Monetary Policy Restriction and Dividend Behaviour of Pakistani Firms: An Empirical Analysis

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1. INTRODUCTION

Dividend behaviour has extensively been reviewed by many researchers from time to time across different countries. Empirical evidences observed in most of the studies reveal equivocal results about dividend theories [Bhattacharyya (2007)]. Since, in absence of any unanimous findings, need for future research has not been restricted, theoretically. In developing countries like Pakistan, where limited research is available on corporate dividend policy, need for future research is more looked for. Most of the available research papers, address only firm specific determinants of dividend policy. Do macroeconomic variables influence corporate financing decisions? The need to address this question is the prime motive of this research paper. Major objective of this paper is to observe dividend behaviour of listed firms in Pakistan under monetary policy restrictions and this is the first attempt of its kind in Pakistan to the best of my Knowledge. This study is very relevant in present scenario since State Bank of Pakistan (SBP) has been persistently pursuing restricted monetary policy since 2005 to control inflation.

Miller and Modigliani are the focal names when we start thinking about dividend theories. MM theory of irrelevance, as quoted by Van Horne (1998), based upon assumption of perfect capital market, states that dividend policy has no affect upon value of the firm. Nonetheless, when markets are not perfect, as it is, dividend policy does matter and affect value of the firm as both managers and investor favour dividend payments as validated by many researchers.

2. MONETARY POLICY IN PAKISTAN

Pakistan is an emerging economy. After deregulation and privatisation, in 1990s, studying macro variables is of paramount importance and interest. Pakistan started liberalisation of the economy and also adopted market based monetary policy system. Main motive of monetary policy is to ensure low inflation along with sustainable economic growth. It regulates cost and allocates money and credit in the economy.

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Before liberalisation, interest rates were used to be fixed by the regulatory bodies whereas after liberalisation, State Bank of Pakistan's (SBP) open market operation is announced to be the major instrument of monetary policy in 1995.

In year 2001, although Pakistan put efforts to bring macroeconomic fundamentals back on track its monetary policy had to be tempered due to conflicting economic goals. In overall terms monetary policy remained tight in year 2001 [SBP (2001)]. Macroeconomic discipline achieved in year 2001 led to easing of monetary policy in year 2002. Trade deficit was much lower than year 2001 and inflation was down to 3.5 percent [SBP (2002)]. Year 2003 again witnessed strong boost rising real GDP growth to 5.1 percent level. The scale and depth of improvement in year 2003 is much higher than year 2002. SBP increased market liquidity by lowering discount rate substantially [SBP (2003)].

Year 2004 again witnessed loose monetary stance being adopted by SBP since couple of years. It not only led to an immense increase in aggregate demand along with increase in real GDP growth to over 6 percent but also contributed to growing inflationary pressures in the country [SBP(2004)]. In year 2005 there is an important transition in monetary policy i.e. from accommodative to aggressive tightening, although SBP had started raising benchmark interest rates early in year 2004. Inflation was the main driving force behind this move [SBP(2005)]. This move continued in year 2006 although the chief policy variable, i.e. discount rate remained same. However, State bank focused on draining excess liquidity from the market [SBP(2006)].

In order to temperate demand pressures in the country, SBP sustained tight monetary policy in year 2007 [SBP(2007)]. Increased inflationary pressures led SBP to continue this policy in year 2008 and 2009 also [SBP(2008) and SBP (2009)].

3. LITERATURE REVIEW

Starting from John Lintner (1956), noticeable work upon dividend behaviour and policy has been carried out in different parts of the world. Lintner, in his research to know how firms decide to distribute their earnings revealed that current earnings and lagged dividends the foremost factors to be considered in dividend decisions. He surveyed 600 firms and on basis of interviews of officials developed a model and tested further. Results also reveal that firms tend towards their target payout ratios by partial adjustments reflecting soothing behaviour.

