Dynamics and Determinants of Dividend Policy in Pakistan: Evidence from Karachi Stock Exchange Non-Financial Listed Firms

Hafeez Ahmed[*]
Dr. Attiya Javid

Abstract

This study examines the dynamics and determinants of dividend payout policy of 320 non-financial firms listed in the Karachi Stock Exchange during the period of 2001 to 2006. It is also one of the very first examples which try to identify the potential dynamics and determinants of dividend payout in Pakistan by using the well established dividend models in the context of emerging markets. For dynamic equation we used the extended model of Lintner, Fama and Babiak and a 'proposed' model in dynamic setting. The results consistently establish that Pakistani listed non-financial firms rely on both the change in dividends and change in net earnings which clearly demonstrate that the firms rely on both current earning per share and past dividend per share to set their dividend payments. However, the study clearly shows that dividend tends to be more sensitive to current earnings than prior dividends. The listed non-financial firms having the high speed of adjustment and low target payout ratio show the instability to smoothing their dividend payments.

To find out the determinants of dividend payout policy, dynamic panel regression has been performed. It has been found that, profitable firms with more stable net earnings can afford larger free cash flows and therefore pay larger dividends. Furthermore, the ownership concentration and market liquidity have the positive impact on dividend payout policy. Besides, the slack and leverage have a negative impact on dividend payout policy. The market capitalization and size of the firms also have a negative impact on dividend payout policy which clearly shows that the firms prefer to invest in their assets rather than pay dividends to its shareholders.

Keywords: *Dynamics panel data, dividend policy, partial adjustment model, dividend dynamics, target payout.*

1.   Introduction

The behavior of dividend policy is one of the important issues in advance corporate finance and as well as for Pakistan's capital market. It is the most debatable issue in the advance corporate finance and still keeps its prominent place. Many researches have been conducted by well known researchers and provided the theories and empirical evidences regarding the determinants of dividend policy. But the issue is still unresolved. We still do not have an acceptable explanation for the observed dividend behavior of firms. We are yet to cover the factors that derive the dividend policy decision and the way these factors interact.

One of the renowned dividend behaviors is the smoothing of firm's dividends vis-à-vis earnings and growth. In his seminal research, Lintner (1956) found that firms in the United States adjust their dividends smoothly to maintain a target long run payout ratio. The findings of Lintner regarding the dividend smoothing have also been confirmed by numerous other studies since the former's publication. The smoothing of the dividend is a well known empirical fact but its empirical evidence is based on United States market. The dividend policy of the companies varies from country to country due to various institutions and capital market differences.

Brealey and Myers (2005) list dividends as one of the top ten important unresolved issues in the field of advance corporate finance. Black (1976) says that dividends are the primary puzzle in the economics of finance. Allen and Michaely (2003) conclude in their empirical work that much more empirical and theoretical researches on dynamics and determinants of dividend policy require before consensus can be reached.

The justification of this research is to continue the dividend debate into the area of emerging market because Pakistan is going to enter into the emerging markets soon. Many researchers have focused on the private sector in a few developed countries like the United States, Germany, United Kingdom and the European Union countries. Now they have started to look at the dynamics and determinants dividend policies or behavior of dividend of companies operating in the developing countries and emerging markets. Therefore, it is clear that the picture of dividend policy is incomplete, especially in case of Pakistan's capital market. There is no doubt at all that in the capital market of Pakistan dividend policy is totally different from the developed countries.

The purpose of this study is to investigate the dynamics and determinants of dividend policy of non-financial firms in Pakistan. The focus is to investigate how Pakistani firms set their dynamic dividend policies in a different institutional environment as compared to developed markets like the United States. Particularly this study empirically examines whether Pakistani firms follow stable dividend policies as in developed markets where dividend smoothing is stylized fact in the long run. The paper also identifies the areas of firm level factors that influence the degree of dividend smoothing. This paper indicates the importance of institutional features towards the dynamic and determinants of dividend policy and also points

out the advantages of examining the dividend policy in different institutional environments. The outcomes of the research provide meaningful and handy information in the role of institutional factors which creates dividend policy at firm's level.

Several important features of Pakistan's capital market and the economy relating to the dividend policy have been examined. Firstly, Pakistan is moving towards development and improving its economic position in the world since the 1980s. The economic growth and revolution has been identified by many researchers. From being a poverty suffering and economically backward country in 1980 with the GDP per capita income of only US$ 680, it exceeded US$ 2600 in 2007 that shows a much better shape than ever before. Pakistan's economy is 56.8% free, according to the assessment of 2008 which makes it the world 93rd freest economy. Pakistan is ranked 16th out of 30 countries in the Asia-Pacific region. The capital markets of Pakistan have also developed substantially. Many studies conclude that firms are likely to pay stable dividend during the high growth period. Therefore, it is important to find out how dynamic dividend policy is determined in a growing economy like Pakistan.

Secondly, the level of the corporate governance in Pakistan is not like developed countries. The Securities Exchange Commission of Pakistan has taken several measures to improve the corporate governance. Due to weak corporate governance the ownership structure of Pakistani firms is often characterized by the dominance of one primary owner who manages a large number of affiliated firms with a small amount of shares or investment. In the field of advance corporate finance, this structure is known as circular cross investments (pyramid ownership control structure as well as cross shareholding among subsidiaries firms) in which the owner of the business is able to perform ownership right to control many firms in different sectors of industries. One of the consequences of the cross shareholding or pyramid ownership structure is the agency conflict between the shareholders and the owner, where controlling shareholders confiscate value from minority shareholders and can influence the dividend policy easily.

Thirdly, the tax environment in Pakistan is totally different as compared to the United States. There is no capital gain tax on stocks in Pakistan because the government has given the extension till 2010. Therefore, before 2010 no capital gain tax will be collected on stocks in Pakistan while 10% withholding tax will be charged on dividend incomes. It is important to mention here that if the firms earned the profit and not announced the dividend, 35% of income tax will be charged by the Government of Pakistan. There is a possibility that differences in the tax system may influence the dividend policy and also influence the degree of dividend smoothing in Pakistan since this adverse tax treatment of dividend income is more serious than the developed countries like the United States.

Fourthly, several capital market reforms have been implemented by the Securities Exchange Commission of Pakistan to ensure a market mechanism based economy in Pakistan. Since the early 1990s, Pakistan's capital market has been facing many critical issues, including among others, weak and outdated regulatory framework, an inefficient, non-transparent and

stagnant stock market, a poorly regulated and publicly owned mutual fund industry and a nascent insurance industry that contributed little to capital market development. Over the last few years, there is tremendous increase in market capitalization with a soaring stock market index as a result of government regulations. The Karachi Stock Exchange (KSE) share index that stood at 1507 points at the end of the year 2000 crossed the level of 12,274 points on April 17, 2006 registering a growth of 64.7% over June 2005. Market capitalization has reached US$ 50.45 billion. Comparatively, the Korean stocks having the face value of 5000 per share play a vital role in deciding a firm's dividend policy. In Korea the Capital Market Promotion Act 1968 made it mandatory for listed companies to pay the annual dividend divided by its face value at a level equal to the interest rate of one year time deposit. A change in dividend payments is less likely to reflect a change in the fundamentals of firm, as the signaling theory of dividend suggests. In Korea instead of change in the annual dividend, payments are closely related to the interest rate of one year time deposit rather than reflecting the future prospects of the firm. In Pakistan major investors still disagree with dividends and consider stock prices appreciation as the major component of stock returns. Hence, it is assumed that the investor attitude towards dividends is expected to have an impact on the way firms set their dividend policy in Pakistan.

As empirical evidences and theories suggest, there are many factors which play an important role in dividend signaling and agency cost explanation of dividend smoothing so we can say that those factors are firms' specific. By implying these factors in some firms and their strong occurrence in others could empirically explain cross-sectional differences in firm's dividend smoothing behavior. There are many reasons to examine smooth dividends behavior, one of which is firms' dividend behavior which affects its capital structure. Many empirical studies of dividend behavior have supported the theory of smoothing dividends but have not examined the objectives of this paper by using theoretical hypotheses concerning firms' specific factors in explaining the outcomes of cross-sectional differences in firms' dividend smoothing behavior and dynamics and determinants of dividend policy.

