	11.56	8.73	11.64	8.81	7.69	4.52
p-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sargan	9.64	19.07	13.72	18.56	12.23	16.76	3.46	2.68	2.51
p-value	0.02	0.00	0.00	0.00	0.01	0.00	0.33	0.44	0.47

t-stat in parenthesis, *** significant at 10%; ** at 5%; * at 1% levels.

4.6   Conclusion

In financial theory relationship of firm performance with ownership structure and capital structure has been studied widely yet we have mixed conclusions only. Mostly, the relationship between ownership structure and firm value has been studied without considering possibility of their joint determination. This study adds to the existing literature in the following ways: one, it provides extensive coverage of ownership structure in three possible dimensions – direct ownership, ultimate ownership and ownership concentration; two, unlike recent studies, capital structure has been treated as an endogenous variable simultaneously with ownership structure by applying two-stage least squares instrumental variables estimation technique.

Applying DWH test, it has been empirically tested that capital and ownership structures are endogenous and that 2SLS-IV, as compared to OLS, is a better technique as it gives consistent and unbiased estimates. The results show factors like leverage, size of the firm, and liquidity have significant negative effect on firm performance.

The study finds that ownership structure, which is the focus of this study, affects the firm performance. The results show that insiders, both as direct shareholders and as the largest shareholders exert positive significant effect on firm value. This points towards convergence of interest when corporate management hold equity stakes in the firm directly and as the single largest owner. In contrast to insiders, associated firms, both as direct shareholders and as the single largest shareholder has damaging effect on firm value. Based upon these results it may be argued that such related firms act passively as regards monitoring of the managers is concerned and they may be misappropriating firm resources by voting for value decreasing projects. Similarly arguments may be presented for financial institutions as direct as well as the largest shareholder. Financial institutions are additionally handicapped by the statutory limits on their participation in the affairs of non-financial firms. Foreigner and state as direct as well as the largest shareholding have positive yet statistically insignificant impact on firm performance.

As regards ultimate ownership, results show that family control as ultimate owners is firm value enhancing at all threshold levels (10 percent, 25 percent and 50 percent of voting rights). In contrast government as ultimate owner affects firm performance negatively; however, the coefficient is statistically insignificant at all levels of voting thresholds. Foreigners as ultimate shareholders have nonlinear relation with firm value and, like for state control, the coefficient is statistically insignificant at all levels of voting thresholds.

Future research may be extended to financial institutions as well. Moreover, availability of adequate data on other aspects of corporate governance like board structure and activities, extent of financial disclosure and transparency would allow extending the analyses further.

Chapter 5

Summary

This thesis is an empirical investigation of equity ownership structure of Pakistani listed firms. In broader terms, the domain of this research is corporate governance. The dissertation includes three essays investigating the effects of equity ownership on (a) financing choices, (b) investment efficiency, and (c) overall firm performance. Equity ownership has been studied in three dimensions (i) direct ownership, (ii) ultimate ownership, and (iii) ownership concentration.

First essay investigates the impact of equity ownership structure on capital structure and the results show that equity holding by insiders is inversely related to debt ratio. This implies that managerial shareholdings work as a substitute to the disciplinary role of debt. Further explanation for this negative relation is that managers, as shareholders of the firm, extract private benefits of control and they avoid debt because it imposes discipline on free cash flows of the firm. Shareholdings by associated firms also affect debt ratio negatively which shows that related firms also avoid debt for the similar disciplinary reasons imposed by the debt contracts. Furthermore, they may be working as alternate source of funds for financing investee firms' projects. Shareholdings by financial institutions affect leverage ratio positively. In order to reduce information asymmetries and to exercise adequate control through alternative channels (as the debt holders) financial institutions benefit when investee firms acquire more debt. Ultimate ownership by family is associated with high debt ratio. It may be argued that families value control and use debt as a shield against takeover threats. Moreover, they may be using debt as signaling device to demonstrate their willingness to follow the disciplining role of debt.

In the second essay the impact of equity ownership structure on investment performance has been explored in terms of marginal Tobin's q. The results show that equity holdings

by insiders affect investment performance positively and this shows convergence of interest of managers with that of outside shareholders. An interesting finding is that shareholdings by the state affect investment performance negatively. This suggests that privatization of public corporations would add value to them. Family and foreigners as ultimate shareholders affect investment performance positively; however, the effects are statistically significant for 10 and 25 percent thresholds of voting rights only.

The third essay is about the relationship between ownership structure and average Tobin's q – a measure of overall firm performance. Empirical testing (DWH test) shows that ownership and leverage are endogenous to firm performance. Two-stage least squares instrumental variables regression technique has been applied to deal with endogeneity problem. Results in chapter four suggest that equity holdings by insiders are positively related to Tobin's q, indicating convergence of interests of managers and outside shareholders. The shareholdings by financial institutions are negatively related to firm performance which may be due to regulatory restrictions on financial institutions not to participate in day-to-day affairs of investee firms. Further, ownership stake of family as ultimate owner contributes to firm value at all levels of control thresholds.

The overall perspective of this thesis is that equity holdings by insiders align their interest with that of outside shareholders. The insiders seem to enjoy private benefits of control; nevertheless, they make value enhancing investment decisions and contribute toward firm performance. Furthermore, study shows that firms with families as ultimate owners prefer more debt, which it may be using to protect its control over firm against the takeover risk. Moreover, ultimate control of families adds value to the firm.

This study tries to fill the gaps in literature on corporate governance and industrial organization, especially in the context of a developing economy. Further inquiries in the same direction would potentially provide more evidence on the important role equity ownership structure plays in harnessing good governance environment. Future research in this rather neglected field would lend scholastic assistance to policy makers and regulators.

Bibliography

Agrawal, A., and Knoeber, C. R. (1996): "Firm performance and mechanisms to control agency problems between managers and shareholders", *Journal of Financial and Quantitative Analysis*, 31(3): 377-397.

Agarwal, A., and Nagarajan, J. N. (1990): "Corporate capital structure, agency costs and ownership control: The case study of all equity firms", *Journal of Finance*, XLV(4): 1325-1331.

Agarwal, S., and Ganguli, S. K. (2008): "Ownership structure and firm performance: An empirical study on listed Mid-cap Indian companies", Institute of Management and Technology, Working paper. http://ssrn.com/abstract=1260656

Alchian, A., and Demsetz, H. (1972): "Production, information costs, and economic organization", *American Economic Review*, 62: 777-795.

Al-Najjar, B., and Taylor, P. (2008): "The relationship between capital structure and ownership structure: New evidence from Jordanian panel data". *Managerial Finance*, 34 (12): 919-933

Amihud, Y., and Lev, B. (1981): "Risk reduction as a managerial motive for conglomerate mergers", *The Bell Journal of Economics*, 12(2): 605-617.

Antoniou, A., Guney, Y., and Paudyal, K. (2008): "The determinants of capital structure: Capital market oriented versus bank oriented institutions", *Journal of Financial and Quantitative Analysis*, 43(1): 59-92.

Arshad, F. C., Goergen, M., and Syed, S. I. (2006): "Corporate governance in the financial sector of Pakistan", CMER Working Paper No. 06-50. Lahore University of Management Sciences. www.lums.edu.pk

Arslan, O., and Karan, M. B. (2006): "Ownership and control structure as determinants of corporate debt maturity: A panel study of an emerging market", *Corporate Governance: An International Review,* 14(4): 312-324.

Auerbach, A. J., and Summers, L. H. (1979): "The investment tax credit: An evaluation", NBER Working Papers 0404.

Bajaj, M., Chan, Y., and Dasgupta, S. (1998): "The relationship between ownership, financing decisions and firm performance: A signaling model", *International Economic Review*, 39(3): 723-44.

Baker, M., Ruback, R. S., and Wurgler, J. (2007): "Behavioral corporate finance: A survey", Handbook in Corporate Finance: Empirical Corporate Finance. North-Holland. Elsevier.

Barclay, M. J., and Smith, C. W. (1995): "The maturity structure of corporate debt", *Journal of Finance*, 50(2): 609-631.

Barontini, R., and Caprio, L. (2005): "The effect of family control on firm value and performance. Evidence from continental Europe", ECGI - Finance Working Paper No. 88/2005.

Barro, R. J. (1991): "World interest rates and investment", NBER Working Papers 3849.

