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Ownership Concentration, Corporate Governance and Firm Performance: Evidence from Pakistan

ATTIYA Y. JAVID and ROBINA IQBAL

1. INTRODUCTION

The nature of relation between the ownership structure and corporate governance structure has been the core issue in the corporate governance literature. From a firms' perspective, ownership structure determines the firms' profitability, enjoyed by different stake-holders. In particular, ownership structure is an incentive device for reducing the agency costs associated with the separation of ownership and management, which can be used to protect property rights of the firm [Barbosa and Louri (2002)]. With the development of corporate governance, many corporations owned by disperse shareholders and are controlled by hire manager. As a results incorporated firms whose owners are dispersed and each of them owns a small fraction of total outstanding shares, tend to under-perform as indicated by Berle and Means (1932). Latter this theoretical relationship between a firm's ownership structure and its performance is empirically examined by Jensen and Meckling (1976) and Shlefier and Vishny (1986).

In most of developing markets including Pakistan, the closely held firms (family or state-controlled firms or firms held by corporations and by financial institutions) dominate the economic landscape. The main agency problem is not the manager-shareholder conflict but rather the risk of expropriation by the dominant or controlling shareholder at the expense of minority shareholders. The agency problem in these markets is that control is often obtained through complex pyramid structures,[1] interlock directorship,[2] cross shareholdings,[3] voting pacts and/or dual class voting shares that allow the ultimate owner to maintain (voting) control while owning a small fraction of ownership (cash flow rights). The dominant shareholder makes the decisions but does not bear full cost. The negative impact that large family shareholders can have on firm value

Attiya Y. Javid <attiyajavid@pide.org.pk> is Senior Research Economist at the Pakistan Institute of Development Economics, Islamabad. Robina Iqbal <robinaiqbal@gmail.com> is Freelance Researcher.

[1]Pyramids are a particular form of inter-firm shareholding arrangement in which firm A holds a stake in firm B, which holds a stake in firm C. The distinguishing characteristic of pyramid arrangement is that firm A is attempting to exercise control over firm C while minimising its financial investment in firm C, either directly or indirectly.

[2]That occurs when a firm's employee sits on other firm's board, and that firm's employee sits on the first firm's board. These employees are generally the Chief Executive Officer (CEO) or another person high in management of their respective firms.

[3] Cross-holding means company Y directly or indirectly controls its own stock.

can be even greater when family members hold executive positions in the firm. The choice of a family member as Chief Executive Officer (CEO) can have a significant impact if the individual does not have the talent, expertise or competency to run the business. The opportunity cost created by a suboptimal appointment will be shared by all shareholders while the private benefits accrue entirely to the family [Peres-Gonzalez (2001)].

There is another presumption in the literature that large shareholders have power and stronger incentive to ensure shareholder value maximisation [Jensen and Meckling (1976); Zeckhouser and Pound (1990); Burkart (1997)]. The empirical evidence on corporate governance suggests that large owners have stronger incentive and better opportunities to exercise control over manager than small shareholders. Claessen, Djankov and Pohl (1996 and 1999) find evidence of a positive relation between shareholding concentration and firm performance, Kocenda and Svejnar (2002) only partly confirmed that observation. Block-holder ownership above a certain level may lead to entrenchment of owner-mangers that expropriate the wealth of minority shareholders [Fama and Jensen (1983); Morck, Shleifer, and Vishny (1988); Shleifer and Vishny (1986)]. A negative effect of market value on ownership concentration is proposed and supported by Demsetz and Lehn (1985). The literature on corporate governance also pays much attention to the issue of shareholders identity. The implication is that it matters not only how much equity a shareholder owns, but also who is this shareholder—a family, a private person, worker, manager, financial institution or foreign enterprise. However much of the existing literature is based on the functioning of developed markets' firms, and therefore presumes a wider dispersion in ownership structure than one find in developing markets like Pakistan where large share holdings are common.

La Porta, Lopez-de-Silanes, Shleifer and Vishny (1997, 1998, 1999 and 2000) have shown that the countries with weak legal environment, the original owners tries to maintain large positions in their corporations which results in concentration of ownership. Equity ownership by insiders can align insider interest with those of shareholders, thereby leading to greater firm value [Klapper and Love (2002)]. In underdeveloped markets in addition to weak legal enforcement reasons, due to underdeveloped nature of financial markets that would allow limited access to external financing and result in predominance of family firms [La Porta, *et al.* (1997, 1998); Pistor, Raiser, and Gelfer (2000)]. In case of Pakistan the majority of the firms are owned by the family or institution [Cheema, Bari, and Saddique (2003)]. Further the researchers have comprehensively studied the conflict between managers and owners regarding the functioning of the firm for developed markets, although, the research on understanding the differences in behaviour of different shareholder identities is limited for emerging markets.

Corporate Governance reforms started with the introduction of Corporate Governance Ordinance in 2002. There is little work done to examine the association between corporate governance and corporate ownership pattern in case of Pakistan. Cheema, *et al*. (2003) identify only the nature of corporate ownership structure in Pakistan without analysing its impact on corporate performance. The present study tries to fill the gap of needed research area on the relation between corporate ownership and corporate governance in context of Pakistan.

The main focus of this study is to investigate whether the equity ownership structure matters in case of Pakistan and its implications for corporate governance and corporate valuation. The rest of the study is organised as follows. Section 2 reviews the important empirical studies concerning the relationship between corporate governance, ownership structure and corporate value. Section 3 describes the empirical specification of the model and Section 4 presents the discussion of the empirical results. Last section concludes this study.