This paper contributes to the limited literature on dynamics and determinants of dividend policy in Pakistan and extends the traditional framework of Lintner (1956), Fama and Babiak (1968) and Belanes et al. (2007) and also suggests an econometric sound approach to modeling the dynamics of dividends on the basis of proposed model according to the capital market of Pakistan. In the same view, it should be noted that it is the first paper to use the dynamic panel data to examine the dynamics and determinants of dividend policy in Pakistan.

Objective of the Study

This study examines the number of firms' specific factors and their role in dividends signaling and agency cost explanations of dividend smoothing, and the weak investor protection in Pakistan and its effects on dynamic and determinants of dividend policy. Further, it examines the impact of ownership concentration on the dividends payments in Pakistan. A sample of

320 firms of the KSE listed non-financial firms from the period of 2001 to 2006 has been used for this study.

2. Literature Review

After the publication of Lintner's (1956) analysis of determinants of dividend policy and dynamics, various studies were undertaken on the subject. The work was further refined by Fama and Babiak (1968). It has been observed that during the last 52 years, a series of empirical and theoretical studies have been done which involve three important but divergent conclusions and assertions. First, the increase in dividend payout positively affects the market value of the firm. Second, when the dividend decreases, it affects the firm's value. And third, the dividend policy of the firm does not affect the firm value.

However, we can say that empirical evidence on the determinants of dividend policy is unfortunately diverse. There are numerous theories on why and when the firms pay dividends. In the present era, there are six very important theories relating to dynamics and determinants of dividend polices applied in different economies. The 'bird in hand' theory which has been given by Gordon and Walter (1963) concludes that investors always prefer cash in hand rather then a future promise of capital gain due to minimizing risk or lowering risk. The catering theory given by Baker and Wurgler (2004) suggests the managers to give incentives to the investor according to their needs and wants and this is the way to cater the investors by paying smooth dividends when the investors put stock price premium on payers and by not paying when investors prefer non-payers.

According to the signaling theory given by Bhattacharya (1980) and John Williams (1985), dividends allay information between managers and shareholders by delivering inside information of firm's future prospects. Furthermore, the dividend should be paid to shareholders according to the prices of stocks. Jensen and Meckling's (1976) agency theory is based on the conflict between managers and shareholders. It also provides an analysis of the impact of agency conflict among the managers and shareholders. It concludes that the percentage of equity controlled by insider ownership should influence the dividend policy. Easterbrook (1984) gives an explanation regarding agency cost problem and that there are two forms of agency cost: the cost monitoring and the cost of risk aversion on the part of directors or managers.

The 'life cycle' theory explanation given by Lease et al. (2000), and Fama and French (2001) maintains that the firms should follow a life cycle and reflect management's assessment of the importance of market imperfection and factors, including taxes to equity holders, agency cost asymmetric information, floating cost and transaction costs. Miller and Scholes (1978) gave a detailed explanation based on the facts of the United States economy regarding the effect of tax preferences on clientele and concluded that different tax rates on dividends and capital gain lead to different clientele. Miller and Modigliani (1961) presented the MM theory which clearly explained that in perfect markets, dividend do not affect firm's value.

Shareholders are not concerned to receiving their cash flows as dividend or in shape of capital gain, as long as firms do not change the investment policies. In this type of situation firms' dividend payout ration affect their residual free cash flows. As a result, when the free cash flow is positive firms decide to pay dividend and firms decide to issue shares if the flow is negative. They also conclude that change in dividend may convey the information to the market about firm's future earnings.

D'Souza (1999) examined the agency cost, market risk, investment opportunities and dividend policy. She used the institutional holdings, beat and previous growth market to book value or the investment opportunities set as proxy for agency cost, market risk and investment opportunities respectively. The results of the study clearly show negative relationship between agency cost and market risk with dividends payout. However, it does not support the negative relationship between dividend payout policies and investment opportunities. The results clearly show the insignificant relationship between dividend policy and investment opportunities for international firms in sample.

Adaoglu (2000) has conducted a study on instability in the dividend policy of the Istanbul Stock Exchange (ISE) corporations. By using Lintner's robust model on the sample of 916 dividend observations of non-financial sector of listed firms on ISE. The empirical analysis shows that the firms listed in ISE follow unstable cash dividend policy and the main factor for determining the amount of dividend is earning of the firms.

Other important studies on dividend policy include the following:

- Omet's (2004) study by using the Lintner's model on the dividend behavior of Jordanian capital market.

- DeAngelo et al.'s (2004) study on dividend policy, agency cost and earned equity.

- Eriotis' (2005) examination of the effect of distributed earnings and size of the firms to its dividend policy of Greek firms. The author studied the Greek firms, set their dividend policies not only by net distributed earnings, but also by change in dividend, the change from last year earnings and size of the firm.

- Stulz et al.'s (2005) study on dividend policy and earned capital mixed by applying life cycle theory of dividends.

- Farinah and Foronda's (2005) study on the relationship between the dividend and insider ownership in different legal systems. The countries and firms included in the sample on the basis Anglo-Saxon tradition and matching sample of firms from countries with civil law legal system. They hypothesized that due to different characteristics of both legal systems and the nature of agency conflicts in firms from those countries the relationship between dividend and ownership by insider will be considerably different between two set of companies.

- Amidu and Abor's (2006) study on determinants of dividend policy in Ghana. They choose the sample of 20 listed firms of Ghana Stock Exchange (GSE) which represent the 76% of the total GSE listed firms.

- Naceur et al.'s (2006) study on the determinants and dynamics of dividend policy of Tunisian Stock Exchange. They have selected the 48 firms (non-financial).

- Reddy's (2006) examination of the dividend policy of Indian corporate firms, and the behavior of the firms listed on Bombay Stock Exchange (BSE) with the help of trade off theory and signaling theory hypothesis.

- Megginson and Eije's (2006), study by using a database of over 3400 listed firms. They have examined evolution of dividend policy from 1989 to 2003 of 15 countries that were member of European Union before May 2004.

- Avazian et al.'s (2006) study on United Stated listed firms at NYE.

- Baker et al.'s (2007) study on the perception of dividends by Canadian managers by using a sample of 291 listed firms on Toronto Stock Exchange (TSE).

- Daniel et al.'s (2007) study on whether firms manage earnings to meet the dividend threshold. They found that firms are more likely to manage their earnings upward when their earnings would otherwise fall down of expected dividend levels.

- Jeong's (2008) analysis of the dynamics of dividend policy in Korea.

2.1 Rationale of the Study

The equity market of Pakistan is one of the twenty promising emerging markets identified by IFC in 1991. After slow down in the late 1990s, the market re-emerged again in recent years. During the years 2002 to 2004, it was regarded as the best performing emerging market (Business Week). The problem is that the level of corporate governance in Pakistan is weaker than other developing countries like India, Indonesia. In Pakistan's context, the future earnings of the firms have been used for signal of dividends and controlling growth, firm size, cash balance, retained earnings, market capitalization. The present study will discover the factors involved for determination of dividend policies in Pakistan. In Pakistan there are few firms which are paying dividend consistently. The listed firms of KSE have not been able to smooth their dividends and the factors which are influencing or determining the dividend policy in Pakistan include the misuse of corporate assets for personal interests.

2.2 Hypotheses

H_{01}: The listed firms of KSE are not smooth or stable in paying dividends.

H_1: The listed firms of KSE are smooth or stable in paying dividends.

H_{02}: There is no relationship between dividend payout and ownership structure.

H_2: There is a relationship between dividend payout and ownership structure.

H_{03}: There is no relationship between liquidity and dividend payout.

H_3: There is a relationship between liquidity and dividend payout.

H_{04}: There is no relationship between dividend payments and profitability of listed firms

H_4: There is a relationship between dividends payments and profitability of listed firms.