Bathala, C.T., Moon, K.P., and Rao, R.P. (1994): "Managerial ownership, debt policy and the impact of institutional shareholdings: An agency perspective", *Financial Management*, 23: 38-50.

Baxter, N. (1967): "Leverage risk of ruin and the cost of capital", *The Journal of Finance,* 22: 395-403.

Bebchukk, L. (1999): "A rent protection theory of corporate ownership and control", Working paper. Harvard University.

Bebchukk, L. (1999): "The evolution of ownership structure in publicly traded companies", Working paper. Harvard University.

Berger, A. N., and di Patti, E. B. (2006): "Capital structure and firm performance: A new approach to testing agency theory and an application to the banking industry", *Journal of Banking and Finance*, 30(4): 1065-1102.

Berger, P., Ofek, E., and Yermack, D. (1997): "Managerial entrenchment and capital structure decisions", *Journal of Finance*, 52: 1411-1438.

Berle, A. A., and Means, G. C. (1932): "The Modern Corporation and Private Property" New York: Macmillan.

Bhargava, A., Franzini, L. and Narendranathan, W. (1982): "Serial correlation and the fixed effects model", *Review of Economic Studies*, 49(4): 533-49.

Bianco, M., and Nicodano, G. (2006): "Pyramidal groups and debt", *European Economic Review,* 50: 927-967.

Bjuggren, P., Dzansi, J., and Palmberg, J. (2007): "Investment performance of Swedish listed family firms", JIBS, Working Paper, Center for Family Enterprise and Ownership, Jonkoping University.

Blair, M. M., and Stout, L. A. (2001): "Director Accountability and the mediating role of the corporate board", *Washington University Law Quarterly*, 79: 407-447.

Blundell, R., and Bond, S. (1998): "Initial conditions and moment restrictions in dynamic panel data models", *Journal of Econometrics*, 87: 115-143.

Bolton, P., Becht, M., and Roell, A. (2002): "Corporate governance and control", NBER Working Papers 9371.

Booth, L., Aivazian, V., Demirguc-Kunt, A., and Maksimovic, V. (2001): "Capital structure in developing countries", *The Journal of Finance*, 56: 87-130.

Bowman, R. (1980): "The importance of market-value measurement of debt in assessing leverage", Journal *of Accounting Research*, 18(1): 242-254.

Brailsford, T. J., Oliver, B. R., and Pua, S. L. H. (2002): "On the relation between ownership structure and capital structure", *Accounting and Finance*, 42: 1-26.

Burkart, M., and Panunzi, F. (2006): "Takeovers", CEPR Discussion Papers 5572.

Carlton, W.T., and Silberman, I. H. (1977): "Joint determination of rate of return and capital structure: An econometric analysis", *The Journal of Finance*, 32: 811-821.

Chaganti, R., and Damanpour, F. (1991): "Institutional ownership, capital structure and firm performance", *Strategic Management Journal*, 12: 479-493.

Cheema, A., and Bari, F. (2003): "Corporate governance in Pakistan in comparative analysis in India, Pakistan, Bangladesh and Sri Lanka", Study commissioned by Bangladesh Enterprise Institute and DFID, UK.

Chen, C., and Steiner, T. (1999): "Managerial ownership and agency conflicts: a nonlinear simultaneous equation analysis of managerial ownership, risk taking, debt policy, and dividend", *Financial Review*, 34: 119-36.

Chernykh, L. (2005): "Ultimate ownership and corporate performance in Russia", Doctoral dissertation, Drexel University. www.drexel.edu

Cho, M. H. (1998): "Ownership structure, investment, and the corporate value: An empirical analysis", *Journal of Financial Economics*, 47(1): 103-121.

Chou, S. R., and Lee, C. H. (2007): "The research on the effects of capital structure on firm performance and evidence from the non-financial industry of Taiwan 50 and Taiwan Mid-cap 100 from 1987 to 2007", Working paper, National Kaohsiung First University of Science and Technology.

Claessens, S., Djankov, S., Fan, J. P. H., and Lang, L. H. P. (1999): "Corporate diversification in East Asia : the role of ultimate ownership and group affiliation," Policy Research Working Paper Series 2089, The World Bank.

Claessens, S., Djankov, S., and Lang, L. H. P. (2000): "The separation of ownership and control in East Asian ccorporations", *Journal of Financial Economics*, 58(1-2): 81-112.

Claessens, S., Djankov, S., Fan, J. P. H., and Lang, L. H. P. (2002): "Disentangling the incentive and entrenchment effects of large shareholdings", *Journal of Finance*, 57(6): 2741-2771.

Claessens, S. (2003): "Corporate governance and development", Global Corporate Governance Forum, International Finance Corporation, The World Bank Group.

Claessens, S., Fan, J. P. H., and Lang, L. H. P. (2006): "The benefits and costs of group affiliation: evidence from East Asia" *Emerging Markets Review*, 7: 1-26.

Crespi, C. (1998): "Determinants of ownership structure: A panel data approach to the Spanish case", Working paper. Dep. Economia i Empresa, Universitat Illes Balears (UIB).

Crutchley, C. E., Jensen, M. R. H., Jahera, J. S., and Raymond, J. E. (1999): "Agency problems and the simultaneity of financial decision making: The role of institutional ownership", *International Review of Financial Analysis*, 8(2): 177-197.

Dalton, D., Daily, C., Ellstrand, A. and Johnson, J. (1998): "Meta-analytic reviews of board composition, leadership structure and financial performance", *Strategic Management Journal*, 19: 269-290.

Davidson, R., and MacKinnon, J. G. (1993): "Estimation and Inference in Econometrics", New York: Oxford University Press.

DeAngelo, H., and Masulis, R. W. (1980): "Optimal capital structure under corporate and personal taxation", *Journal of Financial Economics*, 35(1): 453–464.

De Jong, A., and Veld, C. (2001): "An empirical analysis of incremental capital structure decisions under managerial entrenchment", *Journal of Banking & Finance*, 25(10): 1857-1895.

Demsetz, H. (1983): "The structure of ownership and the theory of the firm", *Journal of Law and Economics*, 26: 375-390.

Demsetz, H., and Lehn, K. (1985): "The structure of corporate ownership: Causes and consequences", *Journal of Political Economy*, 93(6): 1155-1177.

Demsetz, H., and Villalonga, B. (2001): "Ownership structure and corporate performance", *Journal of Corporate Finance*, 7(3): 209-233.

Denis, D. K., and McConnell, J. J. (2003): "International corporate governance", *Journal of Financial and Quantitative Analysis.* 38: 1-36.

Dewenter, K. L., and Malatesta, P. H. (2001): "An empirical analysis of profitability, leverage, and labor intensity", *The American Economic Review*, 91(1): 320-334.

Driffield, N., Mahambare, V. and Pal, S. (2005): "How does ownership structure affect capital structure and firm performance? Recent evidence from East Asia", http://ideas.repec.org/p/bru/bruedp/06-23.html

Du, J., and Dai, Y. (2005): "Ultimate corporate ownership structures and capital structures: Evidence from East Asian economies", *Corporate Governance: An International Review.* 13(1): 60-71.

Easterbrook, F. H. (1984): "Two agency-cost explanations of dividends", *American Economic Review,* 74: 650-659.

Faccio, M., Lang, L. H. P., and Young, L. (2001): "Dividends and expropriation", *American Economic Review*, 91: 54-78.

Fama, E. F. (1980): "Agency problems and the theory of the firm", *Journal of Political Economy*, 88 (21): 288-307.

Fama, E. F., and Jensen, M. C. (1983): "Separation of ownership and control", *Law and Economics*, 26: 301-325.

Flannery, M., and Rangan, K. (2006): "Partial adjustment toward target capital structures", *Journal of Financial Economics*, 79: 469-506.

Friend, I., and Lang, L. H. P. (1988): "An empirical test of the impact of managerial self-interest on corporate capital structure", *The Journal of Finance*, 43(2): 271-281.

Fischer, E. O., Heinkel, R., and Zechner, J. (1989): "Dynamic capital structure choice: Theory and tests", *Journal of Finance,* 44(1): 19-40.

Gavish, B., and Kalay, A. (1983): "On the asset substitution problem", *Journal of Financial and Quantitative Analysis,* 18: 21-30.

Gedajlovic, E., and Shapiro, D. (2002): "Ownership and firm profitability in Japan", *Academy of Management Journal*, 45(3): 575-585.