Following Lintner, many researchers explored other dividend determinants by extending/modifying Lintner's model. Dividend policies of individual firms were studied by Fama and Babiak (1968) by modifying Lintner's model. They deleted constant and added lagged profits in the model. Al-Najjar (2009) studied dividend behaviour of Jordanian firms and found that factors affecting dividend policy in developed countries are same as in case of Jordan. Results of his study also validated Lintner's Model. Author used Pooled and Panel logit and tobit models on 86 non-financial listed companies. Ahmed and Javaid (2009) observed determinants of dividend policy in Pakistan along with testing of Lintner's model of dividend soothing using panel data of 320 non-financial firms. Results reveal that firms rely, mainly, on current earnings and past dividends for dividend decisions along with instability towards dividend soothing.

Do foreign affiliates of a multinational firm depict same dividend behaviour like of a parent company to its common shareholders? Interesting work completed by Desai, *et*

al. (2001), reveals that majority-owned foreign affiliates of American companies portray same dividend policy as of domestic companies paying dividends to diffused common shareholders. Musa and Fodio (2009) by using a model developed by Musa, studied dividend behaviour of Nigerian firms revealing that previous dividend, current earnings, cash flow, investment and net current assets have significant impact on dividend policy. Dividend stability has been observed by Al-Yahyaee, *et al*. (2010) in Oman by working on a selected sample firms using Lintner's model.

Eriotis (2005) examined, in Greece, the effects of distributed earnings, size of the firm and changes in dividend and distributed earnings from the last year. Data comprises of a sample of 149 firms for a period of 5 years. Firms prefer to distribute each year a rather constant dividend, by adjusting to distributed earnings and size.

Abor and Bopkin (2010) observed effects of investment opportunities and some other financial variables including some macro variables (inflation rate and GDP) as control variables. Study is based upon a sample of 34 emerging market countries, including Pakistan, for a period of 17 years from 1990–2006. Authors observed significant relationship between potential investment opportunity and dividend policy. Rozeff (1982) studied impact of agency costs, Beta (a proxy for financial and operating leverage) and growth of a firm, upon dividend policy. He observed significant results for all these variables.

Dividend behaviour similarity between US firms and developing countries (eight emerging markets including Pakistan), observed by Aivazian, *et al*. (2003). However, sensitivity of variables differs as country specific situations may effect. Interesting result is that in emerging markets, firms found to give higher dividend payments than US firms, although these face more financial constraints, relatively. Garrett and Priestly (2000) worked on aggregate stock market data of US firms with extended Lintner model and claimed that target dividends are a function of permanent earnings and lagged prices. They introduced new model which assumes that managers tend to minimise costs while pursuing for target dividends. Regarding Signalling theory, authors concluded that dividends signal about positive shocks to current permanent earnings and not to future permanent earnings.

Bhattacharyya, *et al*. (2008) worked in a different dimension on a hypothesis that high quality agents (managers) have access to more positive NPV projects rather than low quality agents. High quality agent demands higher compensation. Model based upon this hypothesis, had been tested for Canadian firms over the period from 1993-95 using tobit regression analysis. Canadian firms found to support this hypothesis.

Some authors have worked, specifically, on dividend determinants related to ownership of firms. In Pakistan, ownership structure has significant impact upon dividend payout policy where as cash flows have insignificant impact. It is finding of a study by Afza and Mirza (2010), upon 100 companies listed at KSE. Board of directors act as a tool to monitor management and hence helps to resolve agency problems. However, composition of board does matter and have influence on dividend policy accordingly. In same way ownership structure also dominates corporate decisions involving voting requirements. Higher the concentration of ownership, higher will be chances of exploitation of minority shareholder's rights. Abdelsalam, *et al*. (2008) examined above both elements in Egypt for a pooled data of 50 firms for three years

using logit and tobit models. He found significant association between institutional ownership and dividend policy and insignificant for board composition.

