

## External Financial Resource Management by Listed Pakistani Firms

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### 1. INTRODUCTION

Enterprises need finance for investment and acquire it either by internally generated finance or externally generated finance, which are closely related to the ownership structure, financial market development and enforcement of law of a country. In underdeveloped companies with foreign owners have an advantage in their access to external finance as compare to domestically owned companies because their financial resources coming from abroad.

Access to external finance is a key determinant of a firm's ability to develop, operate, and expand. Economic researchers have studied how various macroeconomic and microeconomic factors influence such access; for example, it has been shown that the need of external finance to depend on the macroeconomic environment, since economic downturns tend to limit firms' ability to borrow and banks' willingness to lend. This "credit channel" research argues that corporate access to credit is the principal mechanism linking monetary policy and the real economy. At the micro level, research has shown that characteristics specific to a firm influence the degree to which macroeconomic changes affect its access to external financing; specifically, firms that are more vulnerable financially—such as smaller, younger, riskier, and more indebted firms—are found to be more affected by tighter monetary policy.

This is conformed by empirical evidence that firms with high dependence on external finance grow faster in countries where external finance is readily available. Corporations with limited access to external resources may still operate in the informal sector and at a reduced scale in under developed countries [Rajan and Zingler (1998); Livine and Zervos (1998)]. The question remained unanswered what determines the cross-firm differences in investor access to finance for investment especially in emerging markets like Pakistan.

“When laws are protective of outside investors and well enforced, investors are willing to finance firms, and financial markets are both broader and more valuable. In contrast, where laws are un-protective of investors, the development of financial markets is stunted. When their rights are better protected by the law, outside investors are willing

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to pay more for financial assets such as equity and debt. In turn, this enables entrepreneurs to finance their investments externally, leading to the expansion of financial markets” [La Porta, *et al.* (1999)].

Many studies show that to promote economic growth attention has shifted to the capital markets due to the limited conventional sources of raising finance. In capital markets, corporate governance plays important role in determining external financing sources provided by outside investors. Corporate governance institutions appear to be weaker in developing than in developed countries and thus provide less of a check on managers in developing countries who wish to issue equity to finance low return investments. Managers who wish to undertake low return investments in countries with strong corporate governance systems accordingly prefer to rely on internal cash flows to finance these investments, managers making similar investments in countries with weak corporate governance systems are freer to use the equity market as a source of finance. Thus, differences in corporate governance structures will be seen to explain both differences in the sources of finance for investment across countries and differences in the returns on investment [Gompers, *et al.* (2003)]. Corporate governance has recently received much attention for this purpose we also investigate the impact of ownership concentration, and investment opportunities on corporate governance practices and show how important is the firm level corporate governance practices for corporate valuation and access to external finance.

Our empirical analyses identify not only the determinants of external finance resources, but also shows how law influence external financing, corporate governance practice and corporate valuation. To investigate all we use firm level data of 50 corporations listed on Karachi Stock Exchange (KSE). We use Tobin’s Q to measure corporate valuation. To establish the empirical framework on the basis of theory that better legal environment of a country is associated with higher valuation of corporate assets, good corporate governance practice, and financial development, we use the rule of law as indicator of enforcement of law in Pakistan. To understand the effects of ownership, we focus only on the concentration of ownership in the hand of top three shareholders because our this restriction is in line with the previous literature that reveal the fact that in countries with poor legal environment, it is efficient for the corporations to retain control of their firms in hand of few investors.<sup>1</sup>

The remaining of the paper is organised as follows. Section 2 of the paper presents review of the literature. Section 3 describes the data and Methodology. Section 4 presents empirical finding. Section 5 concludes.

## 2. REVIEW OF LITERATURE

Evidence from the previous literature shows that financial market underdevelopment and limited availability of bank credit is serious barrier for the establishment of new enterprises and constraint to economics growth.<sup>2</sup> Recent literature on law and finance shows that investor protection plays an important role in shaping the

<sup>1</sup>See Jensen-Meckling (1976), Zingales (1995) and Bebchuk (1999).

