Financial Liberalization, Institutional Development and Payout Policy Changes: The Case of Pakistani Economic Reforms of 1990s

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This study investigates the impact of financial reforms of 1990's on dividend policy along with exploring its determinants for three hundreds and seventy four publically listed firms on Karachi Stock Exchange (KSE) from 1988 to 2008. To assess the impact of financial reforms on dividend policy and pointing out its determinants, the Generalized Methods of Moments (GMM) econometric technique is used. Empirical results based on the data suggest a positive impact of profitability on current year's dividend payout. Last years' dividend per share was found to be the strongest positive predictor of dividend payments. Liquidity, historical reserves and size are the other strongest and most influential positive predictors of dividend behaviour. Furthermore, firms with higher debt to equity ratio and larger reserves in the current year together with more growth opportunities pay lesser dividends. Tax payments were found to have a negative relationship with dividend payout. Based on an index for financial reforms, the results reveal a strong positive impact of the reform process on dividend payments.

Key words: dividend policy, financial reforms, GMM, Pakistan.
JEL Codes: G30, G35, G38

Dividends policy and firms behaviour on dividend payments has been a significant area of research in the field of financial economics. Firms have the option either to retain their earnings or distribute them to stockholders in the form of dividends. But retention is comparatively advantageous in that firms can reinvest their earnings in profitable projects. The phenomenon of paying dividends is therefore questioned by many financial economists over the last four decades.

The research on the puzzle of advancing dividends by firms goes back to Miller and Modigliani's (1961) irrelevance theory[1]. This theory has led to a vast body of empirical research on identifying and determining the factors such as last year's dividend's payout, profitability, liquidity, leverage, size, growth, and taxes that influence dividend policy, for instance (Al-Malkawi, 2007; Asif, Rasool, & Kamal, 2011; Faccio & Lang, 2002; Jensen, Solberg, & Zorn, 1992; Miller & Rock, 1985). However, the significance of the debate on Dividend Policy in Corporate finance got momentum after Black's (1976) Dividend Puzzle[2]. Empirical research was carried out later to single out these determining factors by relaxing the assumptions of Miller and Modigliani's "irrelevance theory" and to come up with reasonable answers to the query as to why firms distribute enormous amounts of dividends to stockholders, where in fact they can retain their cash flows that can be used for reinvestments.

The complexity of dividend puzzle has been highlighted very extensively across research in financial economics. Feldstein and Green (1983) argue that "the nearly universal policy of paying substantial dividends is the primary puzzle in the economics of corporate finance". They have more specifically questioned "Why do not corporations eradicate (or for that matter stridently reduce) their dividends and boost their retained earnings?" Probing the puzzle of dividends payments, Miller (1977) focused on the tax disadvantages of retention. He did not offer any clarification as to why, after all, firms distribute so much cash in the form of dividends although the firm has a clear edge to retain earnings due to tax benefits. One of the much needed debates pertaining to the effect of financial reforms of 1990s is seen to be missing in almost all of the empirical studies about dividend payout behavior. Most of the existing studies have focused on factoring out the determinants of dividends policy ignoring the impact of financial reforms. Some studies suggest that reforms programs reduce financial constraints, for instance (Gelos & Werner, 2002; Love, 2003; Myers & Majluf, 1984). Consequently, the firms shift from debt to equity markets (Margaritis & Psillaki, 2010; Rajan & Zingales, 1995).

Looking back into history it can be seen that the policies of developing economies were very repressionist and regulated. These regulations and repressions gave a spur to the policy makers in the emerging economies including Pakistan to look into their policies and re-assess them. The re-assessment of previous policies gave impetus to search for alternatives. Consequently steps were taken to free these economies from unnecessary repressions and regulations in order to organize and to make the stock market more efficient. For this purpose, a broad based reform program was launched to enhance the economic

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[1] Irrelevance theory states that in a frictionless market with perfect competition dividend policy does not affect the value of a stock. This assertion leads to a crucial question "If a firm can in practice shun distributing cash or at least for that matter postpone payouts for a very long time without impairing stockholders wealth in frictionless setup, why would the firm then distribute cash when flotation costs, taxes, and/or asymmetric information problems encourage retention?"