In family controlled firms, independent directors have significant impact on dividend policy. Atmaja (2010) observed this finding in his study upon Australian firms over the period from 2002-2005 using panel (random effects) regression. Pandy (2001) observed sensitivity of dividend behaviour of Malaysian firms, using multi-logit analysis, to changes in earnings. In addition to observe sensitivity, application of Lintner's framework depicted less stable dividend policies. Four possible behaviours i.e.: (a) omission; (b) decrease; (c) increase; and (d) no change, observed to three possible changes in earnings i.e. (increase, decrease and negative earnings).

Not only internal but external factors, like monetary policy, do affect financial decisions of the firms. Pandey and Bhat (2007) observed, in India, that monetary policies have significant influence upon dividend behaviour and 5 percent to 6 percent reduction observed in payout. Authors tested extended Lintner's model using GMM estimator for data of 571 firms over a period of 8 years. Ameer (2008) worked out upon determinants of dividend policy of Malaysian Banks. He used ordered probit modelling technique, in addition to check speed of adjustment through Lintner model, to check flexibility of dividend policy to certain variables. In addition to firm specific, author observed monetary policy effects on dividend payout.

Goddard, *et al*. (2006) tested smoothing and signalling hypothesis upon 137 UK firms, over the period from 1970 to 2003. He observed contemporary relationship between dividends, prices and earnings. Some evidence in favour of both hypotheses has been revealed by causality tests.

Hussainey and Eisa (2009) in addition to work on dividend signalling hypothesis also included signalling behaviour of voluntary disclosure statements incorporated in annual reports. By using event study methodology, they observed behaviour of 33 UK non-financial firms after a decline in their sustained earnings growth. Findings do not support dividend signalling hypothesis however support disclosure signalling behaviour. Nissim and Ziv (2001) examined signalling hypothesis and revealed, empirically, that dividend changes signal profitability level in subsequent years.

Bhattacharyya (2007) argues continuity of search for more elucidations as he observed equivocal empirical results of dividend theories. He collected empirical work done based upon clientele, signalling and agency hypothesis and extracted stylised facts also.

Dividend policies are affected by legal corporate framework of a particular country. Countries having better legal protection for minority shareholders, observe higher payouts. Porta, *et al.* quoted their findings by doing empirical work over a cross section of 4000 firms of 33 countries.

Baker and Wurgler (2004) introduced catering theory of dividend. Authors proposed that when investors pay premium on stock price, they, infact, anticipate dividends and managers cater to them by paying dividends and vice versa. Empirical findings confirm to their theory.

In addition to explicit claims, there are implicit claims, upon an organisation, by non-investor stakeholders (e.g. employees, customers, vendors etc.). These stakeholders may suffer costs if a firm runs out of business i.e. cost of jobs search by employees, increased maintenance costs for customers etc. Firms offering more implicit guarantees

are more valued. These have to maintain higher liquidity levels to pay off potential implicit claims. Hence being more conservative, trying to avoid from financial distress, use more equity. Dividend payout is less in these firms. Although this stakeholder's theory is not very persuasive as firms maintaining this level of excellence earn higher profits and hence higher payouts. Holder, *et al.* (1998) tested this theory and validated existence of this relationship.

Michel (1979) observed industry impact upon dividend policy in United States. There are similarities in structural characteristics of firms of an industry. Hence, different industries would have varying influences upon dividend policies as would have different investment opportunities. Empirical results, concluded by Michel (1979), confirm the assumption.

4. MODEL AND METHODOLOGY

The Lintner dividend model can be assumed as the mother of all dividend behaviour models. Almost all researches on dividend behaviour are based upon this model, modified model or its enhanced versions and the same practice would be followed by us. However, our study focuses on dividend payment behaviour of Pakistani firms in tight monetary policy regime. In perfect capital market, as Miller and Modigliani proposed, cost of internally generated and external funds would not be different. But we are living in imperfect world and hence above proposition would not stand valid. There would be an information asymmetry between borrowers and lenders. A moral hazard of default would prevail. Investors have to incur project monitoring costs and also demand risk premium, hence cost of external funds will be greater than internal funds. At times of restricted monetary policy, cost of external funds increases and firms prefer to utilise internal funds provided that firms have investment opportunities. To maintain internal reserves, for internal financing, dividend payout decreases. Although firms may go for external financing (debt), in case of monetary policy restriction, if it has yet to attain optimum level of capital structure and want to gain tax benefits of interest expense.

