Impact of Financial Leverage on Dividend in case of Private Indian Banks

Dr. Manisha Goel ,
Associate Professor, Department of Management Studies, J. C. Bose University of Science and Technology, YMCA Faridabad, Haryana, India

Ruchi Mangla,
Research scholar, Department of Management Studies, J. C. Bose University of Science and Technology, YMCA Faridabad, Haryana, India

Abstract

With the privatization and entry of private banks in this sector, the banking scenario is changing. Banks are also under the pressure to pay dividend to their shareholders. In this scenario, it becomes very important to know if there is any difference in dividend paid by nationalised banks and private banks. In this study efforts have been made to find out the impact of financial leverage on dividend paid by private banks in India. This is a quantitative research in which the relationships have been developed in the form of statistical model. A co relational research design has been adopted to find out whether there exists any co-relation between dividend and financial leverage of private banks in India or not.

Keywords: Financial Leverage, Dividend, Earnings, Co-relation, Linear Regression, Non linear Regression

Introduction

Dividend policy is defined as the set of instructions a company follows to decide the share of the earnings of the company to be paid out to its shareholders as dividends . It is the policy of distributing the earnings of the company among the shareholders with respect to the ownership they possess in the company. There is an inverse relationship between the retained earnings and the dividend paid to shareholders. So the decision involves the choosing between distributing the profits earned to the shareholders and keeping them back with the company for further investment. Financial leverage can be used by a firm to alter the cash flows and the position of the firm in the market. A little leverage is required for funding the business as the debts are not taxed, so using apropriate amount of debts lowers the overall cost of the borrowing as the rate on return compensates for the funds borrowed. The fixed compensation linked with the earnings of the company leads to the financial leverage of the firm, through the usage of funds that the company has borrowed at a fixed cost to attain profits in the future .

Financial leverage is related to the extent to which business utilizes borrowed money for the business, indicating the existence of debt in the capital structure of the company. The estimation of financial leverage is usually expressed in terms of book values or market values. The present attitude of shareholders is depicted by market values in a more suitable way. The most accepted way to measure the financial leverage in firms and banks is debt to equity ratio. Financial leverage increases the risk quotient of the firm, due to which the firm pays out less dividends to its investors and retains a higher portion of the profits

to reinvest in the investment projects that would eventually decrease the debts of the company, so making the dividend payouts lesser in value. Banking sector in India has undergone major growth in multiple areas. Banks help various sectors of the economy to become more profitable and productive which in turn demands the need of a stronger and sustainable banking industry. The present study is aimed to study the impact of financial leverage on dividend paid by private banks in India.

Literature Review

Many studies have included leverage as one of the determinants of dividend. There are very few studies available which explore the impact of financial leverage on dividend of private banks in India.

Uwuigbe (2013) attempted to examine the effect of financial leverage and ownership structure on dividend payment by Nigerian firms. He used the judgemental sample of 50 companies from Nigerian Stock Exchange. Using regression analysis he observed a negative relationship of financial leverage and dividend payout while positive between ownership structure and dividend payout. More over the negative impact of financial leverage was quite significant in Nigerian firms.

Tamimi et al. (2014) in their research investigated the impact of age and financial leverage on dividend policies of manufacturing firms which have been listed on Tehran Stock Exchange over the period from 2005-2011. They used the systematic sample of 92 companies. For the manufacturing companies of Tehran they found a significant but negative relationship between financial leverage and dividend payment.

Ikechukwu et al. (2015) assessed the 9 Nigerian conglomerates for their impact of financial leverage on dividend policy. They used the panel data for the period 2010-2015. The study was based majorly on consumer goods firms. They concluded that leverage measured by short term debt, long term debt and total debt had a significant effect on DPS, dividend payout ratio and dividend yield , thus having an overall impact on dividend policy.

Most of these researches showed that there exist a relationship between financial leverage and dividend payment. As far as the impact is concerned few of the researchers found a positive impact of financial leverage on dividend(Mayer and Bacon,2004; Alam and Hosain,2012; Gul et al.,2012), some other found a negative impact (Kumar,2003; Al-Malkawi,2007; Kuwari,2009; Moradi et al.2010; Alam and Hosain,2012) while few of them found it to be insignificant (Ben Naceur,2006; Rafique,2012). In totality there was no consensus as to the impact of financial leverage.