H_{05}: There is no relationship between dividend payments and investment opportunities.

H_5: There is a negative relationship between dividend payments and investment opportunities.

H_{06}: There is no relationship between dividend payout and leverage.

H_6: There is negative relationship between dividend payout and leverage.

H_{07}: There is no relationship between dividend payout and size of the listed firms.

H_7: There is a negative relationship between dividend payout and size of the firms.

3.   Data and Methodology

The study takes into consideration a sample of 320 non-financial listed firms of KSE. The 320 non-financial firms cover the 85% of the total firms in the market (KSE). The data has been collected from the Securities Exchange Commission of Pakistan, State Bank of Pakistan and the KSE for the period of 2001 to 2006. The variables of the study have been calculated from the Audited Annual Accounts of 320 firms for the period 2001 to 2006 which according to the Rozeff (1982) appears as a long period enough to smooth out variable fluctuations.

Conceptual Framework

Corporate dividend policy is one of the most important issues in advance corporate finance. Many researchers have done researches on this but the picture is still cloudy. As market imperfection exists, mainly asymmetric information, agency cost problem, financial distress costs, investment opportunities, distributed earnings; many arguments have been put forth on the issue.

John Lintner (1956) developed the dividend model which became very famous and known as

Lintner Partial Adjustment Model. According to Lintner, each firm i has target dividend payout ratio(r_i). By using the target payout ratio, Lintner calculated the target dividend at time ($D_{it}*$) as percentage of net earning of the firms i at the time t (E_{it}), i.e $D_{it}* = r_i. E_{it}$. In reality the dividend, which firms finally pay, at time t (D_{it}) is different from the target one ($D_{it}*$). So it is more reasonable to model the change between the real dividends at time t-1, instead of the real dividend at time t only. By taking the change in real dividend into account, it is realistic and consistent with the long run target payout ratio, to assume that the real change in dividend at time t (D_{it}- D_{it-1}) equal to the constant portion (α_i) plus the speed of adjustment to the target dividend at time t ($D_{it}*$- D_{it-1}). Since the target dividend at time t is a proportion of the net earnings at the time t, the final model become as follow:

$$D_{it} - D_{it-1} = \alpha + c_i r_i .E_{it} - c D_{it-1} + \varepsilon_{it}$$

Where D_{it} is the actual dividend paid by the firms during period t, E_{it} is the net earnings of the firms during the period t c of the firms during the period t c_i is the adjustment factor which show the speed of adjustment of dividends, at the time t-1, to optimum target payout ratio of dividends at time t and r is the target payout ratio. After the study of dynamic modeling in the econometric this theoretical model can be estimated using the following econometric model:

3.1.1 Model-1 $\Delta D_{it} = \alpha + \beta_1 E + \beta_2 D_{it-1} + \varepsilon_{it}$

Where ΔD_{it} is the change in dividend from time t-1 for the firm i , β_1 represents the C_i times r of the theoretical model β_2 represents the variable c_i of the theoretical model with the negative sign (β_2 = -c_i) and ε_{it} represent the error term. Lintner has applied this model on more than 600 firms of the United States, and estimation of the above model fairly explains the 85%of the dividend changes in his sample.

The Fama and Babiak (1968) conducted the more comprehensive study to analyse the lintner's model performance. They have started the work on Lintner's model (1956). The study consist the sample of 392 non financial firms for the period of 1946 to 1964. They tested Lintner's model on their own data and methodology of 392 firms and found that it performed well but could be improved by introducing one more explanatory variable; they taken the lag (current earnings, evious earnings) of earnings without constant term. However, Fama and Babiak (1968) claim that their estimations suggest that adaptive expectations appear to be an inappropriate specification of their model. By using Lintner's improved version of dividend model, Vasiliou and Eriotis (2003) give the following model:

3.1.2 Model-2 $D_{it} = \alpha + \beta_1 \Delta E + \beta_2 \Delta D_{t-1} + \varepsilon_{it}$

Where D_{it} is the dividend of the firm I at the time t , E_{it} is the net income of the firm i available to stockholder at time t and time t-1 for firm i , ΔE_{it} ($E_{it} - Ei_{t-1}$) the change in income to the stockholders, at the time t and the time t-1 and ε_{it} is the error term.

We will estimate the model by taking the DPS_{it} as dependent variable and EPS_{it} and the

model becomes as follow:

3.1.3 Model – 3 $\Delta DPS_{it} = \alpha + \beta_1 \Delta EPS_{it} + \beta_2 \Delta DPS_{t-1} + \varepsilon$

Where the ΔDPS_{it} is the change in dividend per share of the firm i at the time, ΔEPS_{it}, is change in earning per share at the time t and time t-1 and ε_{it} is the error term.

In the above section we have checked the dividend model of Lintner (1956) in a new form as well by the help of econometrics. Many researches on dividend model of Lintner have used the per share data rather than the aggregate of the data. We have used both data aggregate and per share. Furthermore, dividend has to be paid in cash despite the KSE having the authority of dividend payments in the shape of stocks.

For the remaining hypotheses regarding the determinants of dividend policies in Pakistan, we will use the following variables for estimation:

Dividend Yield: Firstly we have used the dividend yield as dependent variable instead of payout ratio because the full sample contains the firms with negative earnings. The dividend yield has been calculated as dividend per share divided by price per share.

Earning Per Share: The earning per share after tax has been used as an explanatory variable. We use the earning per share after tax because dividend has been paid earning after interest, taxes and after depreciation and calculated as net earnings divided by number of shares.

Major Number of Shareholder (MSH): The major number of shareholders calculated as the shareholder having more than 5% holding and used as proxy of inside ownership structure. According to the Gomes (2000) and La Porta et al. (2000), the solution of agency cost is the structure of ownership of the firms.

Net Earnings (NE): The net earnings after interest, depreciation and after tax have been used as the explanatory variable to examine the role of earnings to pay dividends.

Financial Characteristics and Explanatory Variables

Financial Characteristics	Explanatory Variables
Profitability	Net Earnings and Earning Per Share after tax
Signals	MBV and Growth in term of Sales
Ownership	MSH numbers of majority shareholders holding more then 5% of stocks
Leverage	LEV= total debts/ current year value of equity
Size	MC market capitalization Size in term of total assets
Market liquidity	TURN = annual value of stock traded/stock market capitalization
Investment opportunities	SLACK = accumulated retained earnings/ total assets.

Corporate Tax: The explanatory variable of tax has been included in the study to check the impact of corporate tax in the listed firms of the KSE on the dividend payments.

Leverage (Lev): The leverage has been used as a proxy of debt to equity ratio and control variable in this study. Because leverage is a very important variable for the determinants of dividend behavior, if the level of the leverage is high its mean the firm is more risky in the cash flows. The effect of negative leverage on dividends payments is already documented. According to Higgins (1972) and McCabe (1979), long-term debt had negative impact on the amount of dividend paid. Rozeff (1982) found that the firms with higher leverage paid lower dividends in order to evade the cost of raising external capital of the firm.

Slack: The slack is a very important factor for making the decision regarding the dividend policy. It has been calculated as the accumulated retained earnings divided by total assets of the firm. According to the theory, the presence of slack reduces the external financing requirements and becomes an important factor to solve the problem of under-investment. According to Myers & Majluf (1984) and John & William (1985), it reduced the signaling need of the firms and incentives to smooth the dividend behavior.

Sales Growth (SG): According to the signaling theory, the high growth firms are smoother to pay their dividends to shareholders. Growth is the signals to the shareholders the firms having high growth opportunities. The sales growth has been used as proxy of growth in the

empirical analysis of the study. The sales growth has been used as percentage change in sales annually as proxy of the growth.

Size : The firm size has been calculated as the total assets of the firm because this variable have be expected to have a positive coefficient as larger, more diversified firms are likely to have very low chance of bankruptcy and can sustain higher level of debt. Scott and Martin (1975) found that the size of the firm is a major factor which can affect the firms' dividend policy and debt policy.