Cost of funds rises. (Restricted monetary policy)

Dividend Payout Decreases
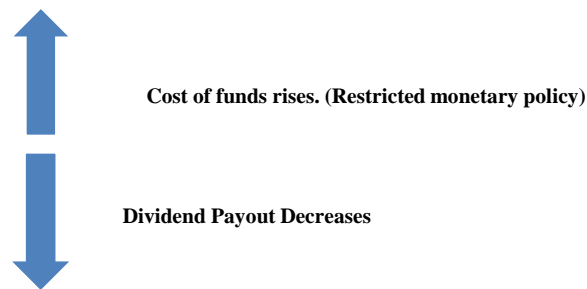
Below mentioned is our proposed replicated model of Pandey and Bhat (2007).

$$D_{it} = \propto + \beta_1 E_{it} + \beta_2 D_{it-1} + \beta_3 D_{it-2} + \beta_4 MR_t(D_{it-1}) + \beta_5 MR_t(D_{it-2}) + \theta_i + \varphi_t + \mu_{it}$$

D_{it} = Dividend for firm *i* in time *t*

E_{it} = Earnings (net profit) of firm i in time t
D_{it-1} = Dividend in lagged year 1
D_{it-2} = Dividend in lagged year 2
MR_t = Monetary restriction in year t– A dummy variable.

θ$_i$ accounts for individual firm effect while φ_t measures time-based effect. Earning is a major and dominant dividend determinant for every firm. Lagged dividends, do have impact upon dividend payout as firms tend to move gradually to target dividends i.e. dividend soothing. Pandey and Bhat (2007) used two lagged periods rather one. Monetary restriction is a dummy variable with value 1 in case of tight monetary policy and zero (0) otherwise. Identifying monetary policy with a only one variable, like discount rate, lending rates or money supply may not be very explanatory. Furthermore, in Pakistan monetary policy announcements are twice and thrice times a year from 2006 onwards and concluding a policy for whole year may be difficult. Hence, rather using, discount rate, lending rates or money supply etc. we use State Bank of Pakistan's Annual reports for identification of restricted monetary policies in respective years. In annual reports, a single line sentence, describing overall monetary policy stance in that particular year, is available. From year 2001 to 2009, monetary policy is loose only in three years from 2002 to 2004.

Balanced panel data of 900 observations (100 cross section firms for 9 years) is being used in estimation of above model. Unlike cross section or time series, panel data encompass certain advantages. Gujrati (2003) has cited these advantages quoted by Baltagi (1995). Panel data takes heterogeneity into account through individual firm effect. A combination of cross section and time series observations give more rich information, more variability, less collinearity among variables, more degrees of freedom and more efficiency. Panel data better detects and measures effects that are not observable in pure cross section or time series. The dynamics of change are better observed through panel data as repeated cross sections of observation are studied. In our estimation model, panel data would also serve best to study effect of monetary policy restrictions over the years and the dynamics of change in dividend payments.

4.1. Hypothesis

$$H_0 : \beta_1 = 0, \ \beta_2 = 0, \ \beta_3 = 0, \ \beta_4 = 0, \ \beta_5 = 0$$
$$H_1 : \beta_1 > 0, \ \beta_2 > 0, \ \beta_3 > 0, \ \beta_4 < 0, \ \beta_5 < 0$$

Above proposed is a dynamic model with lagged dependent variable as explanatory variable. Dynamic models are bit difficult to estimate. Dynamic models estimation is recommended through usage of GMM estimator as literature enforces it.

5. SAMPLE AND DATA

A sample of 100 firms listed at Karachi Stock Exchange has been selected. To ensure equal participation of each industry, in sample, equal sample size (proportionately to respective population size) from each group has been selected. Source of panel data for the period of 2001-2009, is State Bank of Pakistan.