[2] This puzzle is aptly stated by Black himself: "The harder we look at dividend the more it seems like a puzzle with pieces that just don't fit together, (Blac1976)."

growth (Aqeel & Nishat, 2004; Shahbaz & Rahman, 2010). Consequently, 1990s witnessed many initiatives including privatization and opening of new banks, autonomy of the State Bank of Pakistan and its restructuring, credit and monetary management, exchange and payments reforms besides others. The main objectives of these programs were firstly to instill competition in financial institutions; secondly, adopting a market-oriented monetary, exchange and credit management system and thirdly to strengthen the governance and supervision of financial institutions.

The present study, in its own way, is the first attempt being made to analyze the behavior of divided policy using up to date data along with controlling for financial liberalization and institutional development in Pakistan during 1990s explicitly. For this purpose, a financial liberalization and institutional development index[3], constructed through principle components method, is used in the study to capture the effect of reform process on dividend payments. The index is intended to capture the effect of reforms efficiently as reforms are not a one shot event rather it is a process which takes time to show its various outcomes. The main objective of this study is to analyze the impact of financial reforms process on dividend policy of the listed firms on KSE. The study also intends to determine the factors that influence the dividends payments and to analyze the adjustment process of dividend policy of publicly listed firms in Pakistan.

Rest of the paper is organized as follows: Section 2 presents the literature review. In section 3 econometric models along with the data is discussed. It also highlights some of the limitations of the data. In section 4 the results obtained through GMM are thoroughly discussed and the last section i.e. section 5 presents conclusion of the study and comes up with some policy recommendations.

Literature review

Lintner (1956) was the first to carry out an extensive empirical study about dividend policy. He proposed that managers like to have stable dividend payout policy and that dividends are increased gradually and that most companies have a target payout ratio which they pursue. His analysis shows that firms adjust their dividend payments at a specific speed of adjustment so as to fill the gap between the actual dividend payments and the target payout ratio. Fama and Babiak (1968) extended Lintner's (1956) work by using different models for explaining dividend payments behavior.

Adaoglu (2000) analysis, of dividend policy behavior of the firms listed on Istanbul stock exchange, shows that firms dividend payments are determined by earning of the firms. Omet (2004) supports Adaoglu (2000) with a suggestion that tax on dividends does not have a significant effect on the dividend payments decision. Exploring the behavior of dividend policy for the Greek firms. Eriotis and Vasiliou (2011) report that there is a strong positive association between dividend payments and the target payout ratio. While investigating the influencing factors of the dividends policy of the firms listed on Tunisian Stock exchange. Ferris, Sen, and Unlu (2009) observed that high profitable firms with stable earnings pay comparatively more dividends. Furthermore firms with high growth opportunities pay larger dividends which attract more investors (Denis, 2011).

W. Li and Lie (2006) find out that firms live long existence is possible only when they pay dividend and experience increase in their share prices. Further, they argued that those firms who pay dividend experience multiple times increase in their share price compare to those firms who retain their profits. Analyzing the behavior of Indian firms, Redding (1997) and Gupta, Dogra, and Vashisht (2013) reported that those firms which pay dividends are more profitable, larger in size and have more growth opportunities. Further, tax preference theory doesn't appear to hold good in Indian case (Reddy Yarram, 2002). Similarly Amidu and Abor (2006) shows that the dividend policy of listed firms of Ghana Stock Exchange is determined by the profitability, cash flow position and growth opportunities of the firm. Investigating the dividend policy behavior of Canadian firms, Baker et al. (2007) shows that firm with larger size and more profitability; having more free cash flow and growth opportunities pay higher dividends.

Shiller et al.(1984) examined the effects of dividend in both "traditional economy "and contemporary economy" and find out that "traditional economy" stocks offer low returns and having less potential then "contemporary economy" stocks which contribute immensely in firms growth. Bondt and Thaler (1985) concluded that dividend and capital gain provide flexibility to investors in decision making, dividend decline represent capital gain are low, but when the capital gain are high the investors earns two fold dividends from profitability and value maximization from capital gain.