Market Capitalization (MC): Market capitalization has been calculated as the number of share outstanding in the market and current market price of the shares. The total stock market capitalization has been used in the study which plays an important role to determine the decision of dividend policy in Pakistan.

Market Liquidity (Turn): Market liquidity is defined as the annual value of stock traded divided by the stock market capitalization. Market liquidity is one of the important factors that can affect the decision or behavior of the dividend policy. According to the Belanes et al (2007) there is a negative relationship between the market liquidity and dividend yield in Tunisian Stock exchange (TSE).

Return on Assets (ROA): The return on assets has been added in the study as control variable and defines as net income divided by total assets. The characteristics of return on assets are as profitability of the firm. Return on Assets is positively related to dividend yield. According to the Belanes et al. (2007), return on asset is positively related to the dividend yield of the Tunisian firms.

Market to Book Value (MBV): Market value divided by the book value of equity is the signal for the shareholders that firms pay dividends smoothly and vise versa. Bleans et al. (2007) conducted the research on Tunisian listed firms and found that there is a negative relationship between dividend yield and MBV.

Economatric Modeling

The panel character of data allows for the use of panel methodology. The panel data estimations are considered as the most recent and efficient analytical methods in handling of econometric data. The panel data model is a powerful and strong research instrument. The combined panel data matrix set consists of a time series for each cross-sectional member in a data set, and of variety of estimation methods. The main purpose of using panel data is to provide more efficient estimation of parameter by considering broader source of variation, outsource more information to researcher and allow the study of dynamic behavior parameters.

Our sample consists on N cross-sectional units (320 firms) that are observed at different T time periods (from 2001 to 2006), consider following equation:

$$Y_{it} = \alpha + \beta X_{it} + \mu_{it}$$

Where Y and X have both i and t subscripts for i = 1,2 …..N sections and t = 1,2,….T time period.

Y_{it} represents the dependent variable in the model which is the dividend yield and dividend payout ratio , X_{it} contain set of explanatory variables in the estimation model and α is taken to be constant over time t and specific to the individual cross section unit i . If α is taken to be the same across unit then the ordinary least square (OLS) provides a consistent and efficient estimate of α and β. We have extended the model of Belanes et al. (2007) by adding more explanatory variable of slack, size, earning per share, sales growth and tax to explain the relationship between the dividend yield and determinants of dividend policy in Pakistan.

Dividend Yield = f (NE, MBV, MSH, MV, TURN, SLACK, SIZE, SG, LEVERAGE,)

3.2.1 Model-4

$DY_{it} = \beta_0 + \beta_1 DY_{it-1} + \beta_2 NE_{it} + \beta_3 MSH_{it} + \beta_4 MV_{it} + \beta_5 TURN_{it} + \beta_6 SLACK_{it} + \beta_7 SIZE_{it} + \beta_8 SG_{it} + \beta_9 LEV + \beta_{10} MBV_{it} + \varepsilon_{it}$

Empirical work on the dividend policy can suffer from two sources of inconsistency i.e. omitted variables and endogeneity biases. Considering these, we firstly describe how these biases affect cross-sectional and panel data and then present Generalized Method of Moment (GMM) estimator which corrects both of these biases and takes into account the dynamics of dividend policy. The cross-section regression gives the inconsistent estimation which is not reliable because the constant for the all the cross-sections is same and gives the biased results. The potential inconsistencies arising from the use of simple cross section of the model, we select the pool estimation (pooled least square method), the specific firm effect estimation (fixed effect method also known as least square dummy variable) which fixed the effect of each specific group, random effect to allow the comparison with results from the pervious empirical studies and from GMM. As the GMM model allows the past year of dividends to affect the current year dividend, the lagged dependent variable is most likely to be correlated with the firms' specific effect and estimate using ordinary least square method (OLS) which provides inconsistent and biased estimates. To get the consistent estimations, the model is the first difference to estimate the fixed effect and then we use the instruments on the right hand side variable using their lagged values to eliminate the inconsistency which can be arising from endogeneity of the regressor. This approach has also been used by Arellano and Bond (1991).

For panel data we have six years' data and 320 firms of KSE and almost 1,250 observations for dividend paying firms listed on KSE. Arellano and Bond (1991) suggest that the estimation

from GMM is first difference. They estimate by first differencing the base equation which removes the time invariant μi and leave the equation estimatable by instruments.

$$Y_{it} - Y_{it-1} = \alpha_i (y_{it-1} - y_{it-2}) + \beta(x_{it} - x_{it-1}) + (\mu_i - \mu_i) + (v_{it} - v_{it-1})$$

So we assume that there is no serial correlation in the disturbance εit and all the lagged level of variables can be used as valid instruments in the first difference equation. The Hausman test is formulated to assist in making the decision between fixed effect and random effect approaches. Hausman (1978) adapted a test based on the idea that under the hypothesis of no correlation, both OLS and GLS are consistent but the OLS is inefficient, while under the alternatives OLS is consistent but GLS is not. There are two estimators $\hat{\beta}_0$ and $\hat{\beta}_1$ of the parameter vector β and add two hypothesis testing procedure. H_0, both of the estimator are consistent but the $\hat{\beta}_0$ is inefficient and the alternate hypothesis H_1, $\hat{\beta}_0$ is consistent and efficient $\hat{\beta}_1$ is inconsistent. For the panel data, the appropriate choice between fixed and random effect investigates whether the regressors are correlated with the individual (unobserved in the most cases) effect.

4. Empirical Results

4.1 Descriptive Statistics

The descriptive statistics of dependent variable and explanatory variables by using EVIEWS 3.1 from the period of 2001 to 2006 contain a sample of 320 non-financial listed firms of KSE (Table 1) and it shows the average indicators of variable computed from the financial statements. After the descriptive statistics we found that mean level (average) dividend paid is 81% in our full sample, the dividend yield is 0.05%, EPS is 6.9 and maximum payments of KSE listed companies on earning per share is Rs.202.70. The mean value of leverage is 278.65% which shows the firms used the debts to finance assets. The net earning mean is 315.3% and the median is 32.9 which show that the firm's pay dividend per share of its earning is .05% in Pakistan. The mean of MSH is 51.96% and the median is 35% which shows that the 51.96% holding in the listed firms of Karachi stock Exchange in the hand of Major or controlled shareholders. The average growth rate in sales of listed non financial firms is 23.67% with the median of 13.2% and the MBV having the average mean of 522.6% and the median of 299.9% which shows the significant growth in the market. The mean of the size is 3842.8 with the median of 1032.6 which shows that the listed firms of Karachi Stock Exchange invest more in their asset. The mean average of the financial slack is 0.029% and the median is 0.023% and the average target payout ratio of the listed firms of our sample is 22% with the median of .08% which shows the firms set their target payout ratio of its earnings. The explanatory variable of TURN is shows the market liquidity with the mean average of 1.65% and the median is 0.90%.

4.2 Correlation Matrix

The correlation matrix shows the relationship or association between the dependent variable and explanatory variables (Table 2). The results of correlation matrix are as follows:

The dividend paid shows that the relationship with earning per share is 0.133 positive and significant which shows that the dividend payments are dependent on the earning per share of the firms. Dividend paid shows the relationship between leverage of the firm (-0.029) which is negative. Dividend paid shows the relationship with market to book value (0.010) which is positive and shows that the market to book value can positively affect the dividends of the firms. Dividend with the market capitalization is (.519) which is highly positive and shows that market capitalization depends on dividend payments of the firms.

Major shareholding shows the relationship with dividends (0.23) positively significant and explains that dividends depend on the major shareholdings of the firms. Dividend paid with size of the firms shows the relationship which is positive and highly significant (0.54). target payout ratio is positively related to the dividends payments (.10). Dividends payments and corporate tax shows the relationship positive (.38) which means the firms pay the dividends to avoid the the tax of 35%. The correlation matrix also shows correlation with size and tax.