2. REVIEW OF LITERATURE

After the influential study of Berle and Means (1932) the separation of corporate ownership from control has given rise to large literature devoted to elaborating, refuting or testing it. Hassen (1983) argues that if, as Berle and Mean claim, corporate officers are promoting their own financial interests at the expense of the shareholders, then the remedy is to encourage shareholders to pay an active role in nominating and electing directors and thus influence the selection of the officers who run the enterprise. While Jensen and Meckling (1976) argue that introduction of managerial share ownership may reduce these agency problems, thus aligning the interest of managers and shareholders. They assert that firm value is reduced when ownership and control are separated due to added costs of monitoring and the managers participate in activities that may not enhance firm value for the owners. However, Fama (1980) and Fama and Jensen (1983a,1983b,1985) maintain that there are efficiencies to separating ownership and control into decision-making and risk-bearing functions which make dispersed ownership advantageous because the efficiency gains outweigh the agency costs. The findings of Graff (1950) and Feinberg (1975) suggest that organisations with combined ownership and control, owner-operators may choose to exchange profits for other benefits, such as choosing current over future consumption [Fama and Jensen (1985)] and on-the-job non-pecuniary consumption [Demsetz (1983)]. Kuznetsov and Muravyev (2001) argue that concentrated ownership has its costs when large shareholders, capable to influence corporate decision directly, maximise value for themselves and deprive small owners of their part of residual income. Other negative consequences of ownership concentration includes raised cost of capital due to lower market liquidity or decrease diversification opportunities on the part of the investors [Fama and Jensen (1983)], prevents additional monitoring of managers by the stock market available under diffused ownership with high liquidity of shares [Holmstrom and Tirole (1993)]. La Porta, *et al*. (1999), Claessens, *et al.* (2000) and Faccio and Lang (2002) find that publicly traded companies in most countries possess a higher level of ownership concentration. Yeh (2003) in Taiwan, Dzieranowski and Tamowicz (2004) in Poland and Cheema, *et al.* (2003) in Pakistan find that the companies' shares are common concentrated in the hand of largest shareholders.

When shareholders are too diffused to monitor managers, corporate assets can be used for the benefit of the managers rather than for maximising shareholder wealth. Therefore a solution to this problem is to give managers equity stake in the firm. Doing so will resolve the moral hazard problem by aligning managerial interests with of shareholders Himmelberg, Hubbard, and Palia (1999). Stulz (1988) demonstrate that sufficiently high managerial ownership, by allowing managers to block takeover bids, can lower firm value. Using US data, Morck, *et al.* (1988), McConnell and Servaes

(1990, 1995), Hermalin and Weisbch (1991); and Holderness, Kroszner and Sheehan (1999) all find firm value to rise with low levels of managerial ownership and to fall with higher levels of managerial ownership.

As regards the effects of foreign investment on firm performance, it is argued that the observed higher productivity of foreign-owned firm because they are disproportionately concentrated in high productive sectors [Griffith (1999) and Oulton (2000**)]**, by active monitoring, complementing the inadequate or inefficient monitoring of domestic institutions Choi and Yoo (2005), source of not only financing but also scarce monitoring skills and control-enabling property rights in emerging markets [Khanna and Palepu (1999)], foreign shareholders outperform firm in which foreign shareholders exercise effective control [Chhibber and Majumdar (1999)].

There is an extensive theoretical literature on the role and incentive of financial institutions/banks monitoring non-financial corporations. Chirinko, Ees, Garretsen and Sterken (1999) explain that financial institutions might be important mainly because of their role as supplier of debt but also as equity holder and their representation on supervisory board. Jensen (1989) argues that joint ownership of debt and equity by large informed investors (such as Japanese bank) results in stringent managerial monitoring and create strong incentive for managers to make value-maximising decisions. Gedajlovic and Shapiro (2002) are also of the view that financial institutions are well positioned to monitor the manager of the firm within their network. Lichtenberg and Pushner (1994) study support the proposition that equity ownership by financial Institution in Japan effectively substitute for the missing external takeover[4] market by resulting in monitoring and intervening when necessary, thus reducing the incidence and severity of lapses from efficient behavior. Sheard (1989, 1991) and Morck and Nakamura (1999) propose that financial institution equity block primarily as anti-takeover barriers. The firm performance varies substantially for different types of owners. Pakistan where large share holdings are common [La Porta, *et al.* (1999); Cheema, *et al.* (2003)], it seems more interesting to explore the link between concentration of ownership and its identity with performance.

3. METHODOLOGICAL FRAMEWORK AND DATA

The corporate governance literature makes an important distinction between ownership of voting rights and ownership of cash flow rights. Corporate ownership is measured by cash-flow rights, and control is measured by voting rights [Faccio and Lang (2001)]. If controlling shareholders have a majority of voting rights but own negligible cash flow rights, they have little incentive to take steps to increase the value of the firm's equity. However, as controlling shareholders' ownership of cash flow rights increases, any action they take to benefit themselves at the expense of other equity holders has a cost in that it decreases the value of the shares controlling shareholders own. If controlling shareholders own almost all of the cash flow rights, it makes little sense for them to expend resources to extract private benefits at the expense of minority shareholders [Doidge, Karolyi, Lins and Stulz (2005)].

[4]Takeovers: if a firm is inefficiently operated, then there is scope for improved performance if an outsider (or some of current shareholders) take over the firm, replaces its management, and initiates a new business strategy [Yafeh (2001)].

The definition of the ownership in this study relies on cash flow rights of equity stakes rather than on voting rights.[5] The ownership variables included are: ownership concentration (T5), managerial shareholding (Dir) separately to access block-holders and directors ownership affects on performance of across firms. To delve deeper in to this issue the concentration of ownership is split into four separate groups of owners: family owners (fam), foreign owners (for), financial institution owners (fin) and individual owners (ind). The natural logarithm of the percentage of shares held by each category of ownership type is used. To reduce arbitrariness the construction of our ownership variables is either based on legal requirements by Pakistani law or is supported by previous empirical literature.

The top five shareholders as proxy for the ownership concentration is used to analysis that whether corporate ownership affects corporate governance and corporate performance or not. In top five shareholders there is no distinguish between different categories of shareholders. Any cut-off level for inclusion of any shareholder in top five categories is not used.[6] The family ownership is considered as percentage of share held by husband, wife, son, and daughter and other family members, whose surname are same as family members where the founder or a member of his or her family by either blood or marriage. Foreign ownership are defined as percentage share held by companies which are incorporated outside Pakistan but have a place of business in Pakistan under the companies Ordinance, 1984, "Foreign Companies". The Ordinance also defines a foreign subsidiary as a company in which more than 50 percent of the equity is held by a single foreign company. In Pakistan there is no legal limit by the government for minimum and maximum level of equity holding by foreign investors as compare to India where no foreign investor hold more than 51 percent equity stakes of a firm.