Martikainen (1990) found positive relationship between dividend growth rate and stock prices by studying the 28 Finnish companies for a period of (1975-1986). Her analyses confirm that increase in stock prices increase the dividend growth. D'Souza (1999) finds negative correlation between the agency cost and market risk with dividend payments, though results does not confirm a negative relationship between dividend payments and investment opportunities.

According to Miller and Modigliani (1961) optimal capital structure and optimal dividend policy does not affects firm's value and explained that dividend policy and cost of equity are irrelevant. They argue that there is no optimal capital structure level exists because each level works under certain assumptions, like no taxes, perfect capital market. Their analyses indicate that equity holder can earn maximum returns either through debt or equity financing. In addition, they argued that increase in leverage provide opportunity of tax shield benefit to debt holders.

DeAngelo and DeAngelo (2006) revises Miller and Modigliani (1961) observations that firms distribute all of

[3] Details of the index are given as appendix 1.

its profits and therefore dividends payouts are not relevant. While DeAngelo argued that if firms retain some of its profits then dividend policy is relevant due to suboptimal policy adoption by firms, investing in projects whose net present value is not zero. Keeping in view the aforementioned studies and the objectives of this study following research hypotheses are formulated:

Dividends payments are positively related to firm's profitability, firm size, historical dividends payments, liquidity, and last year's reserves (H_1)

Firm's dividend payments are negatively correlated with its reserves, growth, and
Leverage and tax rate (H_2)

Financial Reforms and institutional development have a positive impact on dividend payments. (H_3)

Method

The general econometric model to be estimated in this study for analyzing the behavior of dividend policy is given by the following equation:

$$DPS_{it} = \beta_0 + \beta_1 DPS_{i,t-1} + \beta_2 SIZE_{it} + \beta_3 PROF_{it} + \beta_4 LPROF_{i,t-1} + \beta_5 RES_{it} + \beta_6 LRES_{i,t-1} + \beta_7 INVOP_{it} + \beta_8 TAX_{it} + \beta_9 LEV_{it} + \beta_{10} NLA_{it} + \beta_{11} FLIDI_t + \varepsilon_t$$

Where

DPS_{it} = Dividends per share of ith firm in time t	$LRES_{i,t-1}$ = Last year's Reserve of ith firm
$DPS_{i,t-1}$ = Last year's Dividends per share of ith firm	NLA_{it} = Net Liquid Assets of the ith firm in time t
$SIZE_{it}$ = Size of the ith firm in time t	$INVOP_{it}$ = Investment opportunities as proxied by Growth of the ith firm in time t
$PROF_{it}$ = Profitability of the ith firm in time t	TAX_{it} = Corporate Taxes on i[th] firm in time t
$LPROF_{i,t-1}$ = Last year's profitability of the ith firm	LEV_{it} = Leverage (Debt/Equity ratio) of the ith firm in time t
RES_{it} = Reserves of the ith firm in time t	$FLIDI_t$ = Financial Liberalization and institutional development Index for Pakistan in time t
ε_{it} =Error term	

Dynamic panel data suffers from various problems such as endogeneity, omitted variables bias, and heteroscedasticity. In dynamic models, the ordinary least squares (OLS) method results in inconsistency and upward biasness by the inclusion of the autoregressive term ($Y_{i,t-1}$) to serial correlation of the autoregressive term and the error term (ε_{it}).

Further, OLS can't control for simultaneity bias, neither can it control explicitly for firm specific effects. This inconsistency persists even when number of cross-sectional observations (N) and time-series observations (T) grows larger. Pesaran and Smith (1995) have suggested that serial correlation can be removed by first differencing; however they express their reservations as to the generalization of this approach. In such a situation, we will use the Generalized Methods of Movements (GMM), instrumental variable econometric technique. GMM is used to control for the problem of endogeneity, heteroscedasticity and autocorrelation which arises due to dynamic panel data estimation.

