

## Determinants of Dividend Policy of Banks: Evidence from Pakistan

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### Abstract

*This study examines the determinants of dividend policy of Pakistani banking sector from 2005 to 2015. By employing panel data techniques, the results of this study reveal that profitability, investment opportunities and last year dividend have significant positive effect on dividend payouts of Pakistani banks whereas growth and loan deposit ratio have significant negative influence. Moreover, the results of this study also highlight that last year dividend paid is the most significant factor affecting the dividend payout ratio of the banks. The results also reveal that there is no significant difference in the factors affecting dividend payout ratio before and after the financial crisis. Moreover, switch from Basel II to Basel III accord capital regulations did not have significant effect on the dividend policy of the Pakistani banks. Findings of the study support to dividend smoothing hypothesis, life cycle theory, signaling theory and pecking order theory.*

**Keywords:** Dividend, Banking sector, Investment, Profitability

### Introduction

Every successful business earns profit. But the question arises about how much profit should be distributed to shareholders in the form of dividend and how much should be retained in business for future needs. This decision is guided by dividend policy. There are two schools of thoughts on the impact of dividend policy on the firm value. First Miller and Modigliani (1961) explained that in perfect capital market dividend policy has no impact on the value of firm. But afterwards no. of researchers opposed this dividend irrelevance theory and states that a large number of factors cause capital market to be imperfect. Some of these factors are taxes, agency cost, and transaction cost etc. (DeAngelo and DeAngelo, 2007).

Even though a lot of research in this area has been conducted but still this phenomenon is not clear. Brealey and Myers (2003) show dividend phenomenon is among the top 10 unresolved issues in corporate finance. Dividend policy influences financing and investing decisions of firm. When cash dividend is distributed among shareholders, it affects the liquidity of firm. Dividend payments decreases retained earnings for investments and make need for external financing. So, it influences capital structure and cost of capital of firm. Dividend pay-out also positively influences market price of stock (Watson and Head 2004). Therefore dividend policy should be set in such a manner that fulfils shareholders as well as firm's needs. A lot of research has been conducted for investigating factors which management should consider while setting dividend policy. But maximum studies are conducted in developed countries like UK, USA, etc. Limited research is done in developing countries like Pakistan, India, etc. There are no universally applicable determinants of dividend policy because many other factors effect payment decision i.e. firm and market characteristics, different alternative forms of dividends (Baker and Weigand, 2015). So there is a need to conduct studies in developing countries in order to explore factors having influence on dividend policy.

Although, determinants of dividend policy of Pakistani banking sector is scrutinized by number of researchers (Gul, Mughal, Bukhari and Shabir, 2012; Zameer, Rasool, Iqbal and Arshad, 2013), however, this paper makes its contribution in several ways. First it uses some variables e.g. total deposits to total assets ratio, GDP growth rate, Loan deposit ratio and Investment opportunities etc. not previously used for Pakistani banking sector. Secondly this study uses the latest data of banks from 2005 to 2015 for analysis. Third this study tries to

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quantify the effect of financial crisis and change in regulatory capital on the dividend paid by the Pakistani banks. We attempt to fill the gaps in literature by providing empirical evidences on the determinants of Pakistani banking industry using latest and up to date. The findings of this study are beneficial for management of banks in Pakistan in attracting shareholders and fulfilling their needs.