Financial Institutions /Banks Ownership[7]is defined as financial institutions in the sample represent legal minority shareholder (holding at least 10 percent of

[5]Controlling shareholders use pyramiding schemes and cross-holding as a means of separating the cash flow and voting rights, and to enhance their company control rights. To measure such structure, the data for both the ultimate cash flow ownership stakes and voting power held by the management group and its family for all of firms is needed, but data on ultimate voting rights is not available. However to the extent that effective managerial and family control can be established at some level below 100 percent, control and cash flow rights will inherently be separated. Generally, managerial control of 51 percent of the shares will confer unequivocal control rights. In such a case, controlling managers that divert one dollar from the firm for personal gain will bear at most 51 cents of the cost. Any further separation of control from cash flow rights via pyramids and superior voting shares may be a second-order effect [Doidge, *et al.* (2005)].

[6]The idea behind 10 percent of the shares is that the passage of special resolution under the Pakistan Companies ordinance of 1984, as a result of which alteration in a firm's activities can be made only by the 75 percent majority vote of shareholders in favour of such resolution. Only 10 percent class of shareholders have the ability to block the members' special resolutions that are necessary to make significant changes. Moreover, disclosure of the aggregate of shareholding, restriction on the sale of shares to public are all associated with more than 10 percent holding of shares.

[7]Under the financial institutions ordnance, 2001 "Financial Institution" are defined as; (i) any company whether incorporated within or outside Pakistan which transacts the business of banking or any associated or ancillary business in Pakistan through its branches within or outside Pakistan and includes a government savings bank, but excludes the State Bank of Pakistan; (ii) a Modaraba or Modaraba management company, leasing company, investment bank, venture capital company, financing company, unit trust or mutual fund of any kind and credit or investment institution, corporation or company; and (iii) any company authorised by law to carry on any similar business, as the Federal Government may by notification in the official Gazette, specify (The Financial Institutions Ordinance, 2001,XLVI of 2001).

share holders on average).[8] The percentage of total equity shares mainly held by Banks, National Investment Trust (NIT), a unit trust and Investment Corporation of Pakistan (ICP) that is a development financial institution are included. The reforms of the 1990s have transformed the structure of the financial sector in Pakistan. In order to increase competition the government started privatising the national banks and other financial institutions. The assets share of banking institutions in the private sector has increased from 7.8 percent in 1990 to about 55 percent in 2002 [Cheema, *et al.* (2003)]. However their equity investment remains low as compare to ICP and NIT.[9] Consequently, the effect of financial institution's ownership on performance in case of Pakistan is likely to be different. Director ownership is the share ownership by management and board of directors varies substantially across firms. The shares held by directors and officers irrespective of whether managers are part of family or a professional manager hired by the family or by the foreign firm.

3.1. Determinants of Ownership Concentration

The empirical evidence suggests that in Pakistan ownership is concentrated [Chemma, *et al*. (2003) and La Porta, *et al.* (1999)]. Most firms are closely held either by families, directors, foreign or institution owners. To distinguish among different ownership type in the analysis, the ownership type is controlled in the ownership model and separate estimate of determinants of ownership for directors' ownership are also provided. As mentioned above a block holder is defined to be any entity owning more than 10 percent of the firm equity. In the absence of adequate investor protection concentration of ownership becomes a more important tool to resolve agency conflict between controlling and minority shareholder [Shleifer and Wolfenson (2002)]. Therefore the hypothesis tested is that there is association between concentration of ownership and quality of corporate governance practices following the empirical specification of the model proposed by Pistor, *et al.* (2003), Durnev and Kim (2006) and Klein, *et al.* (2005) is used:

$$Own_i = \alpha + \beta_1 CGI_i + \beta_2 Inv_i + \beta_3 Size + \beta_4 Lev_i + \beta_5 Lw_i * CGI_i + \varepsilon_{it} \qquad \ldots \qquad (1)$$

In the model Own_i is the ownership concentration by top five shareholders of firm i at time t. CGL_i is a vector of corporate governance index, Inv_i is investment opportunities measured by the past growth in sales, Lev_i is leverage defined as book value of long term debt/book value of total asset, Lw_i is rule of law that is used for the proxy of enforcement of law, and $Size_i$ is measured by the log of total asset. ε_{it} is random error term.

[8]The Company Ordinance, 1984 and the Code of Corporate Governance do not recognise minority shareholders with a shareholding below 10 percent. The minimum threshold for seeking remedy from the Court against mismanagement and oppression requires initiation of the company by no less than 20 percent of the shareholders. Shareholders representing 10 percent can apply to SECP for appointment for inspector for investigation into the affairs of the company. See section 263 and 290 of the Company Ordinance,1984

[9]According to Cheema, *et al*.(2003) in their investigation of investment composition of local private companies the sole contribution of ICP/NIT in equity capital of Textile sector is 8.4 percent as compare to 5.1 percent of other financial institutions, and 11.1 in Non-Textile sector as compare to 8.2 percent of other financial institutions.

It is expected that shareholders with greater cash flow rights practice lower quality corporate governance. The owner shareholders of the firm with more profitable investment opportunities divert less for outside shareholders gain and practice high quality governance [Durnev and Kim (2006) and Johnson, *et al.* (2000)]. There is opposite finding that growing firms dilute their ownership to spread risk of expansion [Shleifer and Wolfenson (2002)]. As regards the firm level variables, the firm size is used as control variable and expects to have an inverse relationship between firm size and ownership concentration due the risk neutral and risk averting effects because the market value of a given stake of ownership is greater in larger firm, this higher price should reduce the degree of concentration. At the same time risk aversion should discourage any attempt to preserve the concentration of ownership in face of larger capital because this would require the owners to allocate more of their wealth to single venture [Domsetz and Lehn (1985)]. Following La Porta, *et al*. (1998) the ownership concentration of the firm is related to legal environment of the country, the rule of law index as a proxy for the efficiency of the legal environment is used as interactive variable. It is expected to find negative relationship between ownership concentration and law enforcement because in countries like Pakistan with poor investor protection ownership concentration might become a substitute for legal protection as shareholders may need to own more capital in order to exercise control.