Table 1
Description and Expected Signs of the Variables of the Model and their Description
Dependent Variable: Dividends per Share[4]

Explanatory Variables	Symbol Used	Description	Expected Sign
Firm's last year's dividends per share	LDPS	Last year's total dividend/total shares outstanding	+
Firm's Profitability	PROF	Return on assets	+
Firm's Last year's profitability	LPROF	Last year's return on assets	-
Reserves of the firm	RES	Surplus of the firm	+
Last year's reserves of the firm	LRES	Surplus(-1)	
Net Liquid Assets of the firm	NLA	Current Assets – Current Liabilities	+
Size of the firm	SIZE	ln (Total Assets)	+
Investment Opportunities	INVOP	Annual Growth of Sales	-
Leverage of the firms	LEV	Debt/Equity or Total Liabilities/Total Assets	-
Corporate Tax	TAX	Tax Provision/EBT	-
Financial Liberalization and Institutional Development Index	FLIDI	FLIDI	+

Data Description

Data set that is used in this study is taken from the "Balance Sheet Analysis of Joint Stock Companies, listed on the Karachi Stock Exchange", published by State Bank of Pakistan, annual reports of Karachi Stock Exchange for the relevant years and Business Recorder. The data set includes financial accounts of the firms under consideration. These financial accounts comprises of corporate financial data of 374 firms that were publicly listed on Karachi Stock Exchange for the period 1988 to

[4] Dividend per share is calculated as total amount of dividends divided by total number of shares outstanding in this study.

2008 (twenty one years). This makes total number of observations equal to 7854 (374*21). Although total number of firms listed on Karachi Stock Exchange in the year 2008 were 436 but sample in this study includes 374 firms. This is either due to delisting of many of the defaulter firms or because data were missing for some years which posited the problem of unbalanced panels. Classifications of the industries that are considered are given in Table 2.

Table 2
*Classification of Industries**

S No	Industries Considered for Analysis	No. of firms
1	Textile	166
2	Chemicals	26
3	Engineering	36
4	Sugar & Allied Industries	35
5	Paper & Board	10
6	Cement	16
7	Fuel & Energy	18
8	Transport & Communication	5
9	Tobacco	3
10	Jute	6
11	Vanaspati & Allied Industries	7
12	Miscellaneous	46
	Total	374

*Based on the State Bank of Pakistan's classification

Empirical Results and Discussion

In the following section empirical results of the study along with their discussion is given. In order to have a robustness check correlation matrix is calculated and as shown in Table 3. The correlation values are smaller than 0.5 indicating the absence of multicollinearity among the variables under consideration. Furthermore, as can be observed in Table 4, instrumental rank is much smaller than J-statistic suggesting that the model is not over-identified.

Table 3
Descriptive Statistics of Dependent and Explanatory Variables

	DPS	PROF	SIZE	RES	NLA	GROW	LEV	TAX	FLIDI
Mean	.000002	21.199	2459.84	42.99	-744.18	127.15	308.05	28.34	10.2
Median	0.000003	13.64	509.1	4.0	-188.3	16.5	130.2	7.6	13.0
Std. Dev.	.00001	116.5	9321.7	963.74	3524.2	6590.3	5501.4	544.9	4.3
Observations	6663	6663	6663	6663	6663	6663	6663	6663	6663

Correlation Matrix

	DPS	PROF	SIZE	RES	NLA	GROW	LEV	TAX	FLIDI
DPS	1								
PROF	0.454	1							
SIZE	0.0264	-0.006	1						
RES	0.0205	0.016	0.091	1					
NLA	-0.017	0.017	-0.73	0.278	1				
GROW	0.015	0.0048	-0.0039	-0.0008	0.003	1			
LEV	-0.007	-0.005	0.088	-0.102	-0.1003	-0.0009	1		
TAX	-0.002	-0.001	-0.0016	-0.024	-0.0008	-0.0008	-0.0013	1	
FLIDI	0.017	-0.029	0.112	0.018	-0.087	0.0085	0.001	0.009	1

Last Year's Dividends per Share

Dividend declaration in the previous period on average affects the current period dividend by 0.657 rupees. The positive and statistically significant coefficient of the historical dividend per share suggests that the firms included in the sample have stable dividend policy. Although the magnitude of the coefficient is comparatively low to advanced and developed economies. For example for U.S. companies it is 0.834 (Aivazian, Booth, & Cleary, 2003). Put differently, the speed of adjustment for the firms listed on Karachi Stock Exchange is equal to 1-.6571 = .3429, assuming Lintner's adjustment coefficient to be equal to 1, which is very low compared to advanced economies.