Gedajlovic, E., Yoshikawa, T., and Hashimoto, M. (2005): "Ownership structure, corporate strategy and firm performance in Japanese manufacturing industries", *Organization Studies*, 31: 271-300.

Gordon, R. H., and Li, W. (2003): "Government as a discriminating monopolist in the financial market: The case of China", *Journal of Public,* 87(2): 283-312.

Grier, P., and Zychowicz, E.J. (1994): "Institutional investors, corporate discipline and the role of debt", *Journal of Economics and Business*, 46: 1-11.

Grossman, S. J., and Hart, O. D. (1980): "Takeover bids, the free-rider problem, and the theory of the corporation". *The Bell Journal of Economics*, 11(1): 42-64.

Gugler, K., and Yurtoglu, B. B. (2003): "Average Q, marginal Q, and the relation between ownership and performance", *Economics Letters,* 78(3): 379-384.

Gugler, K., Mueller, D. C., and Yurtoglu, B. B., (2008): "Insider ownership, ownership concentration and investment performance: An international comparison", *Journal of Corporate Finance,* 14 (5): 688-705.

Hamid, H. H., and Kozhich, V. (2007): "Corporate governance in an emerging market: A perspective on Pakistan", *Journal of Legal Technology Risk Management*, 1(1): 22-33.

Hasan, A., and Ali, S. B. (2009): "Impact of ownership and corporate governance on capital structure of Pakistani listed firms", *International Journal of Business and Management*, 4(2): 50-57.

Harris, M., and Raviv, A. (1988): "Corporate control contests and capital structure", *Journal of Financial Economics,* 20: 55-86.

_____ (1990): "Capital structure and the informational role of debt", *Journal of Finance,* 45: 321-349.

_____ (1991): "The theory of capital structure", *Journal of Finance,* 46: 297-355.

Hayashi, F. (1982): "Tobin's marginal q and average q: A Neoclassical interpretation", *Econometrica*, 50(1):213-224.

Heinrich, R. P. (2002): "Complementarities in Corporate Governance", Springer.

Hermalin, B. E., and Weisbach, M. S. (1991): "The effects of board composition and direct incentives on firm performance", *Financial Management*, 20(4): 101-112.

Hermalin, B. E., and Weisbach, M. S. (2003): "Boards of directors as an endogenously determined institution: A survey of the economic literature", *Economic Policy Review,* Federal Reserve Bank of New York, 7-26.

Holderness, C. G., Kroszner, R. S., and Sheehan, D. P. (1999): "Were the good old days that good? Evolution of managerial stock ownership and corporate governance since the great depression", *Journal of Finance*, 54(2): 435-469.

Ibrahim, A. A. (2006): "Corporate governance in Pakistan: Analyses of current challenges and recommendations for future reforms", *Washington University Global Studies Law Review*, 5: 323-331.

Javid, A.Y., and Iqbal, R. (2007): "The relationship between corporate governance indicators and firm value: A case study of Karachi stock exchange", Working Paper, Pakistan Institute of Development Economics. www.pide.org.pk

Jensen, M. C. (1986): "Agency cost of free cash flows, corporate finance and takeovers", *American Economic Review*, 76(2): 323-329.

_____ (1993): "The modern industrial revolution, exit, and the failure of internal control systems", *Journal of Finance*, 48: 831-880.

Jensen, M. C., and Meckling, W. H. (1976): "Theory of the firm: Managerial behavior, agency costs and ownership structure", *Journal of Financial Economics*, 3(4): 305-360.

Jensen, G. R., Solberg, D. P., and Zorn, T. S. (1992): "Simultaneous determination of insider ownership, debt and dividend policies", *Journal of Financial and Quantitative Analysis,* 247-263.

Johan E. E., Johanna P., and Daniel W. (2009): "Ownership structure, board composition and investment performance", The Royal Institute of technology. Centre of Excellence for Science and Innovation Studies. CESIS Electronic Working Paper Series. Paper No. 172. http://www.cesis.se

Johnson, S., La Porta, R., Lypez-de-Silanes, F., Shleifer, A., and Vishny., R. (2000): "Tunnelling", *American Economic Review*, 90(2): 22-27.

Kapopoulos, P., and Lazaretou, S. (2007): "Corporate ownership structure and firm performance: evidence from Greek firms", *Corporate Governance: An International Review,* 15(2): 144-158.

Khalid, A. M., and Hanif, M. N. (2005): "Corporate governance for banks in Pakistan: Recent developments and regional comparisons", CMER Working paper No. 05-42, Lahore University of Management Sciences. www.lums.edu.pk

Khawaja, A., and Mian, A. R. (2005): "Do lenders favour politically connected firms? Rent provision in an emerging financial market", *Quarterly Journal of Economics*. 120(4): 1371-1411.

Lamba, A., and Stapledon, G. (2001): „The determinants of corporate ownership structure: Australian evidence", Working paper no. 20, Faculty of Law, The University of Melbourne.

La Porta, R., Lopez-de-Silanes, F., Shleifer A., and Vishny R. W. (1997): "Legal determinants of external finance", *The Journal of Finance*, 52(3): 1131-1150.

_____ (1998): "Law and finance", *Journal of Political Economy*, 106(6): 1113-1155.

La Porta, R., Lopez-de-Silanes, F., and Shleifer, A. (1999): "Corporate ownership around the world", *The Journal of Finance*, 54: 471-518.

Lee, S. M., and Ryu, K. (2003): "Management ownership and firm's value", Working paper, Osaka University.

Leech, D., and J. Leahy (1991): "Ownership structure, control type classifications, and the performance of large British companies", *The Economic Journal,* 101: 1418-1437.

Leland, H. E., and Pyle., D. H. (1977): "Informational asymmetries, financial structure, and financial intermediation", *Journal of Finance,* 32: 371-387.

Levine, R., and Renelt, D. (1992): "A sensitivity analysis of cross-country growth regressions", *American Economic Review,* 82(4): 942-963.

Li, K., Yue, H., and Zhao, L. (2007): "Ownership, institutions, and capital structure: Evidence from China". http://ssrn.com/abstract=891529.

Loderer, C., and Martin, K. (1997): "Executive stock ownership and performance tracking faint traces", *Journal of Financial Economics*, 45(2): 223-255.

Lucas, D. J., and McDonald, R. L. (1990): "Equity issues and stock price dynamics", *Journal of Finance,* 45(4): 1019-1043.

Mahrt-Smith, J. (2005): "The interaction of capital structure and ownership dispersion", *The Journal of Business,* 78(3): 787-816.

Makhija, A., and Spiro, M. (2000): "Ownership structure as a determinant of firm value: Evidence from newly privatized Czech firms", *Financial Review*, 35(3): 1-31.

Manos, R., Murinde, V., and Green, C. J. (2007): "Leverage and business groups: evidence from Indian firms", *Journal of Economics and Business*, 59: 443-465.

McConnell, J. J., and Servaes, H. (1990): "Additional evidence on equity ownership and corporate value", *Journal of Financial Economics*, 27(2): 595-612.

_____ (1995): "Equity ownership and the two faces of debt", *Journal of Financial Economics*, 39: 131-157.

Mehran, H., (1992): "Executive incentive plans, corporate control, and capital structure", *Journal of Financial and Quantitative Analysis,* 27: 539-560.

_____ 1995): "Executive compensation structure, ownership, and firm performance", *Journal of Financial Economics*, 38(2): 163-184.

Miller, M. (1977): "Debt and taxes", *The Journal of Finance*, 32(2): 261-275.

Modigliani, F., and Miller, M. (1958): "The cost of capital, corporation finance, and the theory of investment", *American Economic Review*, 48(3): 261-297.

_____ (1963): "Corporate income taxes and the cost of capital: A correction", *American Economic Review*, 53(3): 433-443.

Monsen, J. R., John, S. C., and David, E. C. (1968): "The effect of separation of ownership and control on the performance of the large firm", *Quarterly Journal of Economics*, 435-451.

Morck, R., Shleifer, A., and Vishny, R. W. (1988): "Management ownership and market valuation: An empirical analysis", *Journal of Financial Economics*, 20: 293-315.

Mueller, D. and Reardon, E. (1993): "Rates of Return on Corporate Investment", *Southern Economic Journal,* 60: 430-453.

Mueller, E. (2008): "Private benefits of control, capital structure and company growth", *Applied Economics*, 40(21): 2721-2734.