<sup>2</sup>Rajan and Zingales (1998), Levine, Ross (1999), Cetorelli and Philip (2006), De Soto (2000), Beck, Levine, and Loyaza (2000), Black and Strahan (2002), Beck, Demirguk-Kunt, and Levine (1999).

financial structure of an economy, by affecting the relative importance of equity and debt financing.

González, Lopez, and Saurina (2007) examine access by Spanish firms to external financing from bank and non-bank sources over the period from 1992 to 2002 and their results provide insights into the determinants of firms' borrowing efforts in Spain and more broadly. For example, they find that Spanish firms are quite dependent on short-term, non-bank financing, which is less sensitive to firm characteristics than bank financing. Yet, short-term bank financing is accessed more frequently during economic expansions, suggesting that firms substitute away from more expensive forms of non-bank financing as their conditions improve. The authors confirm that smaller, younger, riskier, and more indebted firms rely more on external credit than on internal financing, such as retained earnings and other equity, and they expand these results by showing that the nature of firms' banking relationships, such as the number of banks borrowed from and whether collateral is required for the loans, also influences access to external finance.

In Hyttinen and Pajarinen (2005) study the relation between firm-level disclosure quality and the availability of external finance to Finnish firms. They estimate excess growth is made possible by external finance and the excess growth is associated with the quality of disclosure which seems to be strongest for financially constrained firms. Their empirical analysis identify the firms in need for external finance voluntarily look for good disclosure quality, because it reduces barriers to external finance.

Durnev and Kim (2003) in their paper using firm-level governance and transparency data on 859 firms in 27 countries, find that firms with greater growth opportunities, greater needs for external financing, and more concentrated cash flow rights practice higher-quality governance and disclose more. Moreover, firms that score higher in governance and transparency rankings are valued higher in the stock market. Equally important, all these relations are stronger in countries that are less investor friendly, demonstrating that firms do adapt to poor legal environments to establish efficient governance practices.

The findings of La Porta, *et al.* (1997, 1998) show that weak investor protection limits excess to external finance. While De Soto (2000) suggests that poor legal enforcement of corporate laws and unclear property rights limit individuals' ability to commit contracts and thus their excess to external resources. Shleifer and Wolfenzon (2002) argue that better transparency and disclosure of information to the shareholders, and the enforcement of laws that protect their rights, reduce the costs of external finance. Perotti and Volpin (2007) provide evidence that better investor protection not only favor competition and entry into the financial developed sector, it is also better for the politically accountable countries. The study also suggests that improving formal investor protection laws while ignoring its enforcement may not improve access to finance.

In view of Bekaert, Harvey, and Lundblad (2005) financial liberalisations are most successful in countries with good political institutions. Bebchuk and Neeman (2006) provide evidence that block-holders by using corporate resources protect their control benefits and may undermine good corporate governance. La Porta, *et al.* (1997, 1998a) in their study conclude that differences in the structure of laws and quality of their enforcement, such as legal origin of their laws, play important role for the differences in financial development among different countries. Empirical

results of Beck and Levins (2005) also show that legal origin<sup>3</sup> has very significant impact on firm's abilities to raise to external finance. Their data indicate that firms in French Legal Countries face higher obstacles in contracting for external finance than firms in other countries. Firms in countries with common law face lower financial obstacle than firms in civil law countries. Moreover their result also indicate that foreign-owned firms and large firms face lower financing obstacles than domestic, or small firm, whereas family owned firms particularly face high obstacle in raising external finance. Countries with high GDP face lower obstacle in raising external finance than countries with lower GDP.

This paper is one of the first attempts to study that firms with greater growth opportunities, greater needs for external financing practice higher-quality governance and disclose more. Moreover, firms that score higher in governance and transparency rankings are valued higher in the stock market.