## Literature Review

Debate relating to determinants of dividend policy boosted up from work of Lintner (1956) when he took the interview of 28 managers in USA and identified that current earnings and last year dividend are most important determinants for USA firms. He also concluded that managers try to keep dividend stable and increase only when they sure to maintain it and managers also avoids from dividend cuts. Rozeff (1982) explained that growth, insider ownership, number of shareholders and risk are core determinants of dividend policy for USA firms. Baker and Powel (2000) concluded that NYSE listed firms focus on current and future level of earnings, pattern of past dividends for setting their dividend pay-out. Myers and Bacon (2004) described that price earnings ratio and sales growth have positive association and insider ownership have negative relationship with dividend policy. Amidu and Abor (2006) analysed the financial data of Ghana stock exchange listed firms and found profitability, cash flow, sales growth and market to book ratio as dominating variables effecting dividend payments. Ahmed and Javid (2008) worked on Karachi stock exchange listed firms and clarified that current period income have more influence on dividend payments than last period dividend. And profitable firms with stable income can afford huge amount of free cash flow, so pays high dividends. They also provided effecting variables i.e. ownership structure, market liquidity, leverage, size and investment opportunities. Lee (2009) concluded that safer banks and have high profits pay more dividend in Korea. Imran (2011) explored positive impact of earning per share, growth in sales, last period dividend, size and profitability on dividend policy while cash flows shows negative association with it in Pakistani corporate sector. Wang, Manry and Wandler (2011) studied the dividend policies of China state owned firms of Shanghai stock market from 1998 to 2008. They explained that dividend payment rate of these firms change by changing in earnings. Also provided that cash dividend reduce agency problems and cash dividend is preferred in case of state owned enterprises. Average dividend payment rate lies between payout rates of emerging markets and developed countries. Gul et al. (2012) observed that banks listed on Karachi stock exchange keep in mind the factor i.e. growth, firm size, profitability, leverage and firm risk when they have to decide regarding dividend payments. Alzomaia and Khadhiri (2013) explicated the determinants of dividend policy of Saudi Arabia firms and listed profitability, firm size and last year dividend as main factors. Imran et al. (2013) analyzed financial record of Pakistani banks and found positive influence of profitability, last year dividend and ownership structure on dividend policy and negative relationship is observed with liquidity. Pangemanan, Sonny and Oratmangun (2015) worked on the dividend policy of banking sector of Indonesia. For this purpose, 16 banks selected that were listed on Indonesia stock exchange during 2008 to 2013. They found positive relationship between profitability and dividend payout but fail to find any bond between debt, maturity, size and dividend payment. Yousaf and Ismail (2016) said that earnings, firm size, investment opportunities, debt and largest shareholders are major factors in deciding dividend payout ratio for Malaysian companies. Banerjee (2016) studied Indian information technology sector and its study results show positive correlation of profitability, leverage and P/E ratio with dividend payout.

## Hypotheses

The following hypotheses have been developed in this study

H1: There is a significant positive impact of profitability on dividend payout.

H2: There is a significant negative impact of total deposits to total assets ratio on dividend payout.

H3: There is a significant negative impact of growth on dividend payout.

H4: There is a significant negative impact of loan deposit ratio on dividend pay-out.

H5: There is a significant negative impact of investment opportunities on dividend pay-out.

H6: There is a significant negative impact of leverage on dividend payout.

H7: There is a significant positive impact of last year dividend on dividend pay-out.

H8: There is a significant positive impact of GDP growth rate on dividend pay-out.

H9: There is significant difference in the factors affecting dividend pay-out ratio in pre and post financial crisis period.

H10: There is significant difference in the factors affecting dividend pay-out ratio in different Basel Accords.

## Methodology

The objective of the study is to identify determinants of dividend policy of 24 banks listed on Karachi Stock Exchange during the period from 2005 to 2015. Panel data methodology has been used to explore the impact of Basel Accords capital regulations on the bank performance. According to Hsiao (1986) panel data provides more degrees of freedom and lower collinearity among explanatory variables. Panel data enables the researchers to study more complicated behavioral models.

Data of banks used for analysis which are taken from official website of banks, Karachi stock exchange (KSE), State Bank of Pakistan (SBP) and Pakistan Bureau of Statistics (PBS).

The equation for the study is as follows.

$$DPR_{it} = \beta_0 + \beta_1 ROA_{it} + \beta_2 TDTA_{it} + \beta_3 GROWTH_{it} + \beta_4 LDR_{it} + \beta_5 IO_{it} + \beta_6 LEVERAGE_{it} + \beta_7 LYD_{it} + \beta_8 GDP + \varepsilon_{it}$$

Where DPR = dividend per share, PROF = profitability, TDTA = total deposits to total assets, GROWTH = growth in revenue, LDR = loan deposit ratio, IO = investment opportunities, LEVERAGE = financial leverage, LYD = last year dividend and GDP = growth rate of real GDP.