Size of the Firm

As far size of the firm is concerned, it is, according to theoretical predictions, positive and significant with a coefficient of 0.4621.Theoretical reasoning for this is that larger firms have more bargaining power and the ability to raise debt (J. Li, 2013). Also, bigger firms are less susceptible to bankruptcy than smaller firms. Same result is obtained by various empirical studies (Al-Kuwari, 2009; Al-Malkawi, 2007; Eddy & Seifert, 1988; Fama & French, 2001; Holder, Langrehr, & Hexter, 1998; Sirait & Siregar, 2014; Travlos, Murinde, & Naser, 2002)

The result corroborates the Agency Theory of Dividend Policy. Higher agency costs faced by bigger firms owing to it complex operations, shareholders cannot watch closely the activities of the firm very closely and ownership dispersion. Therefore, these firms pay larger amount in dividends to decrease the agency costs (Jensen & Meckling, 1976 ; Lloyed et al. 1985).

Table 4
GMM Estimation Results

Dependent Variable: Dividends per Share				
Explanatory Variables	Symbol	Coefficient	t	p
Last year's Dividends per Share	LDPS	0.6571	1264.1670	0.0000
Profitability	PROF	0.0270	19.3019	0.0000
Last year's Profitability	LPROF	-0.0127	-12.5007	0.0000
Size	SIZE	0.4621	19.5905	0.0000
Reserves	RES	-0.0075	-79.8906	0.0000
Last Year's Reserves	LRES	0.0014	28.0782	0.0000
Net Liquid Assets	NLA	0.0021	12.1613	0.0000
Investment Opportunities	INVOP	-0.0001	-7.0634	0.0000
Leverage	LEV	-0.0012	-18.6219	0.0000
Tax	TAX	-0.0030	-9.5607	0.0000
Financial Liberalization and Institutional Development Index(FLIDI)	FLIDI	1.1215	63.5337	0.0000
Instrument rank		200.00		
J-statistic		238.5634		

**Estimations in table 2 are obtained through Eviews 5.1.*

Profitability

Results of the study reveal that profitability (which is proxied by return on assets) of the firms listed on Karachi Stock Exchange has a positive and significant correlation with dividend payment. As proposed by the signaling theory of dividends, current year's profitability has strong positive association with dividend payments. The results also corroborate the residual cash flow theory of dividends that firms with high cash flow pay high dividends and vice versa. A firm's last year profitability, however, has a negative significant relationship with current year's dividends. The estimated coefficient of last year's profitability is very small in magnitude nevertheless. The results thus obtained are consistent with Jensen et al. (1992) Fama and French (2001) and Han, Lee, and Suk (1999). Further, profitability as a determining factor of dividend payments is duly supported (Adaoglu, 2000; Al-Kuwari, 2009; Al-Malkawi, 2007; Pandey, 2001; Sirait & Siregar, 2014).

Reserves of the Firm

Empirical results of our study further corroborate theoretical expectations that current year's surplus is negatively correlated with dividend payments and historical reserves are positively associated with current year's dividend payments. Magnitude of both the coefficients is very small nevertheless. This result suggests that the listed firms on Karachi Stock Exchange do pay heed to retentions. But looking to the small magnitude of the coefficients (-0.0075 for current year reserves and 0.0014 for last historical reserves) it can be said that the retained earnings are not invested in profitable projects (Table 4). Failure to invest in profitable investments suggest that retained earnings will not affect the firm's value.

Investment Opportunities

Results of the study further reveal that investment opportunities of the firms have a significant negative relationship with dividend policy. This negative and significant relationship suggests that future investment opportunities do have an impact on deciding the direction of dividends decision of the listed firms of Pakistan. Policies leading to growth create opportunities for profitable investment and urge the firms to have their distribution of earnings cut short while retaining them for expanding their businesses. The results corroborate the signaling theory of dividend policy by suggesting that when firm devise plans for expansions they avoid selling stocks. They, rather, depend on retained earnings and debt to keep out new shareholders from the future earnings of the firm which signals to outside investors that the firms are not going to pay dividends in the coming year or at least will not increase their current dividend payments. This result is supported by studies such as Baker et al. (2007) and Jeong (2008).