Myers, S. C. (1977): "Determinants of corporate borrowing", *Journal of financial Economics*, 5: 147-175.

_____ (2001): "Capital structure", *The Journal of Economic Perspective*, 15(2): 81-102.

Myers, C., and Majluf, N. S. (1984): "Corporate financing and investment decisions when firms have information the investors do not have", *Journal of Financial Economics*, 13(2): 187-221.

Nenova, T. (2003): "The value of corporate voting rights and control: A cross-country analysis", *Journal of Financial Economics,* 63: 325–351.

Paligorova, T., and Xu, Z. (2009): "Complex ownership structure", Bank of Canada, Working Paper 2009-12.

Paolo, F. V. (2002): "Governance with poor investor protection: Evidence from top executive turnover in Italy", *Journal of Financial Economics,* 64: 61-90.

Prasad, S. B., and Graham, M. (2008): "Institutional ownership and firm performance: evidence from Finland", SAEF Working paper, Deakin University, Melbourne, Australia.

Randøy T., Thomsen, S., and Oxelheim L. (2006): " A Nordic perspective on corporate board diversity", Nordon, Nordic Innovation Centre, Project number: 05030.

Rajan, R., and Zingales, L. (1995): "What do we know about capital structure? Some evidence from international data", *The Journal of Finance*, 50: 1421-1460.

Ross, A. S. (1977): "The determinants of financial structure: The incentive signaling approach" *The Bell Journal of Economics*, 8(1): 23-40.

Rozeff, M. S. (1982): "Growth, beta and agency costs as determinants of dividend payout ratios", *Journal of Financial Research*, 5: 249-259.

Sapienza, P. (2004): "The effects of government ownership on bank lending", *Journal of Financial Economics*, 72(2): 357-384.

Sargan, J. (1958): "The estimation of economic relationships using instrumental variables",. *Econometrica*, 26(3): 393-415.

Seetharaman, A., Swanson, Z.L., and Srinidhi, B. (2001): "Analytical and empirical evidence of the impact of tax rates on the trade-off between debt and managerial ownership", *Journal of Accounting, Auditing & Finance*, 16: 249– 272.

Shah, A., and Hijazi, T. (2004): "The determinants of capital structure of stock exchange-listed non-financial firms in Pakistan", *Pakistan Development Review*, 43: 605-618.

Shah, A., and Khan, S. (2007): "Determinants of capital structure: Evidence from Pakistani panel data", International *Review of Business Research Papers*, 3(4): 265-282.

Shleifer, A., and Vishney, R. W. (1986): "Large shareholder and corporate control", *Journal of Political Economy*, 94(3): 461-488.

_____ (1997): "A survey of corporate governance", *The Journal of Finance*, 52(2): 737-783.

Shome, D., and Singh, S. (1995): "Firm value and external blockholdings", *Financial Management,* 24: 3-14.

Short, H., and Keasey, K. (1999): "Managerial ownership and the performance of firm: evidence from the UK", *Journal of Corporate Finance*, 5: 79-101.

Smith, A. (1776): "An Inquiry into the Nature and Causes of the Wealth of Nations", Methuen and Co., Ltd.

Smith, C., and Warner, J. (1979): "On financial contracting: an analysis of bond covenants", *The Journal of Financial Economics*, 7: 117-161.

Stenbacka, R., and Tombak, M. (2002): "Investment, capital structure, and complementarities between debt and new equity", *Management Science,* 48(2): 257-272.

Stulz, R. M. (1988): "Managerial control of voting rights: Financing policies and the market for corporate control", *Journal of Financial Economics*, 20(1-2): 25-54.

Stulz, R. M. and Johnson, H. (1985): "An analysis of secured debt", *Journal of Financial Economics*, 14(4): 501-521.

Titman, S., and Wessels, R. (1988): "The determinants of capital structure choice", *The Journal of Finance*, 60(1): 97-112.

Tsai, H. and Gu, Z. (2007): "Institutional ownership and firm performance: Empirical evidence from U.S. based publicly traded restaurant firms", *Journal of Hospitality and Tourism Research*, 31 (1): 19-38.

Useem, M. (1998): "Corporate leadership in a globalizing equity market", *Academy of Management Executive*, 12(4): 43-59.

Walsh, J.P., and Seward, J.K. (1990): "On the efficiency of internal and external corporate control mechanisms", *Academy of Management Review*, 15(3): 201-217.

Whitley, R., and Czaban, L. (1998): "Institutional transformation and enterprise change in an emergent capitalist economy: the case of Hungry", *Organization Studies*, 19(2): 259-280.

Wooldridge, J. M. (2003): "Introductory Econometrics: A Modern Approach", Mason, OH:South-Western.

Zeitun, R., and Tian, G. G. (2007): "Does ownership affect a firm's performance and default risk in Jordan?", *Corporate Governance* 7(1): 66-82.

Appendix

Appendix to Chapter 2 (Ownership and Capital Structure)

Appendix A2.1: Percentile plots
(Direct ownership)

The following figure shows percentile plot of shareholding by the mutually exclusive categories of direct shareholders.
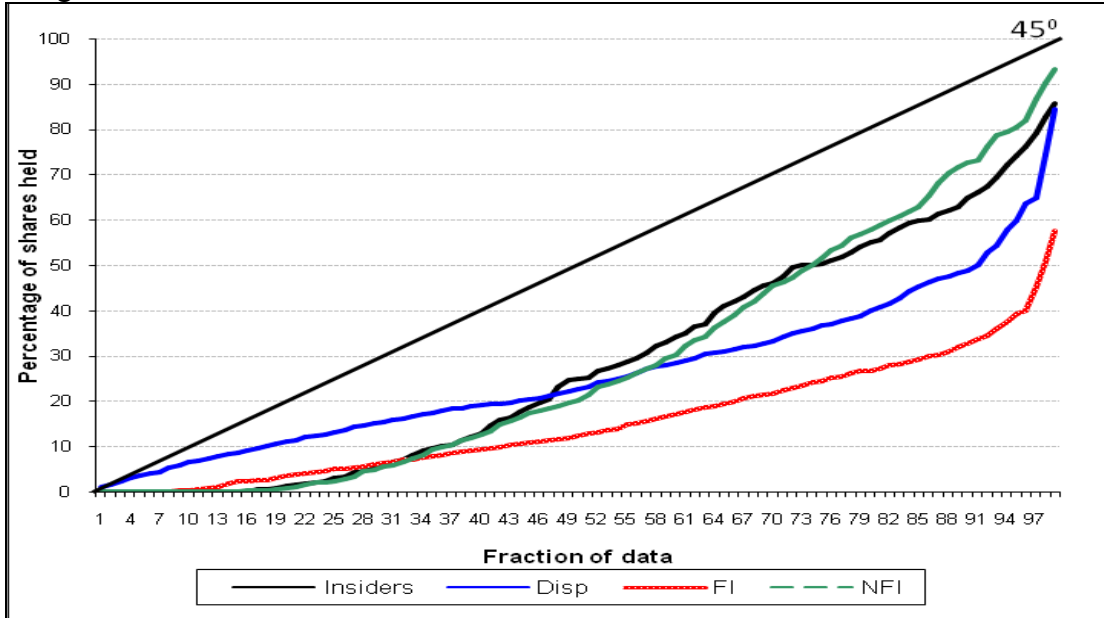
(Ownership concentration)