## Empirical Analysis

### Descriptive Statistics

Table 1 shows the descriptive statistics of variables of study. Table shows that average dividend payout ratio (DPR) of banks listed on KSE is 19.88% of. The average Return on asset (ROA) of the banks is 0.42%. This ratio explains that banks are not efficiently utilizing their assets for generating revenue. Average of Total Deposits to Total Assets (TDTA) ratio is 74%. Growth in revenue (Growth) and Loan Deposit Ratio (LDR) have mean 26.83% and 61.56% respectively. Average value of Investment Opportunities (IO) is -1.05% and of leverage is 87.47%. Last year dividend (LYD) is paid on average Rs.1.73 per share with deviation of Rs. 2.95 per share and GDP variable shows that Pakistan's economy is growing at rate of 4.16% on average during last 11 years (2005-15).

Table 1: Descriptive Statistics for Banks in the Years 2005 to 2015\*

Variables	Mean	Std. Dev.	Minimum	Maximum
DPR	0.1988	0.2565	0.0000	0.8875
ROA %	0.0042	0.0207	-0.0774	0.0399
TDTA %	0.7368	0.1217	0.2114	0.9326
GRW %	0.2683	0.3414	-0.2416	1.738
LDR %	0.6156	0.1545	0.3108	1.097
IO %	-0.0105	0.0653	-0.2799	0.0653
LEV %	0.8747	0.1271	0.0000	0.9842
LYD	1.7325	2.956	0.0000	14.00
GDPGR %	0.0416	0.0197	0.0036	0.0896

\*Values rounded off to four decimal places

### Diagnostic Test

To check the presence of multicollinearity Pearson correlation and Variance inflation factor (VIF) are mostly commonly used by researchers. Table 2 reports the results of the correlation analysis. According to Gujarati (2009) correlation coefficient value of over 0.8 or 0.9 would create major issue. As none of the value reaches that point so multicollinearity is unlikely to be a problem.

Table 2: Correlation Matrix\*

	DPR	ROA	TDTA	GRW	LDR	IO	LEV	LYD	GDPGR
DPR	1.00								
ROA	0.44	1.00							
TDTA	0.06	0.12	1.00						
GRW	-0.22	0.01	0.11	1.00					
LDR	-0.29	-0.09	-0.20	0.29	1.00				
IO	0.43	0.59	0.28	0.12	-0.25	1.00			
LEV	-0.03	0.07	0.68	-0.06	0.10	0.02	1.00		
LYD	0.61	0.43	0.10	-0.18	-0.17	0.41	-0.00	1.00	
GDPGR	-0.01	0.18	0.10	0.43	0.20	0.11	-0.00	-	1.00
								0.05	

\*Values rounded off to four decimal places

Table 3 reports the VIF values for the model. Wooldridge (2008) stated that if the value of VIF is greater than 10, then there is a problem of multicollinearity. Values reported in table 4 shows that values of all variables are less than 10. So, multicollinearity is not a problem.

Table 3: Variance Inflation Factor

Variable	VIF	Tolerance
ROA	1.81	0.55
IO	2.07	0.48
TDTA	2.70	0.37
LEV	2.39	0.41
LYD	1.39	0.71
GRW	1.48	0.67
LDR	1.38	0.72
GDPGR	1.41	0.70
Mean VIF	1.83	

Wooldridge test (2002) is used for checking the autocorrelation for unbalanced panel data. The result in table 4 rejects the null hypothesis, so there is the problem of autocorrelation in data. This problem is solved by using special command (VCE Robust) available in STATA version 11.

Table 4: Wooldridge Test Results for Autocorrelation

Ho: no first-order autocorrelation	
F( 1, 21)	42.590
Prob. > F	0.0000

Breusch pagan test is conducted for checking homoscedasticity. Test result shows that p-value is 0.0001 which is less than 5% which rejects the null hypothesis. So heteroskedasticity is present in data. Problem of heteroskedasticity is solved by using special command (VCE Robust) available in STATA version 11.