Leverage

The results, in accord with theoretical predictions by signaling theory, reveal that leverage (bankruptcy risk) is negatively associated with dividend payments. This negative association can be attributed to the fact that firms which is highly levered faces larger transaction costs due to external financing. In such a situation the firms need to use their internal finances to maintain their operations (Aivazian et al., 2003; Al-Kuwari, 2009; Al-Malkawi, 2007; Crutchley & Hansen, 1989; Faccio & Lang, 2002; Mollah, Keasey, & Short, 2000; Perretti, Allen, & Weeks, 2013; Travlos et al., 2002).

Additionally, other empirical studies such as Jensen et al. (1992) and Agrawal and Jayaraman (1994) established that because commitment towards creditor is greater from high levered firms, which reduces discretion of the managers to use their funds. This in turn leads to the reduction of agency costs. Moreover the negative association of financial leverage and dividend payments may also imply that financial leverage is a prime rationing criterion for creditors of financial markets in Pakistan.

Tax Rate

The result regarding tax is according to the Tax preference theory i.e. tax rate is significant and has a negative relationship with dividend payments. So whenever the tax rate is increased firms tend to reduce their dividend payment and like to retain their earnings. The result suggests that companies in corporate sector want to retain their income rather than distributing it to shareholders. Further the results reveal that listed firms on Karachi Stock Exchange are very much sensitive to the deduction of tax because of differential tax treatment and fiscal incentives in the various industries (WaliUllah & Nishat, 2008).

Net Liquid Assets

It is clear from the results that the association between liquidity (Net Liquid Assets) and dividend payments is positive corroborating theoretical expectations. This result has also been established (Mohammed Nishat & Bilgrami, 1994) and with the most recent evidence Nishat and Waliullah (2010). These studies propose that liquidity proxied by the ratio of current assets to current liabilities has a positive relationship with dividend payments corroborating the free cash flow theory of dividend payments. The coefficient (0.0021) of liquidity is highly significant. Highly liquid firms have high free cash flow which enables them to finance its current liabilities and give out the surplus as dividends. Adding to this, high liquidity implies more free cash flow, which reduces the agency problem associated with dividend payments. Thus high liquidity increasing dividend payments corroborates the Agency Theory of dividend payments.

Financial Reforms

From results of this study it can be seen that Financial Reforms and Institutional Development Index (FLIDI) has a highly significant positive effect on dividend payments. The result is empirically established by various researchers such as (Bekaert, Harvey, & Lundblad, 2005). Similarly,

Chari and Henry (2004), Henry (2000) and more recently Huang, Wald, and Martell (2013) have established that liberalization causes an increase in the investment rate and a considerable revaluation of equity prices in a large number of emerging markets. The magnitude of the impact is 1.1215, suggesting that dividend payments increased enormously following the Reforms of 1990s in financial sector. This increase in dividend payments is due to the fact that once financial constraints are eased out; firms start shifting form debt market to equity market to meet their financial needs. It can be inferred from the result that dividend payout policy of listed firms of Pakistan is not only affected by financial ratios but also by external shocks in financial market (Mauer & Triantis, 1994). These exogenous shocks represent continuous events of deregulation in financial markets activities..

Conclusion and Recommendations

Based on this study the following recommendations are suggested: As is established in this study, financial reforms and institutional development has a significant positive effect on the dividend payments of the firms. It is recommended that monetary authorities focus devising strategies to further liberalize the financial sector of Pakistan. Many banks are still state-owned; steps should be taken towards privatizing those banks. Moreover, foreign investor needs to be provided more legal protections and incentives so that they don't hesitate in investing in these listed firms of Pakistan. Moreover, seeing that leverage has a negative relationship it is suggested that financial authorities are supposed to devise strategies to make the capital market more efficient and easily accessible so that firms shift from debt to equity market. This will make the leverage position of the firms better and would enable them to pay higher dividends.