3.2. Ownership Concentration and Firm Performance

The deficiency of external governance mechanism that is weakness of investor protection and absence of well developed market for corporate control leads investor to rely on governance structure that is dominated by highly concentrated ownership. In this section the impact of ownership concentration on the firm performance is examined. The firm performance improves when ownership and managerial interest are merged through concentration of ownership [Agrawal and Mandeike (1990)]. The reason is that when major shareholdings are acquired, control can not be disputed and resulting concentration of ownership might lower or completely eliminate agency costs. In addition block holders might provide an opportunity to extract corporate resources for private benefits in a way that would have a negative effect on firm valuation. To test the hypothesis that there is a relationship between concentration of ownership and firm performance, the model suggested by Pistor, *et al.* (2003) and Klein, *et al.* (2005) is estimated. The model is given below:

$$Perf_1 = \alpha + \beta_1 Own_i + \beta_2 CGI_i + \beta_3 Size_i + \beta_4 Inv_i + \beta_5 Size_i + \beta_6 Lw_t * Own_i + \varepsilon_{it} \quad (2)$$

Where $Perf_i$ is measure of performance for firm i at time t, return on assets ROA, return on equity (ROE) and Tobin's Q, remaining variables are same as defined for model (1). When profitable investment opportunities are there, the controlling shareholders divert to concentrated ownership and corporate valuation become higher. The positive relationship between ownership and firm value is higher in weak legal environment [La Porta, *et al*. (2002); Durnev and Kim (2006)]. It is expected that firms with better investment opportunities, better corporate governance practices should have higher valuation.

3.3. Ownership Identity and Firm Performance

Since the type of ownership concentration might vary across firms according to the identity of large shareholders. It is postulated that the relationship between larger shareholder and firm performance depends on who the large shareholders are. The concentration of ownership is split into four separate groups: family ownership (Fam), financial institutional ownership (Fin), foreign ownership (Fore) and individual ownership (Ind). To avoid multicolinearity the managerial ownership is not included in the model. The affect of managerial ownership on performance is also investigated separately. The following model proposed by Pistor, *et al.* (2003) is estimated to determine the relationship between ownership identity and firm performance:

$$Perf_i = \beta_0 + \sum_j \theta_j Own_{ij} + \beta_1 Inv_i + \beta_2 Size_i + \beta_3 Lev_i + \beta_4 Lw_i * Own_i + \varepsilon_{it} \quad \ldots \quad (3)$$

Where Own_{ij} is the percentage of share held by owner of type j of firm i at time t and other variables are the same as used in model (1) and (2). There has been increasing concern about the endogeneity issue of ownership variables in literature [Himmelberg, *et al.* (1999) and Demsetz and Lehn (1985)]. The system generalised method of moments (GMM) estimation technique is used on the panel data to deal with this issue. The lag dependent and explanatory variables are used as instruments following Arellano and Bond (1991).

3.4. Data

To assess the relationship corporate governance and ownership structure at firm level, the data of 60 non-financial firms listed at Karachi Stock Exchange which are most active and representative of all non-financial sectors are used. The data set is obtained from the annual reports of these firms for the year 2003 to 2008. The corporation fully owned by the government of Pakistan and corporation from financial sector such as bank and insurance companies because valuation ratios for financial corporations are not comparable to those of non-financial corporations The analysis is started from 2003 for our analysis because the Corporate Governance Code 2002 start implementation from 2003 and public information about listed companies' detailed ownership structure became available for the first time only in 2003. For each firm the ownership structure information is obtained from the company's annual reports which are required by the Company Ordinance, 1984 in form 34 and Code of Corporate Governance under clause XIX (i). The block-holder is defined as any individual, director, associated company, foreign investor or financial institution has 10 percent or more shareholdings. The 10 percent rule is applied because 10 percent or more shareholding has the ability to block company's special resolution. The Category and Pattern of Shareholding report the names and holdings of large shareholders, directors, specifies any family relations between them, and identifies the owners of companies that are large shareholders as well intuitional holdings and related parties' holdings. With this data set the ownership categories directors' shareholdings, financial institution holdings foreign investor's holdings, and block-holder with 10 percent shareholding are constructed.

The corporate governance index and disclosure and transparency index are used which are developed by the authors in their study [Javid and Iqbal (2007)]. In order to construct corporate governance index for the firms listed on KSE, a broad, multifactor corporate governance rating is done which is based on the data obtained from the annual reports of the firms submitted to SECP. The index construction is as follows: for every firm, twenty-two governance proxies or indicators are selected; these indicators are categorised into three main themes. The three categories or sub-indices consist of: eight factors for the board composition index, seven for ownership and shareholdings index and seven for transparency, disclosure and audit index. The weighting in the construction of index is based on subjective judgments. The assigned priorities amongst and within each category is guided by empirical literature and financial experts in this area. The maximum score is 100, a score of 100 is assigned if factor is observed, 80 if largely observed, 50 for partially observed and 0 if it is not observed. The average is taken out for all the factors belonging to the sub-index and we arrive at the rating of one sub-index.[10] By taking the average of three sub-indices we obtain the aggregate corporate governance index for each firm in the sample.

Data on rule of law has been taken from World Bank governance indicators. The ranking of rule of law as ranging from 0 to 1 for Pakistan is 0.34 as average of six years. That indicates very poor legal environment for Pakistan in term of enforcement of law.[11] Financial data on the sample firms are compiled from the balance sheets, profit and loss accounts, cash flows statement and notes to the accounts of the annual reports of the corporations. The size is defined as natural logarithm of total asset and growth of sales is taken as investment opportunities. The leverage is defined as ratio of book value of long term debt to book value of total asset. The data of all these variables are obtained from the annual reports of the listed firms in the sample.

4. EMPIRICAL FINDINGS

The analysis is started by exploring the determinants of ownership concentration. The measure of ownership concentration is defined as percentage of share owned by the largest five shareholders in a firm, and a block is defied as to be any entity owning more than 10 percent of the firm's equity. The model (1) is estimated for five specifications with aggregate CGI_i index and with sub-indices that are board composition index, shareholdings and audit index, disclosure and transparency index. The results are presented in Table1.

The results suggest that there is negative relationship between ownership concentration and quality of corporate governance. Durnev and Kim (2006) find there is positive relation between cash-flow rights and corporate governance, however, Morck, *et al.* (1988) and McConnell and Servaes (1990) argue that greater ownership concentration may align their interest with minority shareholders, but it results in greater degree of managerial entrenchment. The transparency scores score when included in the model the

[10]Sub-Index includes (i) Board composition index, (ii) The ownership and shareholdings Index, (iii) Disclosure and Transparency index.