### 3. DATA AND METHODOLOGICAL FRAMEWORK

#### 3.1. Data

To assess determinant of external recourses, corporate governance and firm valuation at firm level, we use data of 50 firms listed at Karachi Stock Exchange.<sup>4</sup> The data set is obtained from the annual reports of these firms for the year 2003, 2004, 2005, 2006 and 2007.<sup>5</sup> 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 five years. That indicates very poor legal environment for Pakistan in term of enforcement of law.<sup>6</sup>

We do not have any direct measure of external finance. Followed by La Porta, *et al.* (1998) we used ratio of the stock market capitalisation held by minorities to sales in 2003, 2004, 2005, 2006 and 2007 for all 50 non-financial firms. Firm *X* stock market capitalisation held by minorities is computed as the product of the stock market capitalisation of firm *X* and the average percentage of common shares not owned by the top three shareholders of firm *X*.

The corporate governance index and disclosure and transparency index are used which are developed by the authors in their study [Javid and Robina (2006)]. 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, there are 22 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, seven for ownership, shareholdings and seven for transparency, disclosure and audit.

<sup>3</sup>La Porta, *et al.* (1998) identify mainly two legal families around the world, common law origin and civil law origin.

<sup>4</sup>List of companies is provided in Appendix Table A1.

<sup>5</sup>The list of variable and set of instruments is given in Appendix Table A2.

<sup>6</sup>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.

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, then, 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 and we arrive at the rating of one sub-index.<sup>7</sup> By taking the average of three sub-indices we obtain CGI for a particular firm.

### 3.2. Methodological Framework

The purpose is to assess the ability of firms to raise external finance through equity, when they have different characteristics (size, investment opportunities, ownership concentration), having adopted different level of corporate governance and doing business in poor legal environment.<sup>8</sup> We examine whether variation in firm-specific need of external finance is associated with level of corporate governance and legal environment is associated with differences in firm value across the firms. For a given level of profitable investment opportunities, firms with greater need of external financing practice high quality governance [Durnev and Kim (2003); Rajan and Zingales (1998)]. The contrary evidence comes from the study by Demirgüç-Kunt and Maksimovic (1998) which argues that profitable firms have more internally generated funds and hence rely less on internal financing. To analyse that firm with more need of external financing practice better governance, we used scores of Corporate Governance Index and scores of disclosure and transparency as independent variable. It is expected that there is positive relation between external financing needs and quality of corporate governance. Further, in countries with weak legal regimes firms have difficulty in raising external finance due to investors' lack of trust in legal protection of their rights [La Porta, *et al.* (1998)]. In this study we analyse the significance of rule of law as determinant of external financing. Since we are assessing influence of legal environment across the firm, therefore we introduced this variable in interaction terms.

To deal with problem that firm specific factors can jointly affect the need of external finance, corporate governance quality of the firm and firm performance and thus induce spurious correlation between them. Therefore we introduce set of control variables: investment opportunities by the firm, firm size, leverage and concentration of ownership. Therefore first we test the following hypothesis:

H1: Firms which are in need of greater external finance practice higher level of corporate governance.

To test this hypothesis we form the following model following La Porta, *et al.* (1997) and Pistor, *et al.* (2000):

$$EF_i = \alpha + \beta_1 CGI_i + \beta_2 Inv_i + \beta_3 Size + \beta_4 Lw_i * CGI_i + \epsilon_{it} \quad \dots \quad (1)$$

Where  $EF_i$  is external finance that is calculated by multiplying market capitalisation of each firm with percentage of shares that are not taken by the top five shareholders of each firm,  $CGI_i$  is a vector of corporate governance index measured by Javid and Robina

<sup>7</sup>Sub-Index include (i) Board composition index, (ii) The ownership and shareholdings Index, (iii) Disclosure and Transparency.

<sup>8</sup>As indicated by the ranking of rule of law by World Bank.

(2006),  $Inv_i$  is investment opportunities measured by the past growth in sales,  $Lw_i$  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.  $\epsilon_i$  is random error term.

H2: Firms with good corporate governance are valued higher.

$$Q_i = \alpha + \beta_1 CGI_i + \beta_2 Exf_i + \beta_3 Own_i + \beta_4 Inv_i + \beta_5 Size_i + \beta_6 Lw_i * CGI + \epsilon_{it} \quad \dots \quad (2)$$

Where  $Q_i$  is Tobin's  $Q$  measured by market value of common equity plus book value of long term debt divided by book value of total assets and other variables are same as defined for model (1). It is expected that firms with better investment opportunities, better corporate governance practices should have higher valuation.