Moreover, the association suggests that as Pakistan's financial market is more liberalized the firms tend to increase their dividend payments. The reason being that firms shift from debt to equity financing as external financing becomes cheaper due to lesser financial constraints. As policy recommendations based on the results of the present study, it is suggested that the financial sector of the economy needs to be more liberalized, seeing that financial reforms and liberalization has a positive impact on dividend payments. Similarly other steps, such as identifying priority sectors, setting up of a minimum floor for payout ratio by relevant authorities to discourage retention, increasing paid up capital, should be taken. Likewise, retention, for improving working capital position, needs to be discouraged by relaxing the relevant prudential regulations and making it more realistic.

It is further suggested that identification of the priority sectors would help in devising strategies for enhancing investment in those sectors with managing and monitoring the balance on the issuance of debentures and bonds. Furthermore it is suggested that firms are required to meet their financial needs through equity market, which will improve the leverage ratio of the firms and hence the capital structure of the firm. In order to improve the financial markets in Pakistan, various stock holders in financial markets are required to work together to devise strategies aiming at depressing the retention. This objective could be achieved, if the Securities and Exchange Commission of Pakistan (SECP) set a minimum floor for Payout ratio to encourage dividend payments.

Furthermore, the results reveal that corporate taxes negatively influence dividend paid by firms. Policy makers are therefore required to induce more firms to pay dividends by providing tax incentives, which will induce other firms too to pay dividends. In Pakistan, since, after financial reforms, financial markets are not strictly regulated, small firms do not pay dividends due to lower paid up capital. To induce and force such firms which do not pay dividends, paid up capital supposed to be increased.

Most of the firms in Pakistan try to maintain their current ratio and leverage position. In a situation like this, firms try to expand using their retained earnings thus decreasing the dividend payments. Similarly in order to improve the working capital position, firms pay lesser dividends. It is observed that even at a lower rate of interest the debt financing from banks and financial institutions is used (Mehar, 2005). It is, therefore, suggested to relax prudential regulations in order to make them more realistic.

Appendices

Appendix 1: Construction and Description of Financial Liberalization and Institutional Development Index (FLIDI) for Pakistan:

To explore the inter-linkage between financial reforms and dividend payouts, an index, constructed through Principal Components Method (PCA)[5], is used in this paper. The index is based on various indicators of financial liberalization process in Pakistan during 1988-2008. The index is supposed to quantify the effect of financial liberalization on dividend payouts of the listed firms on Karachi Stock Exchange of Pakistan.

The index is derived by assigning arbitrary numbers to each financial liberalization and institutional development indicator as shown in (Table A2). Each of these policy variables can take a value of 1 and 0 depending on the status of implementation. For example when a sector is liberalized it is given a value of 1 and 0 otherwise. Similarly when a step is taken for institutional development it is assigned a value of 1 and 0 otherwise. Furthermore, partial values are also assigned to these variables in order to capture step wise implementation of liberalization policy or institutional development policy. For example if a particular policy is implemented in three phases then in the first phase a value of .33 is assigned , in the second phase a value of .66 and when the policy is fully implemented it is given a value of 1. In a similar vein a value of .5 is assigned to a particular policy if it is

[5] Principal Components Analysis is generally used to decrease the number of variables in a data set such that each component is a linear weighted combination of the original variables.

implemented in two phases, and value 1 is assigned to it when it is completed.

The composition of the FLI can be expressed in the following terms:

$$FLIDI = \omega_1 PR + \omega_2 OB + \omega_3 BRD + \omega_4 SPR + \omega_5 SRP + \omega_6 RSBP + \omega_7 CRF + \omega_8 COM + \omega_9 CL + \omega_{10} NLR + \omega_{11} RTA + \omega_{12} PSN + \omega_{13} RMPI + \omega_{14} RSC + \omega_{15} IRR + \omega_{16} RBL + \omega_{17} EFI + \omega_{18} LFM + \omega_{19} MERR + \omega_{20} OCF + \omega_{21} SEC + \omega_{22} ASE + \omega_{23} CRA + \omega_{24} CCR + \omega_{25} BBS + \varepsilon_t$$

Where ω_i = Weights assigned to different indicators.
In the above equation, ω_i is the weight of the component given by the respective eigenvector of the selected principal component.