The following figure shows percentile plot of shareholding by the largest shareholder and shareholding by three (five) largest shareholders.
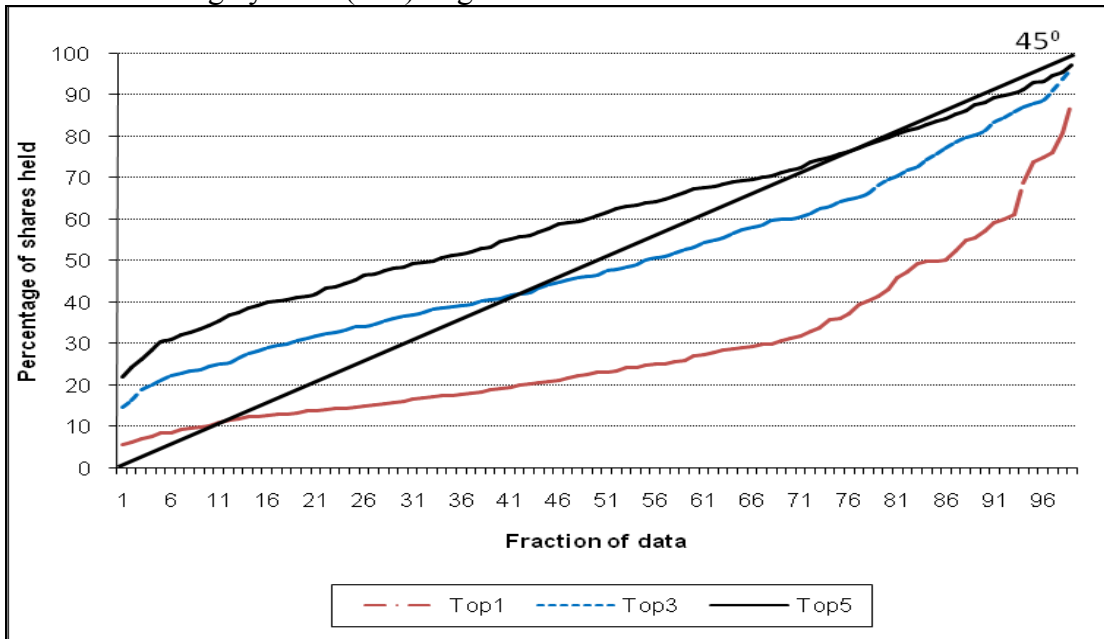
Appendix to Chapter 2 (Ownership and Capital Structure)

Appendix A2.2: Tables of deciles

The following table shows deciles of different types of direct owners, ownership concentration and ultimate owners. Abbreviations: FI = financial institutions, NFI = non-financial institutions, Govt.= government, Dispersed = dispersed individuals, Top1 = The largest owner, Top3 (5) = sum of shareholding by the three (five) shareholders, CFR = Cash flow Rights, and VR = Voting rights.

Deciles	D10	D20	D30	D40	D50	D60	D70	D80	D90
Direct Ownership									
Insiders	0.00	1.35	5.50	12.95	25.00	34.20	46.00	55.00	65.00
Associates	0.00	0.00	0.00	0.00	1.59	10.87	20.99	32.85	50.10
Group	3.13	24.80	33.58	41.28	47.30	51.60	57.29	63.96	74.07
FI	0.40	3.70	6.40	9.30	12.40	17.25	21.80	26.80	32.80
NFI	0.00	0.80	5.60	12.75	20.10	30.30	45.50	57.90	72.60
Foreign	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.10	34.10
Govt.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.20
Dispersed	6.70	11.15	15.50	19.15	22.70	28.50	33.20	39.96	48.80
Individuals	12.70	22.20	33.20	46.25	59.40	69.90	77.70	85.95	94.40
Institutions	5.60	14.05	22.30	30.10	40.60	53.75	66.80	77.80	87.30
Ownership concentration									
Top1	10.28	13.75	16.24	19.28	23.04	27.05	31.40	43.19	57.22
Top3	24.58	31.35	36.67	41.03	46.60	53.32	60.17	69.65	81.34
Top5	34.51	41.59	48.53	54.64	60.79	67.27	71.79	79.71	88.22
Ultimate ownership (without mention of type of ultimate owner)									
CFR	21.98	30.80	38.30	42.52	48.27	52.50	59.60	67.25	76.10
VR	26.70	34.54	41.70	46.00	50.70	54.51	60.46	68.45	77.17

Appendix to Chapter 2 (Ownership and Capital Structure)

A2.3: Correlation Matrix (Firm specific variables, direct ownership)

	Lev.	ln(s)	Tang.	M/B	RoE	Risk	DPO	Ndts	Insid.	Asso.	Group	FI	NFI	For.	GoP	Disp.	Inst.	Ind.
Lev.	1.000																	
ln(s)	-0.301	1.000																
Tang.	0.366	-0.245	1.000															
M/B	-0.391	0.266	-0.183	1.000														
RoE	-0.138	0.111	-0.124	-0.295	1.000													
Risk	-0.366	0.444	-0.083	0.253	0.082	1.000												
DPO	-0.252	0.214	-0.108	0.108	0.062	0.128	1.000											
Ndts	0.031	0.016	0.223	-0.032	-0.010	-0.001	0.034	1.000										
Insid.	0.176	-0.280	0.227	-0.159	-0.032	-0.254	-0.048	0.038	1.000									
Asso.	-0.087	0.107	-0.107	0.037	0.004	0.021	0.012	0.000	-0.501	1.000								
Group	0.113	-0.207	0.151	-0.139	-0.031	-0.257	-0.042	0.041	0.637	0.348	1.000							
FI	0.026	0.068	0.044	-0.010	0.009	0.087	0.016	-0.007	-0.288	0.003	-0.309	1.000						
NFI	-0.346	0.353	-0.266	0.221	0.086	0.335	0.103	-0.031	-0.725	0.608	-0.244	-0.068	1.000					
For.	-0.335	0.273	-0.270	0.252	0.094	0.211	0.128	-0.059	-0.324	-0.118	-0.456	-0.109	0.535	1.000				
GoP	-0.081	0.166	-0.033	0.077	0.035	0.369	0.022	0.030	-0.191	-0.082	-0.279	-0.026	0.307	-0.056	1.000			
Disp.	0.264	-0.197	0.056	-0.109	-0.094	-0.218	-0.102	-0.001	-0.097	-0.227	-0.308	-0.209	-0.460	-0.284	-0.183	1.000		
Inst.	-0.310	0.358	-0.229	0.202	0.084	0.349	0.103	-0.033	-0.801	0.567	-0.362	0.375	0.899	0.450	0.274	-0.517	1.000	
Ind.	0.310	-0.358	0.229	-0.202	-0.084	-0.349	-0.103	0.033	0.801	-0.567	0.362	-0.375	-0.899	-0.450	-0.274	0.517	-1.000	1.000

1) Upper block includes firm specific variables, and lower block includes ownership categories.
2) Abbreviations used: Lev. = leverage, ln(s) log of sales, Tang.= Asset tangibility, M/B=Market to book ratio, RoE = Return on equity, Risk = Standard deviation of last four years market value of common stock, DPO = Dividend payout, Ndts = Non-debt tax shield, Insid. = Insiders (Managers, Directors and Family members), Asso. = Associated Firms, Group = Insiders + Asso., FI = Financial Institutions, NFI = Non-Financial Institutions, For. = Foreigners, GoP = Government of Pakistan, Disp. = Dispersed shareholders, Inst. = Institutions, and Ind. = Individuals

Appendix to Chapter 3 (Ownership and Investment Efficiency)

A3.1: Correlation Matrix (Firm specific variables)

	M_t	I_t	$\dfrac{M_t - M_{t-1}}{M_{t-1}}$	$\dfrac{I_t}{M_{t-1}}$
M_t	1.000			
I_t	0.740	1.000		
$\dfrac{M_t - M_{t-1}}{M_{t-1}}$	-0.009	0.191	1.000	
$\dfrac{I_t}{M_{t-1}}$	-0.029	0.224	0.722	1.000

Abbreviations used: M_t = Market value in current period, I_t = Investment in current period, $\dfrac{M_t - M_{t-1}}{M_{t-1}}$ = Growth rate of market value, $\dfrac{I_t}{M_{t-1}}$ = Current investment to market value (lagged by one period) ratio.

Appendix to Chapter 3 (Ownership and Investment Efficiency)

A3.2: Model Specification Test (Model: $grmv_{i,t} = Xb + u_i + e_{i,t}$)

The following table shows models specification test for above equation. Results show that the fixed effects model is the most appropriate model for estimating marginal Tobin's q. (grmv is growth rate of market value.)

Test	Statistics		Remark
RE vs OLS			
Breusch and Pagan LM Test	chi2(1)	32.76	RE better than OLS
H_0: Var(u) = 0	P-value	0.00	
FE vs OLS			
F (Chow test) for data pooling.	F(305, 1223)	1.61	FE better than OLS
F test: H_0:u_i=0	P-value	0.00	
Hausman Test: FE vs RE			
H_0: Difference in FE and RE coefficients is not systematic	chi2(1)	14.60	FE better than RE
	P-value	0.00	

A3.3: Ownership concentration and investment performance

This table presents effect of shareholding by top three (five) shareholders on the investment performance for 10, 25 and 50 percent threshold of voting rights. The results show that coefficient of the all interaction terms are statistically insignificant, except for sum of top five shareholders at 25 percent threshold level.