Table 5: Breush Pagan Test Results for Homoscedasticity

Ho: Constant variance	
chi2(1)	15.08
Prob. > chi2	0.0001

First of all, Breusch and Pagan Lagrangian multiplier test (LM test) is used for selection of model between pooled or random effect models. Here the obtained p-value 0.0002 is less than 5% and rejects the null hypothesis of selection of pooled effect model. In order to select between fixed effect and random effect hausman specification test is used. P-value of 0.1254 fails to reject null hypothesis. So, random effect model is most suitable for this study.

### Determinants of Dividend Pay-out Ratio

Panel regression with random effect is used to check the effect of explanatory variables i.e. PROF, TDTA, GRW, LDR, IO, LEV, LYD, GDPGR on the dividend payout ratio. R-square shows that 52.29% variation in dividend payout ratio (DPR) is explained by independent variables. Results are presented in table 6 and explained as under.

Table 6: Random effect Regression Estimates of Determinants of Dividend Pay-out Ratio

	Coeff.	Std. Err.
ROA	1.137*	0.630
TDTA	-0.159	0.124
GRW	-0.070**	0.029
LDR	-0.296**	0.120
IO	0.377*	0.200
LEV	0.069	0.085
LYD	0.046***	0.011
GDPGR	0.397	0.412
No. of Observations	210	
Wald Chi (8)	72.12***	
R-Square	0.5229	

\*, \*\*, \*\*\* Significant at the 1%, 5%, and 10% levels

Profitability has positive significant impact on the dividend pay-out. This shows that firms with high profits used it as signaling device for future performance. This result supports the life cycle theory which explains that mature firms with more profit can pay more dividends. Here findings of this study are accepting H1. This result supports the dividend smoothing hypothesis as reported by Nuhu, Musah and Senyo (2014). Total deposits to total assets ratio has negative but statistically insignificant effect on the dividend payout. This means that any change in this ratio has no impact on dividend payout thus rejecting H2. Growth in interest and non-interest income is found to have significant negative impact on the dividend payout ratio thus accepting H3. Life cycle theory states that young firms have more growth opportunities but normally less profitable. Young firms should prefer to retain earnings in order to finance its growth opportunities (Myers and Majluf, 1984). This negative relationship is in agreement with Demirgunes (2015)

Loan to deposit ratio has negative significant impact on dividend payout. It explains that an increase in loan deposit ratio results in the decrease in dividend payments. Olowe and Moyosore (2014) pointed out that high loan to deposit ratio reduces liquidity position of banks especially in form of cash. So it will not be in a position to pay high dividend. Result of this study second the findings of Kiefe (2011). So here the results are accepting H4. The result for investment opportunities shows positive significant influence on dividend pay-out thus rejecting H5. Positive relationship explains that as more profitable investment opportunities are available firm will earn more profit by investing in these projects, which will cause of high dividend payments. Kim and Jang (2010) said that firms having more investment opportunities pays high dividend in order to invite new investors. He also stated that firm pay high dividend also for enhancing goodwill of business. Same phenomenon is explained by signalling theory. Positive relationship between investment opportunities and dividend policy is proved by Yousaf and Ismail (2016) etc. Insignificant positive impact of leverage on the dividend payout is found in regression result. It means that debt financing have no impact on dividend payments. Study conducted on Pakistan's banking sector by Zameer et al. (2013), also concluded that leverage has no relationship with dividend payout of Pakistani banking sector. Last year dividend payment is proved most important determinant of dividend policy because it has significant positive relationship at 99% confidence level thus accepting H7. It can be due to the reason that Pakistani banks pay more attention to previous dividend payment because they want to maintain stability in dividend payment. Lintner (1956) provided that managers try to keep dividend stable and increase only when they sure to maintain it and managers also avoids from dividend cuts. Because any change in dividend is treated as signal for future performance of firm. Result of last year dividend is supported by Maladjian and Khoury (2014). The macroeconomic GDPGR shows positive but insignificant relationship with dividend payout. This means that GDP growth of a Pakistan does not effect on dividend payment decision of banks.