[11]Although as Pakistan belongs to common law countries legal origin. In view of La Porta, *et al*. (1997) common law countries provide strong investor protection in term of law on books. The ranking of rule of law indicate the fact that enforcement of law is very low against high ranking on law on books.

Table 1

Determinants of Concentration of Ownership by Top Five)

Independent Variables	1	2	3	4
CGI_i	–0.02**			
	(–1.56)			
Board		0.01		0.20*
		(3.98)		(4.61)
Disc			–0.01	0.17
			(–0.51)	(0.93)
Inv	0.56*	0.73*	0.56*	0.07**
	(3.14)	(4.04)	(3.14)	(2.22)
Size	–0.01*	–0.11*	–0.01	–0.01***
	(–2.30)	(–7.43)	(–2.53)	(–1.59)
Lev	0.01	0.01	0.01	0.08
	(0.28)	(0.40)	(0.64)	(0.76)
$Lw*CGI$	0.02	–0.05	–0.06	–0.17
	(0.27)	(–0.97)	(–0.45)	(–1.57)
Constant	–0.50	0.48	0.38	–.0.76
	(–2.86).	(2.75)	(1.58)	(5.48)
R^2	0.28	0.31	0.28	0.34

Note: The *, ** and *** indicates the significance levels at 1 percent, 5 percent, and 10 percent respectively. The values in parenthesis are t-statistics.

results show that the relationships become insignificant and show that this governance indicator do not affect the concentration of ownership. There is no reason to expect that firms where ownership is concentrated disclose more, however board composition has positive and significant role. This negative coefficient of law variable with corporate governance index suggests that the relationship between ownership concentration and quality of corporate governance is stronger in weak legal regime. This indicates that in the absence of adequate legal protection for investor, concentration of ownership become an instrument to resolve agency conflict between controlling and minority shareholders. This result confirms that ownership concentration is indeed a response of poor legal protection [La Porta, *et al.* (1999); Durnev and Kim (2006)]. The leverage is not a significant determinant of ownership concentration in all cases. The effect of investment opportunities is always positive and significant in all the models, which shows that more investment opportunities leads to more concentration of ownership and when firm suffers from a substantial drop in profitable investment opportunities, the controlling shareholders divert more corporate resources. Johnson (2000) documents such behaviour by Asian firms before the East Asian crisis. The impact of firm size and ownership concentration is negative indicating that ownership concentration is significantly lower as the firm size expands.

As regards the results of effect of ownership concentration and firm valuation, the regression results are based on two accounting measures (ROA and ROE) and market measure that is Q-ratio for firm performance. Different specifications for each performance measure are estimated. The results are consistent with several empirical findings that document a positive and significant relationship between ownership concentration by top five shareholders and firm performance implying that ownership concentration matters in determining firm's value. Our result is in accordance with the findings of Lehmann and Weiggand (2000) for Germany, Leech and Leahy (1991) and Mudambi and Nicosia (1998) for UK. Another important finding is the favourable effect that market bestows on firms that follows good practices and is transparent. The positive and significant coefficient of corporate governance score and disclosure and transparency score imply that the firm that practice good governance and disclose more achieve superior performance compared to other firms. However, firm level variable show significant relationship with firm performance. The results reveal that large size firms are more likely to achieve better performance. The reason might be that the competition affects and the market power of large-sized firms enable them to out-perform small-size firms in Pakistan. Regarding other firm level variables the firms with more investment opportunities outperform compared to those which have less investment opportunities. The interaction term of corporate governance index with law enforcement term are not significant in any model suggesting that firm performance is not affected by rule of law in case of Pakistani firms where legal environment is weak. (Table 2)

Table 2

Evidence on Performance and Ownership Concentration by Top Five

	Tobin Q			ROA			ROE		
Owni	0.03**	0.12*	0.11*	0.12	0.12*	0.69**	0.001	0.01	0.13*
	(1.51)	(4.79)	(4.41)	(4.72)	(1.86)	(1.54)	(0.36)	(1.18)	(2.14)
CGI_i		0.01			0.29***			0.03**	
		(0.49)			(1.47)			(1.78)	
Disc_i			0.04*			0.01**			0.01**
			(2.83)			(1.86)			(1.67)
Inv	0.03***	0.03***	0.03***	0.03**	0.59***	0.01**	0.48**	0.001	0.02**
	(1.41)	(1.42)	(1.39)	(1.41)	(1.48)	(1.84)	(1.44)	(0.75)	(1.66)
Size	0.01*	0.02*	0.01**	0.02*	0.13	0.15***	0.36**	0.12**	0.12
	(2.33)	(2.08)	(1.84)	(2.37)	(3.85)	(4.39)	(1.97)	(1.72)	(1.01)
*Law*CGI_i*		–0.02	–0.01*		0.28	–0.10		–0.01	–0.03
		(0.64)	(–2.22)		(0.16)	(–0.57)		(–1.19)	(–0.57)
Intercept	0.11	1.30	1.19	1.18	0.16	–1.10	0.37	1.65	1.02
	(10.44)	(7.87)	(6.74)	(10.44)	(2.07)	(–1.79)	(0.68)	(1.94)	(2.01)
R Square	0.33	0.34	0.36	0.28	0.29	0.33	0.32	0.35	0.34

Note: The *, ** and *** indicates the significance levels at 1 percent, 5 percent, and 10 percent respectively. The values in parenthesis are t-statistics.

The type of ownership concentration varies across firms according to the identity of large shareholders, the relationship between firm performance and ownership type depends on who are the large shareholders. The concentration of ownership is split into four separate groups of owners: family ownership, foreign ownership, individual ownership and institutional ownership. The results reported in Table 3 indicate family and foreign ownership concentration have positive and significant effect on firm performance. The results do not indicate any impact of financial institution ownership and individual ownership concentration on firm value in any of our models. These findings are consistent with theoretical argument claiming that family owners and foreign