Gupta (2012) examined the selected private and public sector banks in India and measured the effect of financial leverage on these selected banks. This study has been carried over the period from 2007 to 2011. For analysing the results, the balance sheets of the respective banks were observed and also the effects of leverage ratio were deduced from the same. It has been observed that the financial leverage in the commercial banks did not experience a rise in consecutive years following the year 2007 rather showed a decline in this area. Whereas, the government banks in the country showed a stable leverage ratio over the years and also experienced a movement towards an increased financial leverage ratio within the banks. On the other hand, public sector banks experienced a decline in the owner funds which were measured as a percentage of total sources of public and private sector banks, whereas on the other side, the commercial banks showcased a significant increase in the funds of the owners in the bank. The fixed asset turnover ratio has been also estimated for the public and private sector banks from 2007 to 2011 and it has been found that fixed assets turnover ratio increased in both the sectors of the banks but with the public sector experiencing a higher turn-over of the fixed assets compared to that experienced by the commercial banks in the country.

Another research (Sri Hari et al., 2012) concluded that nationalised sector banks paid more dividends than private sector banks.

Research Design

The present study is quantitative in nature to analyze the properties of the past records of 15 years related to financial leverage and dividend of private banks in India and to make predictions for the future by developing mathematical models. The values for the years where banks have paid no dividend have been ignored. Inferences have been drawn from the values collected for 15 scheduled private Indian banks which have been listed on Bombay stock Exchange as on 2012. The focus of the study has been to explore the effect of financial leverage and earnings on dividend of private banks. Correlation and regression models have been developed for the leverage and dividend of private commercial banks in India. Analysis has been performed with the help of the software i. e. Microsoft Excel 2007 and SPSS 21.0.

Data Analysis and Interpretation:

The regression has been used as a tool to find out the impact of financial leverage on DPS of scheduled private banks in India. Taking DPS as a dependent variable and financial leverage as independent variable, the regression has been

run been on data.

Impact of Financial Leverage on Equity Dividend of Private Indian Banks

To find out the impact of financial leverage on DPS of banks in India regression has been used as a tool.

Linear Regression of Dps and Fl For Private Indian Banks

The linear regression was run the data related to private Indian banks to find out the impact.

Table 1 Regression of DPS and FL of Private Banks

		DPS	Financial Leverage
Pearson Correlation	DPS	1.000	-.164
	Financial Leverage	-.164	1.000
Sig. (1-tailed)	DPS	.	.031
	Financial Leverage	.031	.

Table 2 Model Summary of Regression of DPS and FL of Private Banks

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.164[b]	.027	.019	9.06857	.499

Table 3 Coefficients of DPS and FL of Private Banks

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	13.573	2.539		5.345	.000
Financial Leverage	-.404	.215	-.164	-1.876	.063

From the above tables it has been observed that the relationship between DPS and Financial Leverage of private Indian banks is significantly negative. Financial Leverage has a negative impact on DPS i.e. with the increase in financial leverage, DPS decreases in case of private Indian banks. The regression coefficient is -0.404 with a constant of 13.573.

Regression Model

With the help of coefficients the regression model can be written as

DPS = 13.573 - 0.404(Financial Leverage)

As the value of R2 is 0.027, it means that only 3% of Variations in DPS are explained by financial leverage for private Indian banks which is very low. Since the p value is less than 0.05 the null hypothesis that there is no significant impact of financial leverage on equity dividend of private Indian banks, has been rejected and it is found that there is significant impact of financial leverage on equity dividend of private Indian banks.

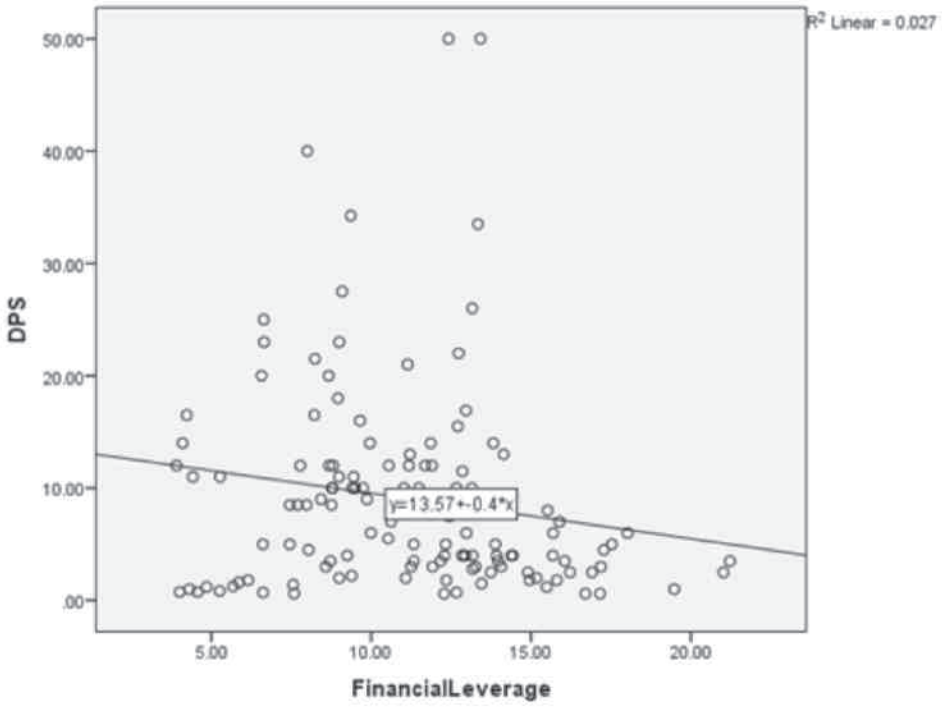
Validity of Regression Results for dps and Fl of Private Indian Banks