4.3 Regression Analysis Results

The analysis of this study is divided into two parts. The first part of the regression analysis shows the dividend stability of non-financial firms listed in the KSE and the second part explains the determinants of dividend payout policy in Pakistan.

For estimating the dividend stability we have used three models and four different methods.

Table 2: Litner's Extended Model

Regressor	GMM	POOLED	FEM	REM
DIV_{it-1}	0.2267	0.5808	0.272963	0.520
T-value	(2.50)**	(30.09)**	(153.45)**	(35.82)**
P-value	0.0124	0.0000	0.0000	0.00
Ne_t	0.252	0.234	0.133	0.112
T-value	(0.20)*	(7.28)**	(21.33)**	(3.659)**
P-value	0.038	0.0000	0.0000	0.0003
R2	0.557	0.5626	0.661603	0.393
Adj R2	0.556	0.5546	0.653876	0.392
HausmanTest (p-value)			0.002	
Speed of adjustment (1α)	77.33%	41.90%	72.70%	48%
Target Payout Ratio (β/1-α)	32%	55%	18%	23%
Firms	210	210	210	210
Observations	1210	1344	1344	1344

4.3.1 Dividend Stability Model-1 $\Delta D_{it} = \alpha + \beta_1 E + \beta 2\, D_{it-1} + \varepsilon it$

As indicated in the above table, parameter estimates obtained from the partial adjustment model, the coefficient on the lagged dependent variable (dividend) α varies from 0.22 obtained from GMM estimations to 0.58 when ordinary least square level is used by pool, fixed effect random effect. Though the speed of adjustment (1-α) lies within the range of 41% to 77.73%. This suggests that some estimation techniques yield incorrect results which may cause biases introduced by unobserved individual effects on the dividend smoothing behavior. The coefficient of dividend decline from 0.58 to 0.27 in fixed effect method estimation which suggest the broad firms specific effect in the dividend payout policy of the KSE and the endogeneity of explanatory variable that is net earnings. Furthermore, the coefficients of the dividends are significant with the fixed effect method. The other useful information is the implicit target payout ratio (β/1-α) which is shown in the above table of partial adjustment model. The target payout ratio varies from 18% to 55% and is significantly lower than the target payout ratio observed from the data. The coefficient of the determination

R2 also varies from 0.39 to 0.65.

4.3.2 Dividend Stability Model-2 $D_{it} = \alpha + \beta 1\Delta E + \beta 2\Delta D_{t-1} + \varepsilon it$

Table 3: Fama and Babiak Model Results

Regressor	GMM	POOLED	FEM	REM
ΔDIV_{it-1}	0.372216	0.372499	0.679426	0.375020
T-value	(2.990)**	(19.15)**	(36.3)**	(18.9)**
P-value	0.0028	0.0000	0.0000	0.0000
ΔNet	0.119716	0.120873	0.131459	0.278794
T-value	(0.0655)	(33.20)**	(12.56)**	(22.17)**
P-value	0.0477	0.0000	0.0000	0.0000
R2	0.653438	0.743193	0.717171	0.590915
Adj R2	0.641809	0.742810	0.660251	0.590304
Hausman Test (p-value)			0.001	
Speed of adjustment (1-α)	62.80%	62.80%	32.10%	62.51%
Target Payout Ratio(β/1- α)	19%	19.20%	40.91%	44.60%
Firms	210	210	210	210
Observations	1210	1344	1344	1344

This model has been used by Fama and Babiak (1968) on the United States capital markets and observed the speed of adjustment approximately 0.37 which is little bit high from Lintner's findings. The above table shows parameter estimates obtained from the above dividend stability model, the coefficient on the lagged dependent variable dividend α varies from 0.67 (67%) to 0.37 (37%) , the variation in the dividend coefficient is large in the KSE listed non-financial firms. This shows the variation or change in the dividend payments, the speed of adjustment also vary from 32% to 68.20%. On the other hand, the target payout ratio is also not consistent, the target payout ratio vary from 19% to 44.60% which is lower than the observed target payout ratio. The coefficient of the determination of all tests GMM, POOL,FEM and REM is vary from the 0.59 to 0.74. If we compare these results with the

Tunisian Stock Exchange the speed of adjustment vary from 96.59% to 23.66% and the target payout ratio 14.12 to 52.96%. Belanes et al. (2007) suggest that the Tunisian listed firms are not smooth to pay their dividends.

4.3.3 Dividend Stability Model (Proposed Model) $\Delta DPS_{it} = \alpha + \beta 1 \Delta EPSit + \beta 2 \Delta DPSt\text{-}1 + \varepsilon it$

Table 4: Results of Proposed Model

Regressor	GMM	POOLED	FEM	REM
$\Delta DPS_{t\text{-}1}$	0.409915	0.367485	0.475306	0.575072
T-value	(2.116)**	(19.20)**	(29.40)**	(36.4)**
P-value	0.0345	0.0000	0.0000	0.0000
ΔEPS_{it}	0.157928	0.202912	0.201740	0.106516
T-value	(22.48)**	0.638	1.23	1.65
P-value	0.0000	0.0235	0.0162	0.0973
R2	0.975977	0.989956	0.820675	0.922701
Adj R2	0.975937	0.989941	0.816708	0.912690
Hausman Test (p-value)				0.001
Speed of adjustment(1-α)	59.01%	63.26%	52.41%	42.50%
Target Payout Ratio(β/1- α)	27%	32.10%	38.49%	25%
Firms	210	210	210	210
Observations	1197	1322	1322	1322

After the analysis of the above models, partial adjustment model and the model of Fama and Babiak (1968), we have proposed the model which is based on the econometric modeling, and shows the change in dividend per share is dependent on change in earning per share of current period and lagged term of change in dividend per share. The parameter estimates obtained from our dividend stability models are reported in the above table. The coefficient of the lagged term dividends α varies from .40 GMM to .57 OLS when it is used in levels. The balanced panels have been used to estimate the above mentioned model. The results of the model show that the speed of adjustment (1-α) lies within the range of 42.5% to 59.01(GMM). This yield that the estimate technique uses in the model is appropriate. There are no biases

regarding the unobserved effects on dividend smoothing. The random effect estimation shows that the extensive firm specific affects the dividend policy in Pakistan. The endogeneity of the explanatory variables coefficient of dividends are significant in the OLS and random effect method but the significant has been lost when the GMM is used to estimation and the variation in the significance is very small.

On the other side, the target payout ratio (β/1-α) is also shown in the above table. The target payout ratio vary from 25% to 38.49% which is significantly equal to the observed target payout ratio which amounts to 30% in full sample and 35.7% in dividend paying firms sample. The coefficient of determination is also significant and does not have the variation. The firms listed on the KSE are continuously improving their target payout ratio. And we conclude that Pakistan's listed non-financial firms are smooth to pay their dividends.

The results of the adjustment of the speed and the target payout ratio stand compared with the findings in the empirical studies. Fama and Babiak (1968) have conducted the study on the United States listed firms (non-financial) and find the average speed of adjustment approximately 0.37 slightly higher than Lintner's findings of 0.30 and target payout ratio of 50% almost equal to Lintner's. Behm and Zimmerman (1993) conducted a study on 32 German listed firms and find a speed of adjustment ranging from 0.13 to 0.58 and the target payout ratio stands between 25% and 58%. Glen et al. (1995) found the speed of adjustment between 40% in Zimbabwe and 90% in Turkey and the target payout ratio between 30% and 40%. Belanes et al (2007) find the speed of adjustment in Tunisian listed firms which is 23.66 to 96.59% and the target dividend payout ratio between 14% to 52.96%. The results of this study regarding the speed of adjustment and target payout ratio in developing countries are similar to the ones on Turkey and Tunisia but ldifferent than the ones on Germany and United States.

The estimation of the Lintner's partial adjustment model and the proposed model tested on the sample of the KSE listed non-financial firms reject the null hypothesis that the firms that dividend decision are not based on the long-term target dividend payout ratio. But there is an indication that the firms give high importance to stable dividend payout to signal their future profitability to minimize the agency cost.