H3: The quality of corporate governance is positively related to growth in investment opportunities, and negatively to concentration of ownership.

Our empirical model takes the following form following Durnev and Kim (2003) and others:

$$CGI_i = \alpha + \beta_1 Exf_i + \beta_2 Own_i + \beta_3 Size_i + \beta_4 Inv_i + \beta_5 Lev_i + \beta_6 Lw_i * Own_i + \beta_7 Lw_i * Exf_i + \epsilon_{it}$$

The variables used in model (3) are same as we defined for model (1). In estimating model (1), (2) and (3) an important issue is endogeneity [Black, *et al.* (2003) and Durnev and Kim (2003)]. A growing firm with large need of external financing has more incentive to adopt better governance practices in an attempt to lower cost of capital [Klapper and Love (2002) and Gompers, *et al.* (2003)]. These growth opportunities are reflected in the valuation of the firm, implying a positive association between governance and firm performance. The firms with more need of external finance would be more likely to choose better governance structure because firm's insiders believe that better governance structure will further raise firm value they adopt good governance to signal that insider behave well and they can easily excess to external finances. This endogeneity problem in estimation is resolved by applying Generalised Method of Moments as estimation technique.

In model (1), we regress external finance on CGI scores and control variables (investment opportunities and size) and interaction of rule of law with CGI scores 3and with growth of investment opportunities. [Durnev and Kim (2003)]. We have estimated in model (2) that how the firm's performance estimated by Tobin Q is influenced by need of external finance, corporate governance indices and other control variables [Kaplan and Zingales' (1997); Black, *et al.* (2002) and Klein, *et al.* (2005)]. The model (3) develops the linkage between corporate governance and ownership concentration, quality of enforcement of law and other firm specific variables and interaction terms [Durnev and Kim (2003)]. In the set of control variables which include size (natural logarithm of assets) and investment opportunities (average sale growth) are used in estimation. Firm size and growth control for potential advantages of scale and scope, market power and market opportunities. The leverage (long term debt/total assets) controls for different risk characteristics of firm. Ownership concentration is expected to improve investor protection. In some firms the entrepreneur founders who used their own resources and

retained earning to finance their firms and have significant ownership stakes in the listed firms, we address this issue by using ownership concentration by top five largest shareholders.

Our models are estimated on the data of 50 firms for the year 2002 to 2007 using panel data estimation technique. This estimation technique is adopted to cope with presence of endogeneity in governance variables [Black, *et al.* 2002) and Durnev and Kim (2003)]. A firm with foreign investment is assumed to be adopting good governance practice and has likely to have more access to external finance. In the same way the block holding firm<sup>9</sup> is associated with more monitoring and more familiar with good governance practices and have easier to get external finance. The longer the period of listing, the more chances of investors to familiar with investment strategy of firm and less likely chances of information asymmetry and this limit the ability of firm to impose poor practice and more likely chances of getting cheap finance. The difference in profit earning opportunities is associated with difference in value of the firms, more profit earning firms need access to capital markets to raise new capital and find it optimal to improve their governance practices.

#### 4. EMPIRICAL EVIDENCE

To investigate whether differences in the quality of firm level corporate governance also help to explain firm level financial needs in a cross-section of companies we regress external financing need on index of corporate governance (CGI) and control variables. The results indicate that there is positive association between need of equity financing and quality of corporate governance taken as aggregate corporate governance index and also with board composition and transparency and disclosure scores of these firms. This suggests that firms which need more equity financing practice good governance and they are more transparent. The sub-index shareholdings and ownership is negatively associated with need of external financing indicating that the firms which have more concentrated shareholdings they depend less on external financing Thus with good corporate governance standards in place, it is ultimately the financial market which rewards good governance practices and punishes bad governance. The interaction term of law with corporate governance have no significant impact. The investment opportunities are positively related to external finance and suggest that firms with high growth are in more need of external finance. Its interaction term with law has also positive influence on external financing requirements across firms. These results suggest legal environment matters in case when they firms rely more on external financing sources. The firm specific factors matters more in influencing the need of external financing when the legal environment is less investor friendly.