Table A2
Financial Liberalization and Institutional Development Policy Variables

	PR	OB	RBD	SPR	SRP	RSBP	CRF	COM	CL	NLR	RTA	PSN	RMPI	RSC	IRR	RBL	EFI	LFM	MERR	OCF	SEC	ASE	CRA	CCR	BBS
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0.33	0	0	0	0	0.33	0	0	0.5	0	0	0	0	0	0	0	0	0	0	0
1991	0.33	1	0	0	0	0.33	0	0	0	0	0.66	0.5	0	0.5	0	0.33	1	0	0	1	0	0	0	0	0
1992	0.33	1	0	0.33	0.33	0.33	0	0	1	0	1	0.5	0.33	0.5	0	0.33	1	0	0	1	0	0	0	0	0
1993	0.33	1	0	0.33	0.5	0.33	0	0	1	0	1	0.5	0.33	0.5	0	0.33	1	0	0	1	0	0	0	0	0
1994	0.33	1	0	0.66	0.5	0.66	0	0.5	1	0	1	0.5	0.33	0.5	0	0.5	1	1	0	1	0	0	1	0	0
1995	0.33	1	0	0.66	0.5	0.66	0	0.5	1	0	1	0.5	0.66	0.5	0.5	0.5	1	1	0	1	0	0	1	0	0
1996	0.33	1	0	1	0.66	0.66	0	0.5	1	0	1	0.5	0.66	0.5	0.5	0.5	1	1	0	1	0	0	1	1	0
1997	0.33	1	0.5	1	1	1	0.5	0.5	1	1	1	0.5	0.66	0.5	1	0.66	1	1	0	1	0	1	1	1	0
1998	0.33	1	0.5	1	1	1	0.5	0.5	1	1	1	0.5	1	0.5	1	0.66	1	1	0.33	1	0	1	1	1	0
1999	0.33	1	0.5	1	1	1	0.5	0.5	1	1	1	0.5	1	0.5	1	0.66	1	1	0.66	1	1	1	1	1	1
2000	0.33	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2001	0.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2002	0.66	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2003	0.66	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2004	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2005	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2006	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2007	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2008	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Note: Number assigned 0 for none, 1 for full, and 0.33, 0.50 and 0.66 for partial and gradual deregulation.

The Eigen values and eigenvectors of the correlation matrix of financial liberalization policy variables are as follows:

Table A3
Principal Components
Sample: 1988 2008 (Included observations: 21)

Correlation of PR OB RBD SPR SRP RSBP CRF COM CL NLR RTA PSN RMPI RSC IRR RBL EFI LFM MERR OCF SEC ASE CRA CCR BBS

	Comp 1	Comp 2	Comp 3
Eigenvalue	19.40614	3.018445	1.166799
Variance Prop.	0.776246	0.120738	0.046672
Cumulative Prop.	0.776246	0.896983	0.943655

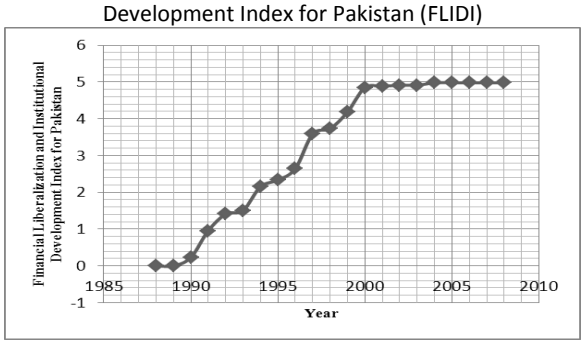
Plugging the weights of the first principal component from table A3 in equation 1 we get the financial liberalization and institutional index as given in equation 2.

The resultant total index is given in Table A4.

Table A4
Financial Liberalization and Institutional Development Index (FLIDI) for Pakistan

FLIDI	0	0	0.23	0.96	1.41	1.51	2.15	2.33	2.65	3.59	3.73	4.18	4.85	4.88	4.92	4.92	4.98	4.98	4.98	4.98		

Figure A1: Financial Liberalization and Institutional Development Index for Pakistan (FLIDI)



From figure A1 it can be seen that financial and institutional development process started in 1990 speeded up then till 2000 and afterwards its effect remains almost flat.

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