For industry classification, State bank's classification, based upon economic grouping, has been used. State Bank of Pakistan has classified firms in nine economic groups based upon logical similarity in nature of business. Only non-financial firms are

being analysed like did by [Porta, *et al.* (2000); Rozeff (1982); Ahmed and Javaid (2009); Al-Najjar (2009); Musa and Fodio (2009); Hussainey and Eisa (2009)]. Financial structure of financial firms is considerably different from non-financial firms. Regulatory restrictions on financial firms influence their financing decisions and these restrictions affect financial firms' more than non-financial firms. Like in case of banks, these are bound to maintain a minimum capital adequacy ratio at all times, under prudential regulations, and it influence their financing decision. Ogler and Taggart (1983), cited in Ameer (2008), p.1], empirically observed this later mentioned finding.

Exclusion of Firms owned by State (wholly or partially, as best we can identify) as their financing decisions may have been affected due to government influence. This practice also adopted by other researchers like Porta, *et al.* (2000); Afza and Mirza (2010).

In order to be more pragmatic, factors, which may create biasness in research findings and hamper explanatory power of our explanatory variables, have been considered while sample selection. Very small firms having net sales less than PKR 100 million, firms having negative net worth in more than one year, with unavailable data for one or more consecutive years, in losses for more than one consecutive year and those without dividend information are excluded. Pandey and Bhat (2007) also applied few of these criteria while sample selection. Consideration of losses and negative net worth is due to the fact that dividends are basically a primary function of an organisation's profitability and net worth. Firms, with better dividend payment record, have been preferred in sample. Musa and Fodio (2009) also quoted Kumar and Lee (2001) in favour of above point that reason for dropping zero dividend payout firms is that relative performance evaluation of dividend model is meaningless for such firms. Exclusion of negative worth firms also supports this logic as firms facing losses will definitely not be able to pay dividend and to check these firms in model will be meaningless. Afza and Mirza (2010) also have qualification that firms should not have missed dividend payment in more than one year and firms should not be in losses. Care has been taken to take into account those firms which are also part of KSE 30 or 100 index so that sample should represent maximum of the market capitalisation.

Table 1

Sample Selection Criteria

Sample Size	100 firms. Equal sample size from each industry (proportionate to their respective population size)
Study Period	2001–2009
Criteria	Non-financial firms
	Excluding very small firms (having net sales less than 100 million)
	Excluding firms having negative net worth in more than one year
	Excluding firms with unavailable data for one or more consecutive years
	Excluding firms in losses for more than one consecutive
	Selection of firms with preferably better dividend payment record

6. RESULTS

Table 2, below, provides summary of descriptive statistics of earnings and dividends. There is an increasing trend in profits and dividends over the period of time as evident from their mean values. There is more variability in earnings as compared to dividends. Mean payout ratio prevails around 50 percent with less variability (standard deviation about 13 percent).

Table 2

	Earnings (PKR Millions)				Dividends (PKR Million)				Payout
Year	Mean	Stdev	Max	Min	Mean	Stdev	Max	Min	(%)
2001	299	1,162	10,859	−1.357	165	527	4,513	0	55%
2002	314	900	7,287	−2,649	226	930	8,794	0	72%
2003	397	786	6,102	−125	239	719	6,249	0	60%
2004	499	894	5,588	−22	225	602	4,282	0	45%
2005	647	1,161	7,855	−2	228	626	4,751	0	35%
2006	750	1,359	7,558	−321	351	1,006	6,927	0	47%
2007	794	1,686	10,597	−570	287	688	4,441	0	36%
2008	620	3,027	19,655	−14,745	334	907	6,785	0	54%
2009	644	1,701	9,415	−5,587	450	1,178	8,923	0	70%
All Years	552	690,98	19,655	−14,745	278	217,027	8,923	0	50%