	Top3			Top5		
	(1)	(2)	(3)	(4)	(5)	(6)
x2imvl	0.803***	0.716***	0.818***	0.799***	0.555***	0.788***
	(38.42)	(10.89)	(28.59)	(38.45)	(4.28)	(32.26)
Top3_10	-0.027					
	(-1.00)					
Top3_25		0.091				
		(1.34)				
Top3_50			-0.001			
			(-0.95)			
Top5_10				0.023		
				(0.53)		
Top5_25					0.250*	
					(1.91)	
Top5_50						0.001
						(0.93)
Constant	1.315	1.350	1.351	1.331	1.315	1.381
	(1.55)	(1.60)	(1.60)	(1.57)	(1.56)	(1.63)
Obs.	1527	1527	1527	1527	1527	1527
R^2	0.55	0.55	0.55	0.55	0.55	0.55
Firms	306	306	306	306	306	306
F-value	747.28	748.17	747.18	746.49	750.23	747.13
Within	1.609	1.600	1.537	1.611	1.621	1.609

t-stat in parenthesis, *** significant at 10%; ** at 5%; * at 1% levels

Appendix to Chapter 4 (Ownership and Firm Performance)

A 4.1: Correlation Matrix (Firm specific variables)

Abbreviations: Tobin's q = Measure of firm performance, Lev. = leverage, ln(a) log of assets, Tang.= Asset tangibility, QR = Quick ratio, Risk = Standard deviation of last four years market value of common stock, M/B=Market to book ratio, ETR = Effective tax rate, ATO= Assets turnover, DPO = Dividend payout, and Ndts = Non-debt tax shield,

	Tobin's	Lev.	ln(a)	Tang.	QR	Risk	M/B	ETR	ATO	DPO	Ndts
Tobin's	1.000										
Lev.	-0.151	1.000									
ln(a)	-0.141	-0.197	1.000								
Tang.	0.066	0.366	-0.076	1.000							
QR	-0.157	-0.460	0.043	-0.389	1.000						
Risk	0.191	-0.366	0.548	-0.083	0.095	1.000					
M/B	0.238	-0.293	0.052	-0.133	0.007	0.220	1.000				
ETR	-0.006	-0.027	0.010	-0.028	0.007	0.002	-0.009	1.000			
ATO	0.169	-0.349	-0.004	-0.362	0.018	0.111	0.153	0.038	1.000		
DPO	0.008	-0.252	0.172	-0.108	0.081	0.128	0.037	0.164	0.119	1.000	
Ndts	0.017	0.031	-0.037	0.223	-0.093	-0.001	-0.007	-0.016	0.033	0.034	1.000

A4.2: Direct Ownership (Testing Endogeneity - 2nd Stage DWH Results)

$$Q_a = \lambda_i + \theta_m.W + \lambda_1.(\omega_{i,t}) + \lambda_2.(\tau_{i,t}^j) + \psi_{i,t}$$

(1) This table reports regression results of second stage of the DWH test for testing endogeneity. Residuals **(Ω and τ)** for leverage and ownership respectively) estimated from the first stage are used in the second stage of the DWH test and table shows that residuals are statistically significant for 10 out of 12 equations. Therefore, it may be argued that leverage and ownership variables are endogenous to Tobin's q.

(2) Abbreviations: log of assets (ln(a)), asset tangibility (Tang.), quick ratio (QR), firm risk (Risk). And Leverage (Lev.). Types of direct owner (j) include: Insider, Associated Firms (AF), Group (Insiders + Associated firm), Financial Institutions (FI), Foreigner (For.) and State (Government of Pakistan).

	(1) Insider	(2) AF	(3) Group	(4) FI	(5) For.	(6) State
ln(a)	-0.266***	-0.056**	-0.207***	-0.166***	-0.179***	0.548***
	(-5.76)	(-2.28)	(-4.30)	(-2.75)	(-4.94)	(4.60)
Tang.	-0.003***	-0.001	-0.003***	-0.002	0.003**	-0.005***
	(-2.97)	(-1.29)	(-3.15)	(-1.50)	-2.01	(-4.33)
QR	-0.077***	-0.096***	-0.090***	-0.087***	-0.080***	0.00
	(-5.32)	(-6.87)	(-6.33)	(-5.44)	(-5.44)	(0.01)
Risk	0.069***	0.061***	0.060***	0.082***	0.109***	0.189***
	(5.58)	(4.92)	(4.90)	(4.32)	(6.22)	(6.71)
Lev.	-0.014***	-0.022***	-0.011***	-0.008	-0.012***	-0.013***
	(-5.03)	(-6.88)	(-3.60)	(-1.52)	(-4.29)	(-4.90)
Insid.	0.068***					
	(5.12)					
AF		-0.056***				
		(-2.63)				
Group			0.046***			
			(3.44)			
FI				-0.040*		
				(-1.84)		
For.					0.159***	
					(4.22)	
State						0.562***
						(5.24)
Ω	0.007**	0.015***	0.005	0.002	0.006*	0.007**
	(2.56)	(4.66)	(1.50)	(0.30)	(1.93)	(2.31)
τ-Insid.	-0.067***					
	(-5.07)					
τ-AF		0.056***				
		(2.62)				
τ-Group			-0.045***			
			(-3.39)			
τ-FI				0.043**		
				(1.99)		
τ-For.					-0.167***	
					(-4.44)	
τ-State						-0.545***
						(-5.08)
Const.	2.143***	3.950***	1.547***	3.584***	1.791***	-2.979***
	(8.31)	(8.81)	(3.44)	(8.48)	(5.31)	(-2.61)
R^2	0.24	0.23	0.23	0.23	0.25	0.27
F-value	47.44	44.32	45.13	44.41	49.26	54.69
Within	15.909	15.797	15.71	15.62	16.049	16.55

t-stat in parenthesis, *** significant at 10%; ** at 5%; * at 1% levels.

A4.3: The Largest Owner (Testing Endogeneity -2nd Stage DWH Results)

$$Q_a = \lambda_i + \theta_m.W + \lambda_1.(\omega_{i,t}) + \lambda_2.(\tau_{i,t}^j) + \psi_{i,t}$$

(1) This table reports regression results of second stage of the DWH test for testing endogeneity. Residuals (ω and τ) for leverage and ownership respectively) estimated from the first stage are used in the second stage of the DWH test and table shows that residuals are statistically significant for 11 out of 12 equations. Therefore, it may be argued that leverage and ownership variables are endogenous to Tobin's q.
(2) Abbreviations: Leverage (Lev), log of assets (ln(a)), asset tangibility (Tang.), quick ratio (QR), and firm risk. Types of the largest owner (T1) (j) include: Insider, Associated Firms (AF), Financial Institutions (FI), Foreigner (For.) and State (Government of Pakistan).

	(1) T1	(2) T1_Insid	(3) T1_AF	(4) T1_FI	(5) T1_For	(6) T1_State
ln(a)	-0.049*	-0.250***	-0.048*	-0.206***	0.069*	-0.051**
	(-1.66)	(-5.12)	(-1.87)	(-6.05)	(1.87)	(-2.06)
Tang.	-0.002**	-0.003***	-0.001	-0.004***	0.014***	-0.002**
	(-2.25)	(-2.99)	(-1.28)	(-3.99)	(3.94)	(-2.20)
QR	-0.104***	-0.112***	-0.118***	-0.101***	-0.162***	-0.101***
	(-7.41)	(-8.01)	(-7.43)	(-7.42)	(-8.68)	(-7.32)
Risk	0.054***	0.069***	0.053***	0.062***	0.030**	0.052***
	(4.39)	(5.54)	(4.36)	(5.18)	(2.32)	(4.30)
Lev.	-0.018***	-0.013***	-0.019***	-0.014***	-0.025***	-0.019***
	(-6.40)	(-4.67)	(-6.74)	(-5.31)	(-8.02)	(-6.86)
T1	-0.010					
	(-0.85)					
T1-Insid		0.075***				
		(4.38)				
T1-AF			-0.035**			
			(-2.03)			
T1-FI				-0.120***		
				(-5.85)		
T1-For.					0.418***	
					(4.75)	
T1-State						0.319**
						(2.33)
ω	0.012***	0.007**	0.013***	0.008***	0.018***	0.013***
	(3.96)	(2.28)	(4.32)	(2.77)	(5.75)	(4.36)
τ-T1	0.012					
	(0.96)					
τ-T1-Insid		-0.074***				
		(-4.34)				
τ-T1-AF			0.033*			
			(1.90)			
τ-T1-FI				0.125***		
				(5.99)		
τ-T1-For.					-0.417***	
					(-4.74)	
τ-T1-State						-0.308**
						(-2.25)
Const.	3.167***	3.343***	3.239***	4.209***	-0.613	2.249***
	(8.61)	(14.38)	(12.15)	(13.80)	(-0.79)	(6.35)
R²	0.22	0.23	0.23	0.24	0.24	0.23
F-value	43.48	46.30	44.02	49.05	46.85	44.83
Within	15.397	15.814	15.762	16.015	15.710	15.608

t-stat in parenthesis, *** significant at 10%; ** at 5%; * at 1% levels.