### **Determinants of Dividend Pay-out Ratio in Pre and Post Financial Crisis**

During the time period of this study, world witnessed International Financial Crisis of 2008. The Financial Crisis of 2008 has exposed the weaknesses of the financial system of develop countries like USA and UK. Pakistan being a developing country has also been affected by this. To compare the factors affecting dividend pay-out ratio of banks before and after crisis, in this section sample is divided into pre-crisis (2005–2007) and post-crisis period (2010–2015). According to the results reported in table 7, there is no significant difference in the factors affecting the dividend policy of the banks before and after the financial crisis of 2008 thus rejecting H9. One possible reason for this insignificant effect is the absenteeism of amalgamation of the domestic financial sector with the international financial sector. More over this could be due to low share of Pakistani banks in international financial markets.

According to a senior Pakistani banker “We have been able to escape the affect not because of some superior more efficient safeguards that we had but because we are too weak to figure in global financial matrix”

Table 7: Determinants of Dividend Pay-out Ratio in Pre and Post Financial Crisis

	Pre-Crisis (2005-2007)		Post Crisis (2010-2015)	
	Coeff.	Std. Err.	Coeff.	Std. Err.
ROA	0.935	0.790	1.400	1.997
TDTA	0.073	0.222	0.273	0.357
GRW	-0.029	0.034	-0.115	0.084
LDR	0.271	0.266	-0.055	0.238
IO	-0.259	0.709	0.633	0.428
LEV	-0.005	0.069	-0.366	0.301
LYD	0.041***	0.015	0.035***	0.009
GDPGR	-0.074	1.147	6.661	4.242
No. of Obs.	53		113	
Wald Chi (8)	42.11***		159.49***	
R-Square	0.5365		.5285	

\*, \*\*, \*\*\* Significant at the 1%, 5%, and 10% levels

#### Determinants of Dividend Pay-out Ratio in Different Basel Accords

This study checks the relevance of capital regulation on the banks' dividend pay-out policy. To quantify the impact of different regulations on the dividend pay-out ratio, the sample of this study is divided in two subsamples according to regulatory capital adequacy ratio of Basel accord. Table 8 presents the results of determinants of bank credit risk of Pakistani commercial banks for the sub samples Basel II and Basel III. As can be seen from the table 12, there is no significant difference of the impact of different variables on the dividend pay-out ratio in different capital requirement regimes thus rejecting H10. One reason of this insignificant effect can be though regulatory capital requirement of Basel II and III are different, however banks usually maintain this ratio well above required capital ratios. Due to this there might be no significant difference in the factors affecting the DPR.

Table 8: Determinants of Dividend Pay-out Ratio in Different Basel Accords

	Basel II TCTR=8% (2005-2013)		Basel III TCTR=10.5% (2014-2015)	
	Coeff.	Std. Err.	Coeff.	Std. Err.
ROA	0.789	0.535	5.176	6.850
TDTA	-0.268***	0.099	-0.021	0.642
GRW	-0.085***	0.032	-0.556	0.355
LDR	-0.165	0.135	-0.998	0.732
IO	0.434**	0.185	-0.327	0.982
LEV	0.071	0.075	-1.071	1.268
LYD	0.050***	0.013	0.021**	0.008
GDPGR	0.503	0.415	-80.932**	31.484
No. of Obs.	175		35	
Wald Chi (8)	67.20***		127.64	
R-Square	.5601		.5861	

## Conclusion

The purpose of the study was to find determinants of dividend policy of banking sector of Pakistan. Results proved positive impact of profitability thus supporting the life cycle theory and signaling theory. Negative significant impact of growth shows that young firms have more growth opportunities and retain funds for financing this growth instead of paying dividends. This association supports the life cycle theory and Pecking order theory but contradicts with agency theory. Loan deposit ratio has negative correlation with dividend payout. It indicates that when banks grant more loans it reduces liquidity of banks which results in payment of low dividend. Investment Opportunities are found positive impact on dividend payout. This means that by investing in profitable projects, profits of banks increases which lead to rise in dividend payments. Last year dividend has significant positive association with dividend payout. It shows that for paying dividend in current period, Pakistani banks focus on previous dividend payments, so they maintain stability in dividend payouts. This supports to dividend smoothing hypothesis. Regression results shows that Total Deposits to Total Assets ratio, leverage and GDP growth rate have no significant relationship with dividend payout. The results of this study found no difference in factors affecting dividend paid by the banks pre and post financial crisis period. Same can said about Basel II and III capital regulations.

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