Before we reach any conclusion regarding this model it is necessary to check the validity of regression results. To check validity of regression results few basic assumptions of classic linear regression model are checked with -. tests of linearity, normality, stationarity, auto collinearity and homoscedasticity.

Assumption of Linearity

This has been checked with the help of Scatter diagram. The scatter diagram of the above said data is represented in figure 1.

Figure 1 Scatter Plot of DPS and FL for Private banks



As there are number of outliers present, it has been observed that the relationship is not linear between Financial Leverage and DPS of private Indian banks.

Assumption of Normality-

Shapiro-Wilk test along with Q-Q plot has been used to test the normality of data.

i. Shapiro-Wilk Test- the results of the test are as below:-

Table 4 Test of Normality of DPS and FL of Private Banks

	Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
DPS	.178	129	.000	.779	129	.000
Financial Leverage	.065	129	.200*	.986	129	.202

As we are able to see that level of Significance for Shapiro-Wilk test for DPS is below 0.05, so the data don't hold the assumption of normality and regression results of the data which is not normal, are not valid.

i. Q-Q Plot –On the observation of the data of FL on Q-Q plots, it is found that it is quite along the expected line but this is not the case of DPS.

Figure 2 Q-Q plot of DPS of Private Banks

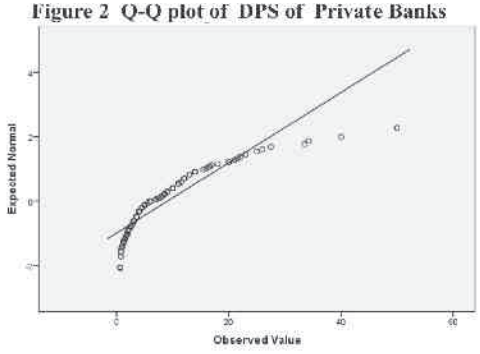
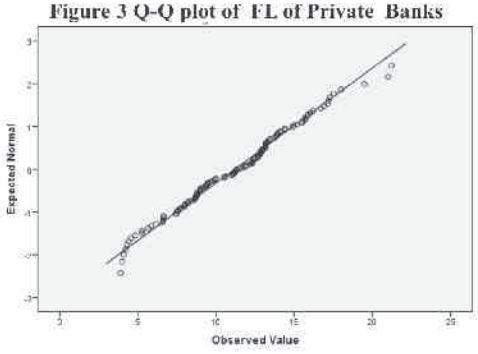


Figure 3 Q-Q plot of FL of Private Banks



Assumption of Stationarity and auto correlation

Stationarity has been checked using auto correlation test in SPSS and Durbin-Watson statistics.

i. Auto-correlation test Auto correlation test results show that data is not stationary