A4.4: Ultimate Ownership (Testing Endogeneity - 2nd Stage DWH Results)

$$Q_a = \lambda_i + \theta_m.W + \lambda_1.(\omega_{i,t}) + \lambda_2.(\tau_{i,t}^j) + \psi_{i,t}$$

(1) This table reports regression results of second stage of the DWH test for testing endogeneity. Residuals (ω and τ) for leverage and ownership respectively) estimated from the first stage are used in the second stage of the DWH test and table shows that residuals are statistically significant for all 12 equations. Therefore, it may be argued that leverage and ownership variables are endogenous to Tobin's q.

(2) Abbreviations: log of assets (ln(a)), asset tangibility (Tang.), quick ratio (QR), firm risk (Risk), and Leverage (Lev.). Types of ultimate owner (UO) (j) include: Family (Fam.), Foreigner (For.), Legal person (LP), State (Government of Pakistan) and Extended definition of family (FamE = Fam + LP).

	(1) UO	(2) UO-Fam	(3) UO-For.	(4) UO-LP	(5) UO-State	(6) UO-FamE
ln(a)	-0.198***	-0.189***	-0.101***	-0.043	-0.023	-0.168***
	(-4.50)	(-5.63)	(-3.30)	(-1.61)	(-0.82)	(-4.53)
Tang.	-0.000	-0.001	0.008	-0.001	-0.003***	-0.003**
	(-0.17)	(-1.32)	(1.53)	(-1.16)	(-3.06)	(-2.56)
QR	-0.087***	-0.083***	-0.090***	-0.107***	-0.079***	-0.085***
	(-6.03)	(-5.89)	(-5.96)	(-7.60)	(-4.95)	(-5.81)
Risk	0.069***	0.060***	0.064***	0.047***	0.068***	0.068***
	(5.42)	(5.01)	(4.93)	(3.62)	(5.26)	(5.40)
Lev.	-0.012***	-0.016***	-0.018***	-0.020***	-0.020***	-0.013***
	(-4.19)	(-6.19)	(-6.57)	(-6.53)	(-7.04)	(-4.53)
UO	0.044***					
	(3.64)					
UO-Fam		0.068***				
		(5.33)				
UO-For.			0.202**			
			(1.99)			
UO-LP				-0.038*		
				(-1.95)		
UO-State					-0.472***	
					(-2.93)	
UO-FamE						0.043***
						(3.69)
ω	0.006*	0.010***	0.011***	0.014***	0.013***	0.007**
	(1.96)	(3.60)	(3.98)	(4.33)	(4.54)	(2.22)
τ-UO	-0.043***					
	(-3.54)					
τ-UO-Fam		-0.067***				
		(-5.21)				
τ-UO-For.			-0.202**			
			(-1.98)			
τ-UO-LP				0.043**		
				(2.15)		
τ-UO-State					0.477***	
					(2.96)	
τ-UO-FamE						-0.042***
						(-3.52)
Constant	1.131**	1.534***	1.161	3.254***	4.240***	1.637***
	(2.12)	(4.62)	(1.28)	(11.81)	(8.46)	(4.05)
R²	0.23	0.24	0.22	0.23	0.23	0.23
F-value	45.46	47.85	43.85	44.13	44.71	45.63
Within	15.624	15.919	15.434	15.676	15.660	15.526

t-stat in parenthesis, *** significant at 10%; ** at 5%; * at 1% levels.

A4.5: Direct Ownership and Firm Performance: 2SLS 1st stage results
(Dependent variable: Ownership)

(1) The following table shows results of the first stage of the 2SLS regression.
(2) Abbreviations: Insid. = Insiders (Managers, Directors and Family members), AF = Associated Firms, Group = Insiders + AF, FI = Financial Institutions, State = Government of Pakistan, ln(a) = log of assets, Tang. = Tangibility, QR = Quick Ratio, Risk = Standard deviation of last four years market value of common stock, ETR = Effective tax rate, ATO = Asset turnover, DPO = Dividend payout, and Ndts = Non-debt tax shield.

	(1) Insid.	(2) AF	(3) Group	(4) FI	(6) For.	(7) State	(8) Leverage
ln(a)	2.537***	-0.050	2.487***	-2.112***	0.747**	-1.096***	0.456
	(4.29)	(-0.13)	(4.12)	(-4.69)	(1.98)	(-4.07)	(0.48)
Tang.	0.007	0.013	0.020	0.024	-0.036**	0.004	0.049
	(0.32)	(0.84)	(0.86)	(1.37)	(-2.43)	(0.36)	(1.31)
QR	-0.260	0.225	-0.035	-0.001	-0.088	-0.167	-1.734***
	(-0.85)	(1.10)	(-0.11)	(-0.00)	(-0.45)	(-1.20)	(-3.51)
Risk	-0.007*	0.324**	0.317*	-0.018	-0.248**	-0.213**	-3.019***
	(-1.73)	(2.46)	(1.68)	(-0.12)	(-1.98)	(-2.38)	(-9.53)
ETR	0.055	-0.003	0.052	0.064	-0.000	0.005	-0.015
	(0.60)	(-0.05)	(0.55)	(0.91)	(-0.00)	(0.13)	(-0.10)
ATO	-0.617*	0.563*	-0.054	-1.020**	0.226*	-0.011	-6.833***
	(-1.84)	(1.66)	(-0.10)	(-2.49)	(1.66)	(-0.05)	(-7.86)
DPO	0.139	-0.207	-0.069	-0.347	-0.384	0.001	-1.195
	(0.25)	(-0.57)	(-0.12)	(-0.83)	(-1.10)	(0.00)	(-1.36)
Ndts	-0.023*	-0.111***	-0.135**	0.136***	0.023	0.010	0.295***
	(-1.94)	(-3.15)	(-2.50)	(3.38)	(0.69)	(0.41)	(3.46)
Const.	11.765**	14.290***	26.056***	29.717***	4.513	10.046***	72.442***
	(2.53)	(4.60)	(5.50)	(8.42)	(1.52)	(4.75)	(9.68)
Obs.	1525	1525	1525	1525	1525	1525	1525
R²	0.03	0.02	0.03	0.04	0.01	0.03	0.15
Firms	306	306	306	306	306	306	306
F-value	4.52	2.59	5.32	5.67	1.66	4.18	26.85
Within	69.771	124.044	60.027	34.569	95.155	71.277	12.534

t-stat in parenthesis, *** significant at 10%; ** at 5%; * at 1% levels.

A4.6: Direct Ownership and Firm Performance
(Dependent variable: Return on Equity)

(1) The following table shows effect of shareholdings by different types of direct owners on the firm performance measured by 'return on equity'.

(2) Abbreviations: Insid. = Insiders (Managers, Directors and Family members), AF = Associated Firms, Group = Insiders + AF, FI = Financial Institutions, For. = Foreigners, and State = Government of Pakistan, Lev. = Leverage, ln(a) = log of assets, Tang. = Tangibility, QR = Quick Ratio, Risk = Standard deviation of last four years market value of common stock.