To investigate the relation between firm value and corporate governance, Tobin's Q is regressed on corporate governance and firm attributes: investment opportunities, size, and concentration of ownership and need of external finance. Due to multicollinearity in the variables: need of external financing and ownership concentration we run two separate regressions using these two variables as explanatory variables. Positive and significant coefficient of CGI reveals the fact that firms with higher-quality

<sup>9</sup>Block holder is defined by any investors having shareholdings of more than 10 percent.

corporate governance are valued higher. When we regress Tobin's  $Q$  on sub-indices of corporate governance, we find positive and significant results for Board and Disclosure but positive and insignificant for Shareholder Rights. In general the ownership and shareholders rights that align the managers and shareholders interest are significantly valued by investors. This is also true for board composition and independence index. Both sub-indices board and disclosures have positive association with firm performance. These results are consistent with agency theory which focuses on monitoring of managers whose interests are assumed to diverge from those of other share holders.

Table 1  
*Evidence on Determinants of External Financing*  
*Dependent Variable is EXF*

Independent Variables	1	2	3	4
CGI	0.38* (12.91)			
Disc		0.62* (3.87)		
Board			0.25* (7.63)	
Shareholders Rights				-0.12 (-7.11)
Inv	0.004* (6.00)	0.01** (5.51)	0.001* (5.41)	0.001 (13.38)
Size	-1.76* (-4.29)	-4.68* (-3.89)	-4.18* (-9.61)	-2.82* (-30.64)
Lw*CGI	0.63 (8.14)	0.08* (0.17)	0.58* (5.95)	0.85 (16.24)
Constant	-4.84 (-4.71)	16.89 (8.62)	5.84 (5.00)	31.88 (17.61)
R <sup>2</sup>	0.68	0.31	0.31	0.44

The table reports the determinants of external finance estimated by Generalised Method of Moment:

$$EF_i = \alpha + \beta_1 CGI_i + \beta_2 Inv_i + \beta_3 Size + \beta_4 Lw_i * CGI_i + \epsilon_{it}$$

$EF_i$  is external finance that is calculated by multiplying market capitalisation of each firm with percentage of shares that are not taken by the top three shareholders of each firm.

$CGI_i$  is corporate governance index measured by Javid and Robina (2006),  $Inv_i$  is investment opportunities measured by the past growth in sales,  $lw_i$  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.

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

However the assumptions of agency theory are not applied to block holder owned firms. Most of the firms listed on KSE are family owned or institution owned. In these firms the alignment of ownership and control is tight and thus suggesting the need of outside directors on the board. Interaction term for need of external finance with law has the expected positive sign for Pakistan with poor legal environment. This result is consisted with notion that positive relationship between need of external finance and the firm valuation is stronger in weak legal regime. The study by Dernev and Kim (2003) also conclude that high class corporate governance is valued higher in case of US market. The concentration of ownership has positive impact on the firm performance. The interaction term of rule of law with ownership concentration is negative and significant



suggesting that with less legal protection investor chose to invest out of internal sources and results in more concentration of ownership. This results validated La Porta (2002) hypothesis the concentration of ownership is response of weak legal environment.

Investment opportunities have positive and significant impact on corporate valuation measured by the Tobin's  $Q$  all specifications. Our results confirm our predictions that firms with better investment opportunities have higher valuation. The coefficient of size is positive and significant in most of the cases. This shows that the listed firms that are likely to grow faster usually have more intangible assets and they adopt better corporate governance practices. The result of interaction term of rule of law with corporate governance does not have any significant impact on the valuation of the firm. These results indicate that legal framework is not providing relevant information regarding firm valuation in case of Pakistan.