Figure 4 ACF Chart of FL of private

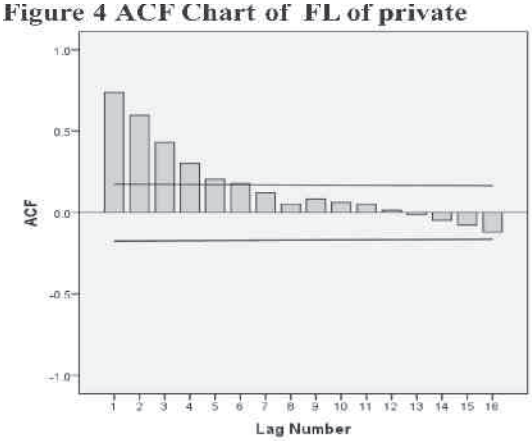
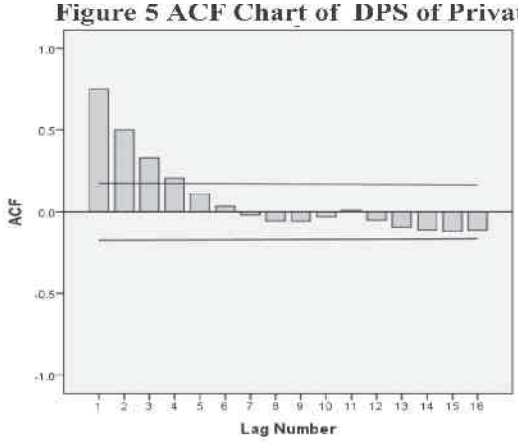


Figure 5 ACF Chart of DPS of Private



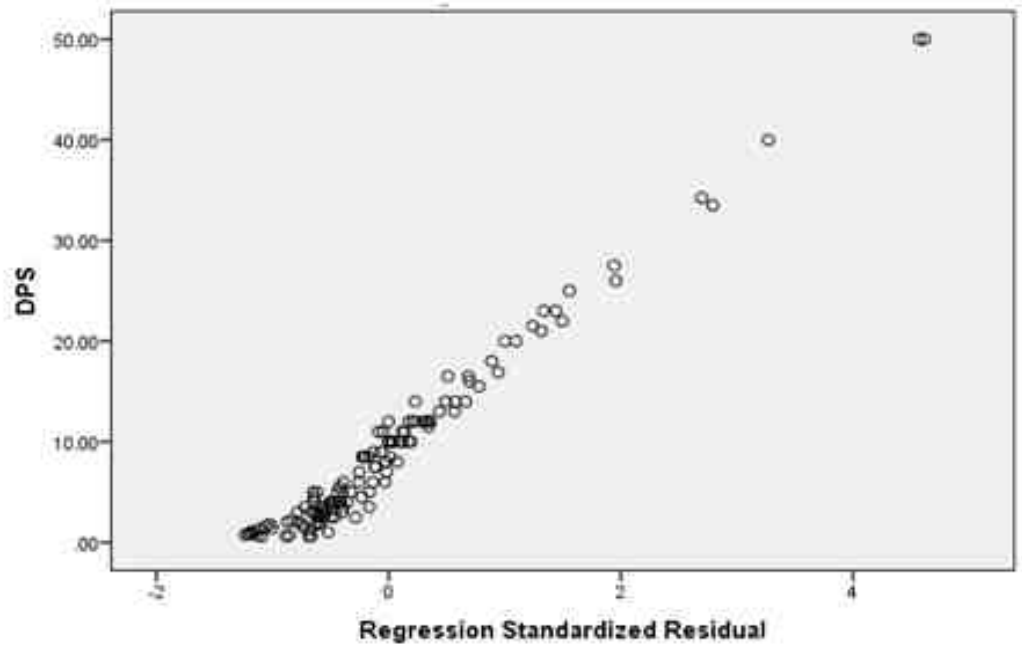
Durbin –Watson Statistics

As per the model summary, the Durbin-Watson value is 0.499 which very far off from the expected value of 2, for that to fulfil the assumption. So the data is having auto collinearity.

ssumption of Homoscedasticity

To check this assumption the scatter plot of residuals has been observed.

Figure 6 Scatter Plot of Regression Standardized Residuals of FL and DPS of Private Banks

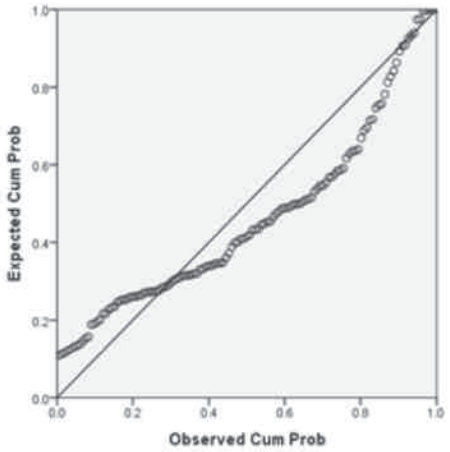


The scatter plot of residuals is not equally distributed and depicts a cluster, which suggests the presence of hetroscedasticity

Assumption of Correct Regression

This assumption is checked with the help of P-P plot of observed and expected residuals. As per the observed P-P plot the residuals are near to but not exactly on the expected line. So the egression is not a good fit.