	(1) Insid.	(2) AF	(3) Group	(4) FI	(6) For.	(7) State
Lev.	-5.294***	-7.455***	-5.357***	-5.904***	-4.860***	-4.975
	(-4.24)	(-4.80)	(-4.58)	(-2.97)	(-2.68)	(-1.23)
Ln(a)	-27.140	12.108	-4.513	9.004	-15.776	154.483
	(-1.29)	(1.00)	(-0.25)	(0.41)	(-0.69)	(0.87)
Tang.	0.229	0.663	0.270	0.388	1.548	-0.237
	(0.50)	(1.28)	(0.69)	(1.03)	(1.53)	(-0.14)
QR	-7.494	-9.882	-10.793**	-11.913**	-7.094	12.267
	(-1.13)	(-1.42)	(-2.05)	(-2.05)	(-0.77)	(0.35)
Risk	-14.190**	-14.698**	-16.232***	-16.648**	-5.032	15.073
	(-2.52)	(-2.41)	(-3.60)	(-2.43)	(-0.46)	(0.36)
Insid.	12.198**					
	(2.02)					
AF		-19.977*				
		(-1.88)				
Group			4.383			
			(0.89)			
FI				-0.069		
				(-0.01)		
For.					34.458	
					(1.45)	
State						133.468
						(0.83)
Const.	211.238*	719.15***	218.560	350.484**	106.622	-1,049.78
	(1.79)	(3.23)	(1.31)	(2.29)	(0.50)	(-0.61)
Obs.	1525	1525	1525	1525	1525	1525
Firm	306	306	306	306	306	306
R^2	4.85	4.08	6.41	6.55	2.56	0.52
F-value	0.56	0.46	0.82	0.85	0.29	0.05
Within	1.00	1.00	0.98	0.96	1.00	1.00

t-stat in parenthesis, *** significant at 10%; ** at 5%; * at 1% levels.

A4.7: Ultimate ownership (VR ≥ 25%) and firm performance
(Dependent variable: Return on Equity)

(1) The following table shows effect of shareholdings by different types of ultimate owners (UO) on the firm performance measured by 'return on equity'. The model is estimated for 25 percent threshold of voting rights of the ultimate owner.

(2) Abbreviations: Family (Fam.), Foreigner (For.), Legal person (LP), State (Government of Pakistan) and Extended definition of family (FamE = Fam + LP). Lev. = Leverage, ln(a) = log of assets, Tang. = Tangibility, QR = Quick Ratio, Risk = Standard deviation of last four years market value of common stock.

	(1)	(2)	(3)	(4)	(5)
	Fam25	GoP25	For25	LP25	FamE25
Lev.	-5.60***	-6.25***	-6.24***	-7.68***	-5.19***
	(-5.05)	(-4.53)	(-4.28)	(-5.15)	(-4.67)
ln(a)	-11.430	14.927	9.058	17.436	-5.432
	(-0.86)	(1.08)	(0.86)	(1.49)	(-0.40)
Tang.	0.522	0.221	1.945	0.903*	0.307
	(1.25)	(0.41)	(0.45)	(1.73)	(0.81)
QR	-8.488	-8.693	-10.378	-16.232**	-8.594
	(-1.44)	(-1.10)	(-1.41)	(-2.45)	(-1.52)
Risk	-15.1***	-14.9**	-16.3***	-21.2***	-14.4***
	(-2.98)	(-2.33)	(-3.01)	(-3.57)	(-2.99)
UO25*Fam	10.261**				
	(2.38)				
UO25*GoP		-66.173			
		(-0.83)			
UO25*For.			24.146		
			(0.36)		
UO25*LP				-19.468**	
				(-2.04)	
UO25*FamE					6.006
					(1.47)
Const.	142.1	530.3**	111.6	547.5***	166.9
	(1.15)	(2.19)	(0.17)	(4.00)	(1.14)
Obs	1525	1525	1525	1525	1525
Firms	306	306	306	306	306
F-value	5.96	3.61	4.57	4.83	6.49
Within	0.67	0.46	0.59	0.55	0.80
p-value	1.00	1.00	1.00	1.00	0.99

t-stat in parenthesis, *** significant at 10%; ** at 5%; * at 1% levels.

Deutscher Abstract

Die vorliegende Dissertation untersucht die Auswirkungen der Eigentümerstruktur auf Finanzierungsstruktur, Investmenterfolg sowie Gesamterfolg eines Unternehmens. Zudem wird auf Agency Konflikte im Zusammenhang mit Corporate Governance Bezug genommen. Zu diesem Zweck wurde die Eigentümerstruktur auf drei verschiedenen Ebenen analysiert: direkte und letztendliche Eigentumsstruktur sowie Eigentumskonzentration. Der Studie liegen Paneldaten von mehr als 300 börsennotierten Unternehmen in Pakistan, beobachtet über den Zeitraum 2002 bis 2006, zugrunde.

Der erste Essay untersucht den Einfluss der Eigentümerstruktur auf die Wahl der Finanzierungsart der Unternehmen. Das bemerkenswerte Ergebnis dieser Analyse ist, dass ein inverser Zusammenhang zwischen dem Eigenkapitalanteil von Insidern sowie verbundenen Unternehmen und dem Verschuldungsgrad besteht. Dies deutet darauf hin, dass risikoaverse Insider sowie verbundene Unternehmen versuchen, Restriktionen im Zusammenhang mit Fremdkapital zu vermeiden. Unternehmen, die letztendlich von Familien kontrolliert werden, weisen einen höheren Verschuldungsgrad auf, was darauf schließen lässt, dass Familien Unternehmenskontrolle höher bewerten und mittels Fremdkapital versuchen sich vor feindlichen Übernahmen zu schützen.

Während der zweite Essay den Einfluss der Eigentümerstruktur auf den Investmenterfolg im Sinne von Tobin's marginalem q analysiert, widmet sich der dritte Essay dem Einfluss der Eigentümerstruktur auf den Gesamterfolg der Unternehmen im Sinne von Tobin's durchschnittlichem q. Bei letzterer Untersuchung wurde die Eigentumsstruktur sowie der Leverage als endogen angenommen, weshalb eine two-stage least squares Regression durchgeführt wurde. Die Ergebnisse zeigen, dass ein positiver Zusammenhang zwischen Eigentumsanteilen im Besitz von Managern und der Investitionseffizienz sowie dem Gesamterfolg der Unternehmen besteht, wobei eine Konvergenz der Interessen von Insidern und externen Investoren stattzufinden scheint. Auf der anderen Seite stehen Eigentumsanteile im Besitz des Staates in Zusammenhang mit einem geringeren Investmenterfolg, was den Schluss nahe legt, dass Privatisierungen Werte schaffen.

Schließlich besteht auch ein negativer Zusammenhang zwischen Eigentumsanteilen, die von Finanzinstitutionen gehalten werden, und dem Gesamterfolg von Unternehmen. Letzteres könnte darauf zurückzuführen sein, dass regulatorische Restriktionen Finanzinstitutionen daran hindern in die Unternehmenspolitik einzugreifen. Betrachtet man die letztendlichen Eigentümer der Unternehmen, so zeigt sich, dass Unternehmen in Familienbesitz sowohl eine höhere Investitionseffizienz als auch einen höheren Gesamterfolg aufweisen.

Die Hauptresultate dieser Forschungsarbeit lassen sich wie folgt zusammenfassen: Eigentumsanteile im Besitz von Insidern führen dazu, dass sich die Interessen von Insidern und externen Investoren annähern; die Unternehmenskontrolle durch Familien steht in Zusammenhang mit einem höheren Verschuldungsgrad sowie mit einer erhöhten Wertschöpfung. Aus diesen Ergebnissen lassen sich wesentliche Folgerungen für gute Corporate Governance in sich entwickelnden Volkswirtschaften ziehen und sie leisten einen wichtigen Beitrag zur Corporate Governance Literatur.

Curriculum Vitae

Nadeem Aftab

Contact Information:
Permanent Address: House Nr. 50, Street Nr. 02, Naymat Colony, Faisalabad, Pakistan,
Tel: +92-41-8712977, +92-300-667064

Personal Information:
Nationality: Pakistani
Date of Birth: August 04, 1974

Academic Record:
(2009) Doctorate in Finance - University of Vienna, Vienna.
(2004) Diploma in Banking - Institute of Bankers Pakistan, Karachi.
(1998) M.Sc. Economics - Quaid-i-Azam University, Islamabad.
(1996) BA Economics, Punjabi - University of The Punjab, Lahore.
(1994) FSc (Maths, Physics, Chemistry)   BISE, Faisalabad.

Professional Records:
August 2000 - To date: State Bank of Pakistan, Karachi, Pakistan.
Feb – Dec. 1999: Visiting faculty, College of Business Admin., Faisalabad, Pakistan.
November 1998 - August 2000: Corporate Merchandising in textile products, Interloop
Private Limited, Faisalabad, Pakistan.