Table 2  
Evidence on Firm Performance and Corporate Governance  
Dependent Variable is Tobin  $Q$

Independent Variables								
CGI	0.005* (6.54)			0.00* (5.43)				
Board	0.005* (4.71)			0.01* (4.71)				
SR	0.01* (7.53)			0.003* (6.47)				
DIS	0.01* (2.41)			0.01** (3.66)				
EXF	0.004* (8.76)	0.004 (10.81)	0.001* (3.15)	0.001* (3.10)				
Own					-0.20* (-3.67)	-0.09* (-6.43)	-0.23* (-2.57)	-0.02* (12.45)
INV	0.001 (0.16)	0.33* (5.83)	0.36* (4.43)	0.22* (3.10)	0.001 (0.30)	0.002* (2.26)	0.01 (0.64)	0.001* (2.67)
SIZE	0.07* (4.86)	0.03* (4.08)	0.05* (3.11)	0.03* (3.69)	0.06* (5.84)	0.04* (3.15)	0.05** (5.68)	0.05* (3.87)
LAW*CGI	0.002 (0.10)	-0.001 (-0.11)	0.01 (0.06)	0.001 (0.68)	0.002 (0.13)	-0.02* (-2.55)	0.001 (0.14)	0.003 (0.34)
Constant	0.90 (6.04)	0.62 (6.24)	0.43 (9.96)	0.44 (9.96)	1.87 (7.12)	1.32 (4.87)	2.21 (2.39)	0.53 (5.89)
R <sup>2</sup>	0.59	0.61	0.47	0.45	0.59	0.61	0.47	0.45

The table reports the results of relationship between firm valuation and corporate governance estimated by Generalised Method of Moment:

$$Q_i = \alpha + \beta_1 CGI_i + \beta_2 Exf_i + \beta_3 Own_i + \beta_4 Inv_i + \beta_5 Size_i + \beta_6 Lw_i * CGI + \epsilon_{it}$$

$Q_i$  is Tobins'Q measured by market value of common equity plus book value of long term debt divided by book value of total assets.

$CGI_i$  is corporate governance index,

$Own_i$  is ownership concentration with top five shareholders

$Inv_i$  is investment opportunities as measured by the past growth in sale,

$Lw_i$  is rule of law,

$Size_i$  is measured by the log of total asset, and Lev is leverage measured by book value of long term debt divided by book value of total asset.

The \*, \*\* and \*\*\* indicates the significance levels at 1 percent, 5 percent, and 10 percent respectively. Values in parenthesis are  $t$ -statistics.

However, these findings are consistent to some extent with the notion that positive relationship is between governance and valuation is stronger in weak legal regimes [La Porta, *et al.* (1997)]. This explains the reason of mixed relation between firm valuation and corporate governance in US firms which are subject to strongest legal framework worldwide. [La Porta, *et al.* (1998) and Dunev and Kim (2003)].

Table 3

*Evidence on Determinants of Corporate Governance*

	Dependent Variable is CGI			Dependent Variables is Disclosures		
<i>Exf</i>	0.12*			0.10*		
	(4.29)			(2.15)		
<i>Own</i>		-3.53*	-3.43*		-3.32*	-3.52*
		(-3.32)	(-2.27)		(-4.52)	(-3.93)
<i>Inv</i>	0.001**	0.002*	0.001	0.37*	0.001*	0.001*
	(1.50)	(2.48)	(0.63)	(3.11)	(2.47)	(2.06)
<i>SIZE</i>	0.92*	0.94*	0.29**	0.20*	0.10*	0.05*
	(3.14)	(3.16)	(1.92)	(2.93)	(2.46)	(7.79)
<i>Lev</i>			0.40*			0.02*
			(19..70)			(2.48)
<i>LAW*Exf</i>	-0.10***			-0.04		
	(-1.22)			(-2.58)		
<i>LAW*Own</i>		0.14	0.57*		-1.02*	-0.48**
		(0.52)	(2.72)		(-4.76)	(-1.85)
<i>Constant</i>	5.93	0.48	7.49	5.79	7.45	7.43
	(2.58)	(1.27)	(7.79)	(6.30)	(2.29)	(7.14)
<i>R2</i>	0.47	0.31	0.47	0.27	0.30	0.27

The table reports the relationship between corporate governance, ownership concentration and investment opportunities estimated by Generalised Method of Moment:

$$CGI_i = \alpha + \beta_1 Exf_i + \beta_2 Own_i + \beta_3 Size_i + \beta_4 Inv_i + \beta_5 Lev_i + \beta_6 Lw_i * Own_i + \beta_7 Lw_i * Exf_i + \epsilon_{it}$$

$CGI_i$  is a vector of governance index.