Table 3

Evidence on Performance and Ownership Identity

	Tobin Q			ROA			ROE		
Fam	0.22**	0.14*	0.09**	0.12**	0.21*	0.17*	0.21*	0.08*	0.05*
	(2.06)	(1.97)	(1.85)	(2.27)	(2.01)	(1.98)	(1.95)	(1.88)	(1.77)
Fore	0.03*	0.02**	0.01**	0.04***	0.02***	0.13**	0.01	0.13**	0.02***
	(1.98)	(1.86)	(1.96)	(1.66)	(1.76)	(1.97)	(1.73)	(1.85)	(1.57)
Fii	0.13	0.10	0.10	0.0 5	0.13	0.04	0.01***	0.04	0.01
	(1.21)	(1.14)	(0.74)	(1.41)	(1.36)	(1.07)	(1.67)	(0.82)	(1.13)
$Indv_i$	0.19	0.10	0.17***	0.04	0.11	0.03	0.02	0.01	0.12
	(1.00)	(1.01)	(1.61)	(1.33)	(0.44)	(1.04	(0.51)	(0.51)	(0.97)
CGI_i		0.11**			0.15**			0.21***	
		(1.86)			(1.89)			(1.73)	
$Disc_i$			0.03**			0.02**			0.01***
			(1.96)			(1.74)			(1.54)
$Size_i$	0.04	0.07*	0.03**	0.04**	0.01**	0.01**	0.01*	0.02*	0.01*
	(0.90)	(2.02)	(1.82)	(1.83)	(1.84)	(1.98)	(2.36)	(2.01)	(1.87)
Inv	0.03*	0.04***	0.02**	0.02	0.02*	0.01*	0.001	0.02*	0.01**
	(2.02)	(1.68)	(1.79)	(1.40)	(1.91)	(1.89)	(0.95)	(1.98)	(1.69)
$Law*CGI_i$		0.02	0.001		–0.12	0.01		0.02	0.11
		(0.97)	(1.02)		(1.04)	(1.11)		(1.06)	(0.49)
Intercept	–0.62	–2.13	–2.77	–0.77	–0.80	–0.54	1.65	–2.15	–1.11
	(–0.71)	(–1.50)	(–2.01)	(–0.81)	(–0.38)	(–1.55)	(0.94)	(–2.31)	(–2.24)
R^2	0.30	0.27	0.25	0.28	0.29	0.30	0.33	0.35	0.38

Note: The *, ** and *** indicates the significance levels at 1 percent, 5 percent, and 10 percent respectively. The values in parenthesis are t-statistics.

owners bring better governance and monitoring practices. The positive and significant results of the family shareholdings are due to the fact that families control can reduce classical agency problem between owner and managers [Fama and Jensen (1983)] as shareholders with a large stake in the company have a greater incentive to play an active role in corporate decisions because they partially internalised the benefits from their monitoring efforts. James (1999) posits that families have longer investment horizons, leading to greater investment efficiency. Stein (1989) shows the presence of shareholders with relative long investment horizons can mitigate the incentive for myopic investment decisions by managers. Moreover the family's historical presence, large equity position, and control of management and director posts place them in an extraordinary position to influence and monitor the firm.

The positive affect of foreign ownership on performance is supported by Dahlquist and Robertson (2001). They argue that foreign investors can complement the inadequate or inefficient monitoring of domestic institutions. Government authorities can effectively import the monitoring capability of institutional investors by opening local stock markets to foreign investors. In case of financial institution ownership it has no significant impact because firstly, the nominees on the board are typically bureaucrats and retired army officers with minimal expertise in corporate matters. Secondly, even if these agents of the government are equipped for the task of oversight in corporate matters they do not have a strong incentive to be effective monitors as their tenure and career prospects are rarely affected by the performance of the companies in which they serve on the board as nominees.

The owner-managers shows positive and significant impact on the firm performance in Table 4 and this result is in agreement with Sarkar and Sarkar (2000) who find that block-holdings by directors' increase firm value. Owner managers have a strong incentive to manage their companies well and generate wealth as their fortunes are tied to the well being of the company. They are after all the promoters of the company and they have the greatest stakes (in tangible as well in intangible terms) in the success and failures of their companies. They have also excellent knowledge of the firm.

Table 4

Evidence on Performance and Manager-Ownership

	Tobin Q			ROA			ROE		
Dir	0.46**	0.24*	0.11**	0.12**	0.21*	0.27*	0.33*	0.08*	0.05*
	(3.20)	(1.88)	(1.97)	(2.27)	(2.01)	(2.08)	(1.95)	(2.11)	(1.98)
CGI_i		0.11**			0.04**			0.11***	
		(1.74)			(1.89)			(1.84)	
$Disc_i$			0.01*			0.02**			0.01***
			(1.96)			(1.74)			(1.63)
Inv	0.01*	0.03***	0.02**	0.02***	0.02*	0.01*	0.01	0.02*	0.04**
	(1.98)	(1.77)	(1.82)	(1.64)	(1.91)	(1.89)	(0.95)	(1.98)	(1.69)
Size	0.04	0.27*	0.13**	0.04**	0.21**	0.10**	0.25*	0.03*	0.02*
	(0.90)	(2.02)	(1.82)	(1.83)	(1.84)	(2.01)	(2.72)	(2.72)	(1.98)
$Law*CGI_i$		0.02	0.001		–0.12	0.01	0.004	0.02	0.11
		(0.97)	(1.02)		(1.04)	(1.11)	(0.88)	(1.06)	(0.49)
Intercept	–0.62	–2.13	–2.77	–0.77	–0.80	–0.54	1.65	–2.15	–1.11
	(–0.71)	(–1.50)	(–2.01)	(–0.81)	(–0.38)	(–1.55)	(0.94)	(–2.31)	(–2.24)
R^2	0.30	0.27	0.25	0.28	0.29	0.30	0.33	0.35	0.38

Note: The *, ** and *** indicates the significance levels at 1 percent, 5 percent, and 10 percent respectively. The values in parenthesis are t-statistics

The corporate governance index and disclosure and transparency have positive affect on performance as reported in Tables 3 and 4. The results support our previous findings that size and investment opportunities have significant effect in most of the models. As regards the quality of legal environment the interaction terms of rule of law with ownership concentration shows no relationship with firm performance; which suggests that concentration of ownership is substitute for weak legal protection. [La Porta, *et al.* (2000)].