Figure 7 Normal P-P Plot of Regression Standardized Residuals of FL and DPS of Private Indian banks



It has been analysed that the majority of assumption of linear regression model are not satisfied in the case of private Indian banks also, so some kind of transformation is needed to make the data normal and fit the regression line. This transformation has been done by taking log values.

Linear Regression with Log Of Dps And Fl For Private Indian Banks

The transformation has been done with the help of taking log of all the values. After transformation the model has been developed in the form of:-

Log DPS = a + b (Log Financial Leverage)

The regression has been run on the data related to private Indian banks and the details are as follows:-

Table 5 Linear Regression with Log of DPS and FL of Private Banks in India

Correlations			
		Log DPS	Log Financial Leverage
Pearson Correlation	Log DPS	1.000	-.065
	Log Financial Leverage	-.065	1.000
Sig. (1-tailed)	Log DPS	.	.233
	Log Financial Leverage	.233	.

Table 6 Model Summary of Linear Regression with Log of DPS and FL of Private Banks

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.065	.004	-.004	.45480	.348

Table 7 Coefficients of Linear Regression with Log of DPS and FL of Private Banks

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.935	.256		3.648	.000
Log Financial Leverage	-.181	.248	-.065	-.731	.466

From the above tables it has been concluded that there is a negative relationship between Log DPS and Log Financial Leverage of private Indian banks which is not significant as the p value is more than 0.05. Financial Leverage has a negative impact on DPS i.e. with the increase in leverage DPS decreases in case of private Indian banks in India. The regression coefficient is -0.181 with a constant of 0.935.

Regression Model

The equation can be written as a model fit equation between two variables as-

$$\text{Log DPS} = 0.935 - 0.181(\text{Log Financial Leverage})$$

As the value of R2 is 0.004, it means that variations in DPS are not explained by Financial Leverage for the private Indian banks. But before we reach any conclusion regarding this model it is necessary to check the validity of regression results.

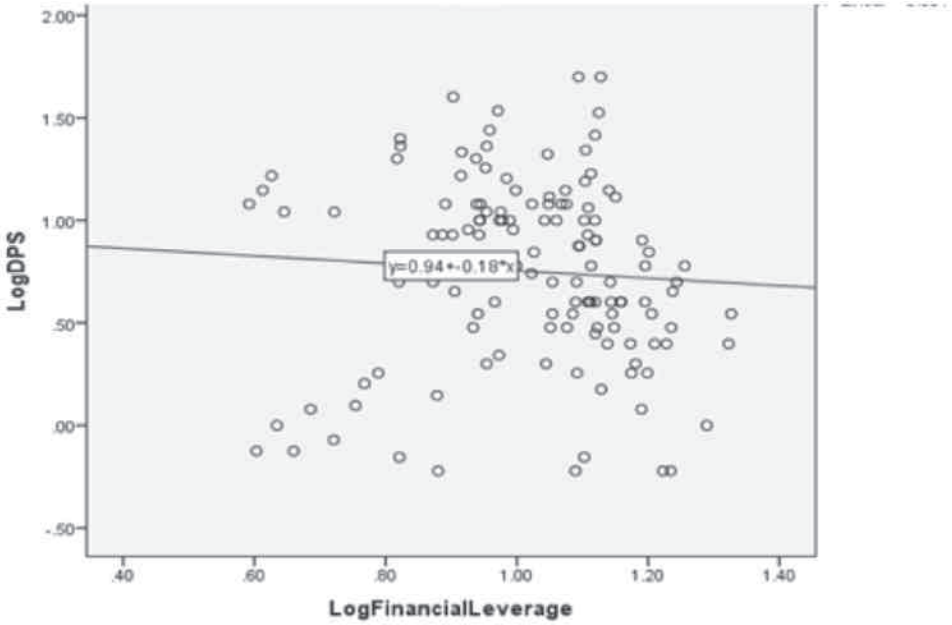
Validity of Regression Results with Log Dps and Log Fl For Private Indian Banks

To check validity of regression results few basic assumptions of classic linear regression model are checked with -. tests of linearity, normality, stationarity, auto collinearity and homoscedasticity.

Assumption of Linearity

This has been checked with the help of Scatter diagram. The scatter diagram of the above said data is represented in figure 8.