$Exf_i$  is external finance that is calculated by multiplying market capitalisation of each firm with percentage of shares that are not taken by the top three shareholders of each firm.

$Lw_i$  is defined as rule of law capturing the enforcement quality of legal regime.

$Inv_i$  is investment opportunities measured by the past growth in sale.

$Size_i$  is measured by the log of total asset, and  $Lev$  is leverage measured by book value of long term debt divided by book value of total asset

$Own_i$  is ownership concentration by the firms and calculated as percentage shareholdings by top three shareholders. Size is measured by the log of total asset.

$Lev_i$  is leverage defined as book value of long term debt divided by book value of total assets

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

We regress individual firm corporate governance score on need of external finance, ownership concentration, capital structure investment opportunities, size and interaction term of rule of law with need of external finance and ownership concentration. The need of external finance by the firms have positive impact both CGI and Disclosure scores. This confirms the theoretical notion that firms which rely more on external equity sources for their expansion they perform better corporate governance practices and disclose more. The interaction terms of legal regime with

external finance show negative and significant relationship with CGI and Disclosure scores which suggests that in legal environment which is less investor friendly pushes the firms to adopt better corporate governance practices and become more transparent.

Ownership structure shows negative and significant relationship with CGI and Disclosure scores. When an interaction term of ownership concentration with rule of law is included we also find negative and significant impact of legal environment. This suggests that weakness of investment protection and absence of corporate control firms rely on governance structure that is dominated by high concentration of ownership.

The firm with concentrated ownership there is no reason to expect firms to disclose more. The inclusion of disclosure and transparency scores and other attributes are included in CGI scores also and they are not directly related to agency problem. In addition, this result indicates that positive relationship between corporate governance and ownership concentration is strong with weak legal regime. The Dunev and Kim (2003) have come up with same finding in case of US market.

The coefficient of leverage is positive and significant, which is consistent with the prediction of standard theory of capital structure which says that high levered firm adopt better practices and the higher leverage increase firm's value [Rajan and Zingales (1998)]. The positive sign of the coefficient of size shows that large firms show better governance. Investment opportunities have positive impact both CGI and Disclosure scores. This confirms the theoretical notion that firms with better investment opportunities perform better corporate governance practices and are transparent.

## 5. CONCLUSION

Economic researchers have studied how various microeconomic and macroeconomic factors influence access to external finance widely for the developed markets but very little work has been done on how factors effect access to external finance in case of emerging markets. In this study we fill this gap by analysing an important issue of our times that firms that practice good governance and better disclosures are one who raise external finance and are growing faster for the Karachi Stock Market. To address this issue empirically we estimated three models. First, we investigate that the firms with greater needs for external financing practice higher-quality governance and disclose more. Second, firms that score higher in governance and transparency rankings are valued higher in the stock market. Third, the quality of corporate governance is positively related to growth in investment opportunities, and negatively concentration of ownership. Our sample firm consists of 50 firms which are active, representative of all non-financial sectors and comprises more than 80 percent of market capitalisation at Karachi stock market. The period covered is 2002 to 2007 because SECP has announced the Corporate Governance Ordinance 2002 and panel data estimation technique is used for analysis.

In this study, we presented a simple model of determinants of external finance. Our result shows that the strength of corporate governance systems affects the external financing needs of corporations. This suggests that firms which need more equity

financing practice good governance. Thus with good corporate governance standards in place, it is ultimately the financial market which rewards good governance practices and punishes bad governance. The results show that firms with high growth and large in size are in more need of external finance. Our results also generally confirm the crucial prediction of the theory that positive relationship between corporate governance and valuation is strong in weak legal regime countries like Pakistan. Thus legal protection is essential for effective corporate governance. One implication that comes out from these findings that pro-growth policies generate more profitable investment opportunities and stimulate the external financing needs of the corporations Our results adds an important link to the explanation of the consequences weak legal environment for financial market development, external financing, corporate valuation and corporate governance.