5. SUMMARY AND CONCLUSION

This study determines the factors influencing the ownership concentration, and the effect of this on the other aspects such as firm performance using representative sample of 60 firms for the period 2003 to 2008. The results reveal that in Pakistan corporations has more concentration of ownership which is the response of weak legal environment and this result validates the La Porta, *et al.* (1997, 1998, 1999, 2000) findings. The concentration of ownership seems to have positive effect on firms' profitability and performance measures. There is negative association between corporate governance practices and disclosures and transparency with concentration of ownership. The identity of ownership matters more than the concentration of ownership. The family, foreign and director ownership has positive affect on firm performance. The results indicate that firm specific factors affect more in concentration of ownership. The findings reveal that more investment opportunities provides greater opportunity to for ownership concentration, however, size has opposite effect and leads to delusion of ownership. It results in diverse ownership to get wider access to funds and share ownership. These results are consistent with studies Boubakri, *et al.* (2003). The legal environment has no impact on concentration of ownership or on firm performance [La Porta, *et al.* (2002)]. The broad implication that emerges from this study is that ownership concentration is an endogenous response of poor legal protection of the investors and seems to have significant effect on firm performance. It requires implementation of corporate governance reforms at most at par with real sector and financial sector reforms.

REFERENCES

Agrawal, A. and G. Mandelker (1990) Large Shareholders and the Monitoring of Managers: the Case of Antitakeover Charter Amendments. *Journal of Financial and Quantitative Analysis* 25, 143–161.

Arellano, M., and S. R. Bond (1991) Some Tests of Specification for Panel Data: Mote Carlo Evidence and an Application to Employment Equations. *Review of Economic Studies* 58, 277–297.

Barbosa, N. and H. Louri (2002) On the Determinants of Multinationals' Ownership Preferences: Evidence from Greece and Portugal. *International Journal of Industrial Economics* 20, 493–515.

Boubakri, Nargees, Jean-Cluade Cosset, and Omrane Guedhami (2003) Post Privatisation Corporate Governance: The Role of Ownership Structure and Investment Protection. *Journal of Financial Economics* 76:2, 369–399.

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

Burkart, M. (1997) Large Shareholders, Monitoring, and the Value of the Firm. The *Quarterly Journal of Economics* 112:3, 693–729.

Cheema, A., F. Bariand, and O. Saddique (2003) Corporate Governance in Pakistan: Ownership, Control and the Law. Lahore University of Management Sciences, Lahore.

Chibber, P. K. and S. K. Majumdar (1999) Foreign Ownership and Profitability: Property Rights, Control and the Performance of Firms in Indian Industry. *Journal of Law and Economics* 42, 209–238.

Choi, J. J. and S. Yoo (2005) Foreign Investment and Firm Performance. Korean Institute of International Economic Policy. (Discussion Paper).

Chirinko, B., H. V., Ees, H. Garretsen, and E. Sterken (1999) Firm Performance, Financial Institutions and Corporate Governance in the Netherlands. (Working Paper 210, CESIFO Working Paper Series.)

Claessens, S., S. Djankov, and G. Pohl (1996) Ownership and Corporate Governance: Evidence from the Czech Republic. (Policy Research Working Paper 1737.)

Claessens, S. and S. Djankov (1999) Ownership Concentration and Corporate Performance in the Czech Republic. (CEPR Discussion Paper No. 2145).

Claessens, S., S. Djankov, and L. Lang (2000) The Separation of Ownership andControl in East Asian Corporations. *Journal of Financial Economics* 58, 81–112.

Companies Ordinance, XLVII of 1984 (1984) P.L.D. Publishers, Lahore.

Daily, C. M., D. R. Dalton, and N. Rajagopalan (2003) Governance through Ownership: Centuries of Practice, Decades of Research. *Academy of Management Journal* 46:2, 151–158.

Dahlquist, M. and G. Robertson (2001) Direct Foreign Ownership, Institutional Investors, and Firm Characteristics. *Journal of Financial Economics* 59, 413–440.

Demsetz, H., and K. Lehn (1985) The Structure of Corporate Ownership: Causes and Consequences. *Journal of Political Economy* 93, 1155–1177.

Doidge, C., G. A. Karolyi, K.V. Lins, and R. M. Stulz (2005) Private Benefits of Control, Ownership, and the Cross-listing Decision. *NBER Working Paper Series* 11162.

Durnev, Art and E. Han Kim (2006) To Steal or Not to Steal: Firm Attributes, Legal Environment, and Valuation. *Journal of Finance* 60: 3, 1461–1493.

Dzierzanowski, M and P. Tamowicz (2004) Ownership and Control of Polish Corporations. *Corporate Ownership and Control* 1, 20–30.

Fama, E. (1980) Agency Problems and the Theory of the Firm. *Journal of Political Economy* 88, 288–307.

Fama, E. and M.C. Jensen (1983a) Agency Problems and Residual Claims. *Journal of Law and Economics* 26:2, 327– 349.

Fama, E., and M. C. Jensen (1983b) Separation of Ownership and Control. *Journal of Law and Economics* 26, 301– 325.

Fama, E., and M. C.Jensen (1985) Organisation Forms and Investment Decision. *Journal of Financial Economics* 14: 101–119.

Faccio, M. and L. Lang (2002) The Ultimate Ownership of Western European Corporations. *Journal of Financial Economics* 65, 365– 395.

Feinberg, R. M. (1975) Profit Maximisation vs. Utility Maximisation. *Southern Economic Journal* 42, 130–134.

Gedajlovic, E. R., and D. M. Shapiro (2002) Ownership Structure and Firm Profitability in Japan. *Academy of Management Journal* 19, 533–553.

Graff, J. De. V. (1950) Income Effect and Theory of the Firm. *Review of the Economic Studies* 1, 79–86.

Griffith, R. (1999) Using the ARD Establishment—Level Data to Look at Foreign Ownership and Productivity in the United Kingdom. *Economic Journal* 109, 416–442.

Hassen, R. (1983) The Modern Corporation and Private Property: A Reappraisal. *Journal of Law and Economics* 26, 273–289.

Hermalin, B. E. and M. S. Weisback (1991) The Effect of Board Composition and Direct Incentives on Corporate Performance. *Financial Management* 20, 101–12.

Himmelberg, C., R. G. Hubbard, and D. Palia (1999) Understanding the Determinants of Managerial Ownership and the Link between Ownership and Performance. *Journal of Financial Economics* 53, 353–384.

Holderness, C., R. Kroszner, and D. Sheehan (1999) Were the Good Old Days that Good? Evolution of Managerial Stock Ownership and Corporate Governance since the Great Depression. *Journal of Finance* 54, 435–469.

Holderness, C. (2003) A Survey of Block Holders and Corporate Control. *Economic Policy Review* 9:1, 51– 63.