4.4 Determinants of Dividend Payout Policy in Pakistan

This part of the paper relates to the determinants of dividend payout policy in KSE listed non-financial firms. To examine the determinants, we have used the lagged dividend yield as an explanatory variable to examine the pervious effect of the dividend yield with other explanatory variables and dividend yield as the dependent variable because the sample has firms with negative earnings. Hypotheses from H2 to H7, have examined the dividend paying companies separately and on the sample of combine dividend paying company and no dividend paying company by using the GMM, Pooled least square method (Pool), fixed effect method (FEM) and random effect method (REM).

4.4.1 Determinants of Dividend Model - 1

$$DY_{it} = \beta_0 + \beta_1 DY_{it-1} + \beta_2 NE_{it} + \beta_3 MSH_{it} + \beta_4 MV_{it} + \beta_5 TURN_{it} + \beta_6 SLACK_{it} + \beta_7 SIZE_{it}$$

$$+ \beta_8 SG_{it} + \beta_9 LEV + \beta_{10} MBV_{it} + \varepsilon_{it}$$

Table: 5 Sample of Dividend Paying Firms[1]

Regressors	GMM	POOLED	FEM	REM
DY_{t-1}	-0.037407	0.841472	0.715616	0.725488
T-value	-1.710	(12.27)**	(12.44)**	(58.37)**
P-value	0.0874	0.0000	0.0000	0.0000
NE_{it}	0.171849	1.59E-05	1.07E-05	1.26E-05
T-value	0.050946	(6.70)**	(6.15)**	(5.27)**
P-value	0.0394	0.0000	0.0000	0.0000
MSH_{it}	-0.000276	0.000107	1.000108	0.000133
T-value	-1.53	1.74	1.55	1.26
P-value	0.1260	0.0806	0.0424	0.0349
MV_{it}	117.5728	-5.68E-06	-1.74E-06	-1.66E-06
T-value	(5.05)**	(-4.50)**	(-4.00)**	-1.594848
P-value	0.0000	0.0000	0.0001	0.1010
$TURN_{it}$	207.6299	0.053155	-0.006680	0.005084
T-value	(5.40)**	(3.85)**	(-2.29)**	0.437164
P-value	0.0000	0.0001	0.0220	0.6621
$SLACK_{it}$	-0.711174	-0.070574	-0.150200	-0.263837
T-value	(-2.53)**	(-2.78)**	(-11.94)**	(-14.82)**
P-value	0.0113	0.0055	0.0000	0.0000
$SIZE_{it}$	0.003	1.97E-06	7.78E-07	3.64E-08

---

[1] There are 224 firms which pay dividend to shareholders.

T-value	1.43	(2.59)**	(2.69)**	1.054
P-value	0.1519	0.0096	0.0072	0.0563
SG_{it}		-5.94E-05	-2.22E-07	2.35E-05
T-value		-1.091862	-0.031872	0.807699
P-value		0.2751	0.9746	0.4194
LEV_{it}	0.060	1.03E-05	-7.32E-06	-7.69E-06
T-value	1.45	1.15	(-3.39)**	-1.15
P-value	0.1451	0.2469	0.0007	0.2469
MBV_{it}	0.008847	-3.46E-06	9.04E-07	-4.93E-06
T-value	(2.00)**	-1.57	1.94	-1.96
P-value	0.0457	0.1150	0.0444	0.0494
R-squared	0.380	0.67	0.93	0.92
Adjusted R-squared	0.375	0.67	0.92	0.92
F-statistic		273.7813	8.14E+33	
J-statistic	0.018662			
Prob(F-statistic)		0.000000	0.000000	
Firms	224	224	224	224
Observations	1158	1319	1315	1315

The above table shows the lagged dividend yield having a negative relationship with the dividend yield of the current year. By using the GMM the t value of the lagged dividend yield is (-1.7107) with the coefficient value of (-0.0374) and the P value is (0.0874) which explains that the relationship between dividend yield and lagged dividend yield is negative and significant at 10% level of alpha (0.0874 10%). The result of GMM deviate from the findings of Belans et al. (2007), Baker et al. (2007) but evidence is supported by the findings of Reddy (2006). By using the pool least square (pool), fixed effect model and random effect model show the (t – statistics = 12.27, 12.44, 58.7) and (P- values= 0.000, 0.000, 0.000) which explains that the dividend yield of the current year depend on dividend yield of pervious year; the evidence is supported by the findings of Belans et al. (2007) and Amidu Abor (2006) and

deviate from the findings of Reddy (2006).

The net earnings show a positive relationship with the dividend yield by using GMM, Pooled, FEM and REM (t-statistics = 0.05, 6.70, 6.15 and 5.27) and (P-values =0.0394, 0.000, 0.000, 0.000) as a highly positive significant and explain that firms with positive earnings pay more dividends. So we reject the null hypothesis and conclude that firms listed in the KSE determine the amount of dividends according to the net earnings (profitability) of the firm. The evidence is supported by Adaoglu (2000), Amidu and Abor (2006) and Belans et al. (2007) and deviate from Jeong (2008).

The major shareholding (MSH) shows the positive relationship with the dividend yield by using the Pooled, FEM, REM (t statistics= 1.74, 1.55, 1.26) and (P-value= 0.0806, 0.0424, 0.0349) which explained that relationship between the dividend payout is positive and significant. The firms listed in KSE with major shareholding (inside) pay more dividends and play an important role to determine the dividend payout policies. So we will reject the null hypothesis that there is no relationship between dividend payout and ownership structure (MSH). The evidence supported by the findings of Farina and Fronda (2005), Amidu and Abor (2006) and deviate from Belans et al. (2007).

The financial characteristic of size has been explained by market capitalization and the size of the firm. The results show that there is a negative and significant relationship between dividend payout and MV. The (t-statistics = 5.052, -4.50, -4.002, -1.59) and (P-value=0.000, 0.000, 0.001, 0.10) explain that firms prefer to invest more in assets rather than to pay dividend. Therefore, we reject the null hypothesis. The evidence is supported by the finding of Belans et al. (2007), Jeong (2008) and deviate from Avazian et al. (2006).

The relationship between the firm's liquidity and dividend payout by using the GMM and Pooled is positive and significant with (t-statistics=5.40, 3.80) and (P-value=0.000, 0.001). The REM shows the positive insignificant so we chose the GMM and pooled regression results which are consistent as compared to FEM and REM, which explained that firms with more market liquidity pay more dividends. So we reject the null hypothesis. The evidence is supported by the findings of Reddy (2006), Amidu and Abor (2006) and deviate from Belans et al. (2007).

The relationship between the slack (investment opportunities) and dividend payout policies is negative and highly significant with all of above mentioned models. The firms with large financial opportunities pay fewer dividends. The GMM, Pool, FEM and REM show the (t-statistics=-2.536,-2.78,-11.94,-14.82) and (P-value=0.013, 0.005, 0.000, 0.000). So we conclude that the firms listed in KSE with more investment opportunities pay fewer dividends to its shareholders, influence the dividend payout policies and can play important role to determine the dividend payout polices in Pakistan. The evidence is supported by finding of Jeong (2008), Baker et al. (2007) and deviate from the findings of Naceur et al. (2006) and Belans et al. (2007).

The relationship between the leverage and dividend payout is negative and insignificant by using all the models so we conclude that the leverage is not the determinant of dividend payout policies in listed firms of KSE. So we will not reject the null hypothesis. The evidence supported by the findings of Baker et al (2007) and deviate from Belans et al. (2007) , Avizan et al. (2006). The coefficient of determination and the F-statistics are consistent in the entire model above, so the results are consistent with the empirical studies on determinants of dividend payout policy.