Table A1

*List of Companies*

Companies	Symbols
(1) Aruj Garments	ARUJG
(2) Honda Atlas	HONDAA
(3) Engro Chemical	ENGRO
(4) Unilever Pakistan	UNIP
(5) Pakistan Gum and Chemicals Ltd	PAKGUM
(6) Abbot Pakistan	ABBOT
(7) Sakrand Sugar Mills	SAKSM
(8) Pakistan Hotel Development Ltd	PAKH
(9) Bata Pakistan	BATA
(10) Pakistan Petroleum Ltd	PPL
(11) Oil and Gas development Corp Ltd	OGDC
(12) Agriauto Industries Ltd	AGRI
(13) Pakistan PVC Ltd	PAKPVC
(14) Pakistan Papersack Corporation	PAKPAPC
(15) Mandviwalla Mauser	MANDM
(16) Shahtaj Sugar Mills	SHAHT
(17) S.G. Fibre Ltd	SGFL
(18) Mirza Sugar Mills	MIRGAS
(19) Emco Industries Ltd	EMCOI
(20) Metropolitan Steel	METRO
(21) Moonlite (Pak)	MOONLITE
(22) Merit Packing Ltd	MERITP
(23) Pakistan Services	PAKS
(24) ICI Pakistan	ICIPAK
(25) Suzuki Motorcycles	SUZM
(26) Mohammad Farooq Textiles	MOHFT
(27) Paramount Spinning Mills	PSM
(28) Azam Textiles	AZAM
(29) Dar Es Salaam	DARES
(30) Sindh Abadgars	SINDHA
(31) Ellcot Spinning Mills	ELLCOTS
(32) Ayesha Textile	AYSHAT
(33) Brother Textiles Ltd	BROTHERT
(34) Mitchell's Fruit	MITCH
(35) Indus Polyester Company	INDUSP
(36) Mirpurkhas Sugar Mills	MIRS
(37) Nestle Pakistan	NESTLE
(38) Din Motors	DINM
(39) Indus Motors	INDUSM
(40) Maple Leaf Cement	MAPLEL
(41) National Refinery	NATR
(42) Pakistan Tobacco	PAKTAB
(43) Dawood Hercules	DAWOODH
(44) Sui Northern	SUIN
(45) Fuji Fertiliser	FFC
(46) Fuji Bin Quasim	FBQ
(47) PTCL	PTCL
(48) Ferozsons Ltd	FERL
(49) Southern Electric	SOUTE
(50) Japan Powers	JAPP

Table A2

*Description of Variables*

Variable	Symbol	Definition
External Equity Finance	<i>EXF</i>	Market capitalisation of each firm multiply with percentage of shares that are not taken by the top five shareholders. <i>Source</i> : Market capitalisation from Business Recorder's website ( <a href="http://www.brecorder.com.pk">www.brecorder.com.pk</a> ), percentage of shares are not held by top five shareholders is obtained from annual reports of corporation.
Firm Value	<i>Q</i>	Tobin Q defined as sum of the book value of long term debt and market value of the equity divided by the book value of the total asset. <i>Source</i> : Annual Reports of Corporations.
Investment Opportunities	<i>Inv</i>	Average Sales Growth. <i>Source</i> : Annual Reports of Corporations
Corporate Governance	<i>CGI</i>	Score of Corporate Governance Index. <i>Source</i> : Javid and Robina (2006).
Disclosure	<i>Dis</i>	Disclosure and Transparency Scores. <i>Source</i> : Javid and Robina (2006).
Ownership Concentration	<i>Own</i>	Percentage of share ownership of first five largest shareholders. <i>Source</i> : Annual Reports of Corporations.
Size of the Firm	<i>Size</i>	Ln(Assets). <i>Source</i> : Annual Reports of Corporations.
Law	<i>Lw</i>	Rule of law. <i>Source</i> World Bank.
Leverage	<i>Lev</i>	Book value of Long term Debt/Book value of total asset. <i>Source</i> : Annual Reports of Corporations.

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