Holmstrom, B. and J. Tirole (1993) Market Liquidity and Performance Monitoring, *Journal of Political Economy* 101.

James, H. (1999) Owner as Manager, Extended Horizons and the Family Firm. *International Journal of the Economics of Business* 6, 41–56.

.Javid, Attiya Y. and Robina Iqbal (2007) The Relationship between Corporate Governance Indicators and Firm Value: A Case Study of Karachi Stock Exchange. (PIDE Working Paper 14).

Jensen, M.C. and W. H. Meckling (1976) Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure. *Journal of Financial Economics* 3: 305–360.

Jensen, M.C. (1989) Eclipse of the Public Corporation. *Harvard Business Review* 5, 61–75.

Johnson, S., P. Boone, A. Breach, and E. Friedman (2000) Corporate Governance and the Asian Financial Crisis. *Journal of Financial Economics* 58, 141–186.

Khanna, T., and K. Palepu (1999) Emerging Market Business Groups, Foreign Investors, and Corporate Governance. *NBER Working Paper Series* 6955.

Klapper, L. F., and I. Love (2002) Corporate Governance, Investor Protection, and Performance in Emerging Markets. (Unpublished manuscript).

Klein, P., D. Shapiro and J. Young (2005) Corporate Governance, Family Ownership and Firm Value. *Corporate Governance* 13.

Kocenda, E., and J. Svejnar (2002) The Effects of Ownership Forms and Concentration on Firm Performance after Large-scale Privatisation. William Davidson Institute (Working Paper Number 471).

Kuznetsov, P. and A. Muravyev (2001) Ownership Structure and Firm Performance in Rusia: The Case of Blue Chips of the Stock Market. Economics Education and Research Consortium. (Working Paper No. 01/10).

La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. W. Vishney (1997) Legal Determinants of External Finance. *Journal of Finance* 52, 1131–1149.

La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. Vishney (1998) Law and Finance. *Journal of Political Economy* 106, 1113–1155.

La Porta R, F. Lopez-de-Silanes, A. Shleifer and R. Vishney (1999) Corporate Ownership Around the World. *Journal of Finance* 54, 471–517

La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. Vishney (2000) Investor Protection and Corporate Governance. *Journal of Financial Economics* 58, 3–27.

La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. Vishney (2002) Investor Protection and Corporate Valuation. *Journal of Finance* 57, 1147–1170.

Leech, D., and J. Leahy (1991) Ownership Structure, Control Type Classifications and the Performance of Large British Companies. *The Economic Journal* 101, 1418–1437.

Lehmann, E. and J. Weigand (2000) Does the Governed Corporation Perform Better? Governance Structure and Corporate Performance in Germany. *European Financial Review* 4, 157–162.

Lichtenberg, F. and G. Pushner (1994) Ownership Structure and Corporate Performance in Japan. *Japan and the World Economy* 6, 239–261.

Maury, B. (2006) Family Ownership and Firm Performance: Empirical Evidence from Western European Corporation. *Journal of Corporate Finance* 12, 321–341.

McConnell, J. J. and H. Servaes (1990) Additional Evidence on Equity Ownership and Corporate Value. *Journal of Financial Economics* 27, 595–612.

McConnell, J. and H. Servaes (1995) Equity Ownership and the Two Faces of Debt. *Journal of Financial Economic* 39, 131–157.

Morck, R., A. Shleifer, and R. Vishney (1988) Management Ownership and Market Valuation: An Empirical Analysis. *Journal of Financial Economics* 20, 293–315.

Morck, R., and M. Nakamua (1999) Japanese Corporate Governance and Macroeconomic Problems. Harvard Institute of Economic. (Research Paper.)

Morck, R. K., D. A. Stangeland, and B. Yeung (2000) Inherited Wealth, Corporate Control and Economic Growth: The Canadian Disease? In Randall Morck *Concentrated Corporate Ownership.* National Bureau of Economic Research (NBER). 319–369.

Mudambi, R. and C. Nicosia (1998) Ownership Structure and Firm Performance: Evidence from the UK Financial Services Industry. *Applied Financial Economics* 8, 175–180.

Oulton, N. (2000) Why do Foreign-owned Firms in the UK have Higher Labour Productivity? Bank of England. (Mimeographed).

Pistor, K., M. Raiser, and S. Gelfer (2000) Law and Finance in Transition Economies. *The Economics of Transition* 8, 325–368.

Pistor, K., M. Raiser, and S. Gelfer (2003) Economic Development, Legality and Transplant Effect. *European Economic Review* 47:1, 165–195.

Peres-Gonzalez, F. (2001) Does Inherited Control Hurt Firm Performance. Columbia University? (Working Paper).

Sarkar J. and S. Sarkar (2000) Large Shareholder Activism in Corporate Governance in Developing Countries: Evidence from India. Indian Gandhi Institute for Development Research, Mumbai, India. (Working Paper).

Shleifer, A. and R. Vishney (1986) Large Shareholders and Corporate Control. *Journal of Political Economy* 94, 461–488.

Shleifer, A. and D. Wolfenzon (2002) Investor Protection and Equity Markets. *Journal of Financial Economics* 66, 3–27.

Sheard, P. (1989) The Main Bank System and Corporate Monitoring and Control in Japan. *Journal of Economic Behaviour and Organisation* 11, 399–422.

Sheard, P. (1991) The Economics of Interlocking Shareholding in Japan. *Richerche Economiche* 45, 421–448.

Stein, J. (1989) Efficient Capital Markets, Inefficient Firms: A Model of Myopic Corporate Behaviour. *Quarterly Journal of Economics* 103, 655–669.

Stultz, R. M. (1988) Managerial Control of Voting Rights: Financing Policies and the Market for Corporate Control. *Journal of Financial Economics* 20, 25–54.

Yeh, Y. H. (2003) Corporate Ownership and Control: New Evidence from Taiwan. *Corporate Ownership and Control* 1, 87–101.

Yafeh, Y. (2001) Corporate Governance in Japan: Past Performance and Future Prospects. *Oxford Review of Economic Policy* 16, 74–84.

Zeckhouser, R. J. Pound (1990) Are Large Shareholders Effective Monitors? An Investigation of Share Ownership and Corporate Performance. In R. Hubbard (ed) *Asymmetric Information, Corporate Finance and Investment*. University of Chicago. Chicago Press. 149–180.