4.4.2 Determinants of Dividend Model - 2

$$DY_{it} = \beta_0 + \beta_1\, DY_{it-1} + \beta_2 NE_{it} + \beta_3 MSH_{it} + \beta_4 MV_{it} + \beta_5 TURN_{it} + \beta_6 SLACK_{it} + \beta_7 SIZE_{it} + \beta_8\, SG_{it} + \beta_9\, LEV + \beta_{10}\, MBV_{it} + \varepsilon_{it}$$

Table 6: Full Sample of KSE listed Non-financial Dividend and Non-dividing Paying Firms

Regressors	GMM	POOLED	FEM	REM
DY_{t-1}	0.0229	0.714	0.763	0.757
T-value	1.34	(43.14)**	(13.36)**	(15.27)**
P-value	0.0789	0.0000	0.0000	0.0000
NE_{it}	7.63E-05	1.15E-05	4.79E-06	1.11E-05
T-value	(4.97)**	(6.26)**	(5.37)**	(5.69)**
P-value	0.0000	0.0000	0.0000	0.0000
MSH_{it}	0.000354	0.000355	4.00E-05	0.000398
T-value	(3.23)**	(8.77)**	1.321868	(5.24)**
P-value	0.0012	0.0000	0.0476	0.0000
MV_{it}	3.96E-06	-1.66E-06	-8.76E-08	-1.16E-06
T-value	1.130249	-1.768269	-0.339132	-1.342579
P-value	0.2586	0.0772	0.7346	0.1796
$TURN_{it}$	3.000449	-0.000306	3.67E-06	-0.000233
T-value	2.537422	-1.370546	0.047103	-0.596008
P-value	0.0411	0.1707	0.9624	0.5512
$SLACK_{it}$	-0.012238	-0.243291	-0.065613	-0.194403

T-value	-0.065206	(-12.89)**	(-9.83)**	(-14.96)**
P-value	0.0480	0.0000	0.0000	0.0000
$SIZE_{it}$	-9.45E-06	-4.99E-08	2.20E-07	-1.39E-08
T-value	(-3.24)**	-0.08	1.701	-0.025
P-value	0.0012	0.9298	0.0887	0.0799
SG_{it}	-0.000358	-3.91E-06	1.47E-06	5.07E-06
T-value	(-2.89)**	-0.407	(2.53)**	0.904
P-value	0.0039	0.6838	0.0114	0.0461
LEV_{it}	-9.18E-06	-2.02E-06	-8.89E-08	-7.35E-07
T-value	-0.413	-1.265	-0.43	-0.730
P-value	0.6793	0.2060	0.6608	0.4653
MBV_{it}	-2.43E-05	-2.05E-05	1.23E-07	2.25E-06
T-value	-1.46	(-10.26)**	1.34	1.07
P-value	0.0424	0.0000	0.0307	0.0238
R-squared	0.521126	0.728939	0.932100	0.922548
Adjusted R-squared	0.519	0.727	0.927	0.922
F-statistic		442.9855	1.12E+33	
J-statistic				
Prob(F-statistic)	0.016715		0.000000	
Firms	320	320	320	
Observations	1466	1824	1830	

The model of determinants of dividend payout policy is also used to make the estimation for full sample. The above table shows the lagged dividend yield having the positive relationship with the dividend yield of the current year. By using the GMM the t value of the lagged dividend yield is (1.344) with the coefficient value of (0.0229) and the P value is (0.0789) which explained that the relationship between dividend yield and lagged dividend yield

positive and significant at 10% level of alpha. (0.0789 10%) The result of GMM is supported by the findings of Belans et al. (2007), Baker et al. (2007) but deviate by the findings of Reddy (2006). By using the pool least square (Pool), FEM and REM shows the (t – statistics = 43.14, 13.36, 15.27) and (P- values= 0.000, 0.000, 0.000) it is explained that dividend yield of the current year depends on dividend yield of pervious year, an evidence supported by the findings of Belans et al. (2007) and Amidu Abor (2006) and deviate from the findings of Reddy (2006).

The net earnings shows a positive relationship with the dividend yield by using GMM, Pooled, FEM and REM (t-statistics = 4.97, 6.26, 5.37 and 5.69) and (P-values =0.000, 0.000, 0.000, 0.000) highly positive significant and explained the firms with the positive earnings pay more dividends. So we reject the null hypothesis and conclude that firms listed in the KSE determine the amount of dividends according to the net earnings (profitability) of the firm. The evidence is supported by Adaoglu (2000), Amidu and Abor (2006) and Belans et al. (2007) and deviate from Jeong (2008).

The major shareholding (MSH) shows a positive relationship with the dividend yield by using the GMM, Pooled, FEM, REM (t statistics= 3.23, 8.77, 1.321, 5.24) and (P-value= 0.0012, 0.000, 0.0476, 0.000) which explains that relationship between the dividend payout is positive and significant. The firms listed in KSE with major shareholding (inside) pay more dividends play important role to determine the dividend payout policies. So we will reject the null hypothesis that there is no relationship between dividend payout and ownership structure (MSH). The evidence is supported by the findings of Farina and Fronda (2005), Amidu and Abor (2006) and deviate from Belans et al. (2007).

The financial characteristic of size has been explained by market capitalization and the size of the firm the null hypothesis for this financial characteristic shows no relation between the market capitalization and size with dividend payout ratio. The results show that there is a negative and insignificant relationship between dividend payout and MV. The (t-statistics = 1.30, -1.768, -0.339, -1.34) and (P-value=0.258, 0.077, 0.734, 0.179) which explained that firms do not prefer to invest more in assets rather than paying dividend. So we will not reject the null hypothesis. The findings deviate from the finding of Belans et al. (2007), Jeong (2008) and the evidence is supported by the findings of Avazian et al. (2006).

The relationship between the firm's liquidity and dividend payout by using the GMM and Pooled is positive and significant with (t-statistics=2.53,) and (P-value=0.041). The REM shows the negative insignificant so we choose the GMM and pooled regression results which are consistent as compared to FEM and REM, which explained that firms with more market liquidity pay more dividends. So we are in a position to reject the null hypothesis. The evidence is supported by the findings of Reddy (2006), Amidu and Abor (2006) and deviate from those of Belans et al. (2007).

The relationship between the slack (investment opportunities) and dividend payout policies is negative and highly significant with all of above mentioned models. The firms with large financial opportunities pay fewer dividends. The GMM, POOL, FEM and REM shows the (t-statistics=-0.065,-12.89,-9.83,-14.96) and (P-value=0.048, 0.000, 0.000, 0.000). So we conclude that the firms listed in KSE with more investment opportunities pay fewer dividends to its shareholders, influence the dividend payout policies and can play important role to determine the dividend payout polices in pakistan. The evidence is supported by the findings of Jeong (2008), Baker et al. (2007) and deviate from the findings of Naceur et al. (2006) and Belans et al. (2007).

The relationship between the leverage and dividend payout is negative and insignificant by using all the models so we conclude that the leverage is not the determinant of dividend payout policies in listed firms of KSE. So we will not reject the null hypothesis. The evidence is supported by the findings of Baker et al. (2007) and deviate from Belans et al. (2007), Avizan et al (2006).

4.4.3 Robustness Test

The robustness test consists of the sample of dividend paying firms. The dividend stability and the determinants of dividend payout policy in the KSE are presented in the proposed model. The results of our study indicate that both lagged dividend per share and change in earning per share depend mostly on the pervious earning per share. However, the target dividend payout ratio vary from 25% to 38.50% and the speed of adjustment is higher as compared to Turkey, US and Germany but lower as compared to developing countries like Tunisia, Ghana and Zimbabwe, confirming the absence of dividend smoothing in the KSE as calculated by Lintner on US market was 30%.but slightly smoothing their dividends. As far as the determinants of dividend payout ration are concerned, the results are almost identical to full sample with one difference. The lagged dividend yields of this time (t-1) have positive influence on current dividend.

5. Conclusion

Many researchers have conducted studies on the dividends and have proposed several theories to explain the dividend smoothing and its behavior. The earlier studies point out the tax preference theory, many recent studies emphasize on rather signaling and agency cost hypothesis. However the dividend set is yet puzzling, and unresolved. We attempted to find the answer of some core questions: Do the firms listed in the KSE follow the stable dividend payout policies? Does the dividend yield differ? What are the main factors that determine the dividend payout policies in listed firms of Karachi stock exchange?