Table 3 depicts estimation results. Model 1 is fixed effects model (cross section fixed). Significant results for earnings and lagged dividend (1) have been observed at p-value of less than 1 percent. A coefficient of One lagged year dividend has greater influence upon dividend payment rather current earnings where as interactive variable of monetary restriction and lagged dividends have mixed and insignificant results. Coefficient of determination has significant value of 0.71. In model 2, random effects approach has been used. Here lagged dividend has significant results with coefficient of 0.72 at p-value of less than 1 percent. Current earnings have, comparatively, less coefficient value of 0.06 but also insignificant at 10 percent. Monetary restriction interactive variable 1, like in fixed effect model has also negative coefficient but insignificant as p-value is higher, even than 10 percent. Surprisingly, second monetary restriction interactive variable has positive coefficient along with significant results at 5 percent.

Model 3 comprises of GMM estimation, which is urged, in dynamic panels. Our model is also a dynamic one. Lagged dependent variable may create biasness and GMM can manage it well. GMM estimation requires instruments and we have used explanatory variables as instruments. Results reveal almost similar trends like in models 1 and 2. Both earnings and one year lagged dividend have significant coefficient values at p-value of 1 percent. Lagged dividend coefficient has higher value than of earnings. Monetary restriction interactive variable, again in this model, has negative coefficient supporting the hypothesis but is insignificant even at p-value of higher than 10 percent. Second lagged dividend is appeared with negative coefficient although insignificant. MR1 has negative coefficient but insignificant and surprisingly MR2 has positive coefficient and significant at p-value of 1 percent. Results of all four models portray a very similar and significant finding that first lagged dividend has a significant and highest positive impact upon dividend decision of firms in Pakistan. Current year earnings do have a positive and significant impact but follow the last year dividend in dividend decision. Due to mixed

Table 3

Variable	Model 1 FEM	Model 2 REM	Model 3 GMM
Eit	0.021*	0.066***	0.203*
t-value	6.593	1.717	6.590
p-value	0.000	0.086	0.000
Dit−1	0.353*	0.725*	0.626*
t-value	4.846	7.043	9.092
p-value	0.000	0.000	0.000
Dit−2	0.059	0.014	−0.040
t-value	1.030	−0.135	−0.543
p-value	0.303	0.893	0.586
MRt×Dit−1	−0.052	−0.179	−0.212
t-value	−0.675	−0.700	−1.177
p-value	0.499	0.484	0.239
MRt×Dit−2	0.056	0.395**	0.350*
t-value	0.765	1.925	2.366
p-value	0.444	0.055	0.018
R^2	0.714	0.721	0.672
Adjusted R^2	0.664	0.719	0.670
Durbin–Watson		2.288	2.212
Prob (F-Statistics)		0.000	
J-Statistic			5.28E

*Significant at 1 percent or less. ** Significant at 5 percent. *** Significant at 10 percent.

results and insignificant value for second lagged dividend variable, we can claim that monetary restriction does not have any significant bearing on dividend decisions of Pakistani firms although theory is opposite to the results. Coefficients of lagged dividend in all models range from 0.3 to 0.7. In model 4 value is 0.626 with adjustment parameter (1-0.62) = 0.38. Target payout ratio (0.20/0.38) is 53 percent. Firms seem to observe stable dividend policies.

7. CONCLUSION

Observing effect of monetary policy on dividend behaviour is of paramount importance and to best of our knowledge, it is first study of its kind in Pakistan. Lintner's model has been used to test dividend stability. For dynamic model estimation, GMM is strongly recommended method of estimation and same has been used in addition to fixed effects and random effect models. Pakistani firms have been observed to follow relatively stable dividend policies. Firms have moderate target payout ratios and adjustment factors. One year lagged dividends have strongest influence upon dividend decisions followed by current earnings. Insignificant results of monetary restriction variable do not claim any effect on dividend decisions of Pakistani firms. Although second monetary interactive variable has positive coefficient in GMM estimation but results of first MR interactive variable and second lagged dividend variable lead to the above conclusion.

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