In the first part of the study, Lintner, Fama and Babiak's models and a proposed model which is the extension of the partial adjustment model are applied using the static and panel data regressions. Our results show that Pakistan's listed firms rely more on the current earnings than past dividend to fix their dividend payments. In this way the dividends tends to be more

sensitive to current earnings and also on the prior dividends. The variability in the earnings of the firms reflected on the level of dividends. The high variation in the speed of adjustment in the both models Lintner's and Fama and Babiak by using all the recent techniques like GMM, POOL, FEM, REM and panel regression analysis which are powerful tool for the consistent estimations. The variations in the speed of dividend paying firms are 42.50% to 63.26% which is high. The KSE listed firms are similar to other markets of developing countries but better than many developing countries, so the listed firms of the KSE are not smooth to pay their dividends. Additionally, the target payout ratio is very low 25% to 38.50% with the sample of dividend paying firms. Therefore, low target payout ratio and high speed of adjustment clearly shows the trends towards the low smoothing and instability of dividend payout policies in Pakistan.

The second part of the study highlighted some determinants that may influence the dividend payout policies. First, the results showed that the firms having high profitability with stable earnings can afford larger free cash flows, thus pay out larger dividends. The firms with larger investment opportunities can easily influence and play important role to determine dividend payout policies in Pakistan. The ownership structure has a major impact to determine the dividend payout policy in Pakistan. The firms with the major inside share holdings pay more dividends to their shareholders in Pakistan which means that the firms with high inside ownership or major inside shareholding pay dividend to reduce the cost associated with agency conflict. Moreover, the growth of the firms does not have any impact on the dividend payout and does not agree with the informative content of dividends. The market liquidity of the firms has a positive influence which confirms that firms with higher market liquidity pay more dividends. The size is highly negative and significant which shows the firms invest in their assets rather than paying dividends to their shareholders. The results of our study generally support the pervious empirical studies on the dynamic and determinants of dividend payout policy.

6. Policy Implications

The implication that comes out from our study is that ownership structure has significant impact on dividend payout policy in Pakistan. The ownership identity also matters in this policy and inside ownership is positively associated with the growth of dividends. When legal environment does not provide sufficient protection for outside investors, entrepreneurs and original owners are forced to maintain large positions in their companies which results in concentration of firm ownership. The countries with poor investor protection corporate ownership like Pakistan have a significant impact on dividend policy. Ownership concentration appeared to be a more important tool to resolve agency conflict between controlling and minority shareholders when investor protection is weak. Furthermore it is important to mention here that the high relationship of ownership of major shareholders can create the block of holders which may easily influence the dividend payout policy in Pakistan. The Securities Exchange Commission of Pakistan has to properly manage the shareholding pattern of the listed firms of the KSE, Lahore Stock Exchange and Islamabad Stock

Exchange.

7. Limitations of the Study

This paper contributes to the literature of dynamics of dividends and determination of dividend payout policies, where we find significance for ownership on dividend payouts in case of emerging markets like Pakistan. There is a need to further analyze the dynamics and factors that can determine the dividends payout policy. Further, researchers may extend the present use of dividend models to examine the dynamics and determinants of dividend payout policy in emerging economies, including Pakistan. This would be an important and interesting exercise. Finally, from the findings of this paper it would also be useful to consider the following directions for future research:

- What determines the decision to pay or not to pay dividends in listed firms?
- What determines the dividend payout ratios of financial firms listed with the KSE?
- What determines the dividend policy decision of listed financial and non-financial firms of the KSE?

References

1. Allen, F. and Michaely, R. (2003) 'Payout policy', in Constantinides, G., Harris, M., Stulz, R. (eds.), *Handbook of the Economics of Finance*. Amsterdam.

2. Aivazian, V., Booth, L. and Cleary, S. (2003) 'Do emerging market firms follow different dividend policies from US firms', *The Journal of Financial Research*, 26, 371-3 87.

3. Arellano, M. and Bond, S. (1991) 'Some tests of specification for panel data: Monte Carlo evidence and an application to employment equation', *Review of Economic Studies*, 58, pp. 277-297

4. Berkley R. and Myers, S. (2005) *Principles of Corporate Finance*. 8th edition. London: McGraw-Hill.

5. Black, F. (1976) 'The dividend puzzle', *Journal of Portfolio Management*, 2, pp. 5-8.

6. Bhattacharya, S. (1979) 'Imperfect information, dividend policy and the bird in the hand fallacy', *Bell Journal of Economics*, 10, 259-27.

7. Baker, Malcolm and Jeffrey, Wurgler (2004) 'A catering theory of dividends', *Journal of Finance*, 59, pp. 1125-1165.

8. Baker, Kent H., Saadi, S., Dutta, Gandhi.D. (2007) 'The perception of dividend by Canadian managers: New survey evidence', *International Journal of Managerial Finance*, Vol. 3.

9. De Angelo, Harry, DeAngelo, Linda, and Douglas, J. Skinner (2004) 'Are dividends disappearing? Dividend concentration and the consolidation of earnings', *Journal of Financial Economics*, 72, 425-456.

10. De Angelo, Harry, DeAngelo, Linda and Stulz, René M. (2006) 'Dividend Policy and the earned/contributed capital mix: A test of the life-cycle theory', *Journal of Financial Economics*, 81, 227.

11. DSuza, J. (1999) 'Agency cost, market risk, investment opportunities and dividend policy', *Journal of Manager Financials*, Vol. 25, November.

12. Elsevier, Abov J., and Amidu M. (2006) 'Determinants of dividend payout ratios in Ghana', *Journal of Risk Finance*, Vol. 7.

13. Easterbrook, Frank H. (1984) 'Two agency: Cost explanations of dividends,' *American Economic Review*, Vol. 74, September, pp. 650- 659.

14. Eriotis, Nikolaos (2005) 'The effect of distribution earnings and size of the firm to its dividend policy', *International and Economics Journal*.

15. Eije.von.Henk. Muggings William, 'Dividend policy in the European Union', *Journal International Finance*, Vol. 2, 2006.

16. Fama, E. and Babiak, H. (1968) 'Dividend policy of individual firms: An empirical analysis', *Journal of the American Statistical Association*, 63, 1132-1161.

17. Fama, Eugene F. and French, Kenneth R. (2001) 'Disappearing dividends: Changing firm characteristics or lower propensity to pay?' *Journal of Financial Economics*, 60, 3-43.

18. Gordon, M. J. (1963) 'Optimal investment and financing policy', *Journal of Finance*, Vol. 18, No. 2, 264-72.

19. Jensen, M.C. (1986) 'The agency costs of free cash flow: Corporate finance and takeovers', *Journal of American Economic Review*, 76, pp. 323-329.

20. Lease, R.C., John, K., Kalay, A., Loewenstein, U. and Sarig, O.D. (2000) *Dividend Policy: Its Impact on Firm Value*. Boston: Harvard Business School Press.

21. Miller, M. and F., Modigliani (1961) 'Dividend policy, growth and the valuation of shares', *Journal of Business*, 34, pp. 411-433.

22. Miller, M. and Scholes, M. (1978), 'Dividends and taxes', *Journal of Financial Economics*, Vol. 6. No. 4, pp. 333-64.

23. Megginson,.William, (2006) 'Dividend policy in the European Union', *Working Paper Series*.

24. Nickell, S. (1981) 'Biases in Dynamic Models with Fixed Effects', *Econometrica*, 49, pp. 1417-1422.

25. Nacelur,.B. S. ,Goaid M., Belanes (2007)'On the determinants and dynamics of dividend policy', *Journal of international Review of Finance*.

26. Omet,.G. (2004) 'Dividend policy behaviour in the Jordanian capital market', *International Journal of Finance*.

27. Rubin, A. (2006) 'Ownership concentration and liquidity', *Journal of Financial Market*.

28. Xu, Zhaoxia, Booth, Laurnace (2006) 'Who smooth dividends', *Journal managerial Finance*.