Figure 8 Scatter Plot of Log DPS and Log FL for Private Banks



As there are number of outliers present, it has been observed that the relationship is not linear between Log Financial Leverage and Log DPS of private Indian banks.

Assumption of Normality-

Shapiro-Wilk test along with Q-Q plot has been used to test the normality of data.

i. Shapiro-Wilk Test- the results of the test are as below:-

Table 8 Test of Normality of Log DPS and Log FL of PrivateBanks

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
Log DPS	.089	129	.014	.978	129	.031
Log Financial Leverage	.112	129	.000	.948	129	.000

As we are able to see that level of Significance for Shapiro-Wilk test is below 0.05 for Log financial leverage and Log DPS, so the data don't hold the assumption of normality and regression results of the data which is not normal, are not valid.

Q-Q Plot –.

On the observation of the data on Q-Q plots, it is found that it is not normal.

Figure 9 Q-Q plot of Log DPS of Private Banks

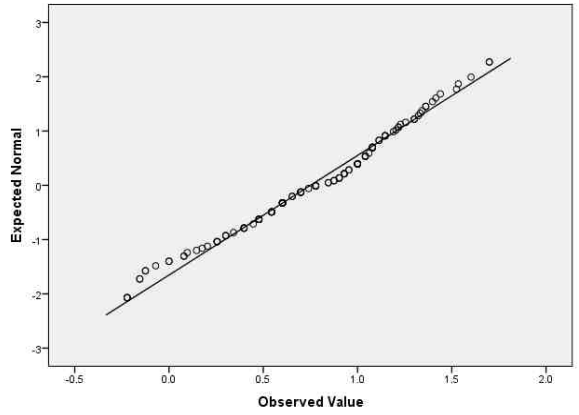
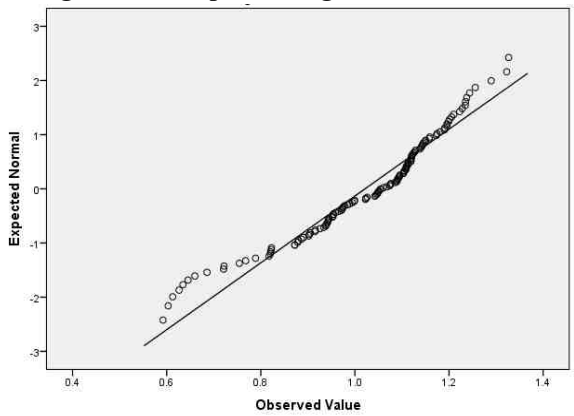


Figure 10 Q-Q plot of Log FL of Private Banks



Assumption of Stationarity and auto correlation

Stationarity has been checked using auto correlation test in SPSS and Durbin-Watson statistics.

i. Auto-correlation test Auto correlation test results show that data is not stationary

Figure 11 ACF Chart of Log FL of Private

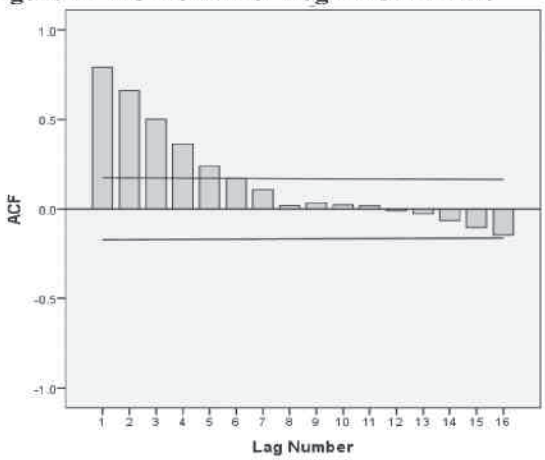
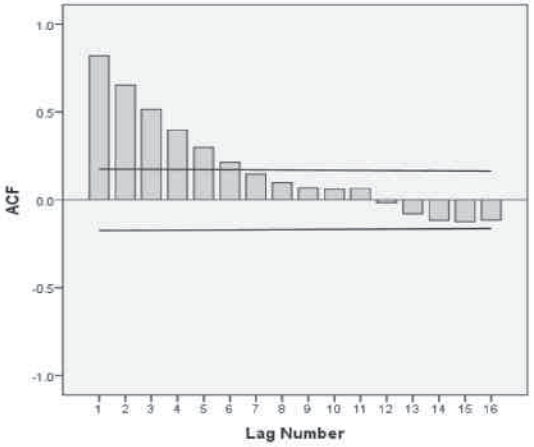


Figure 12 ACF Chart of Log DPS of Private



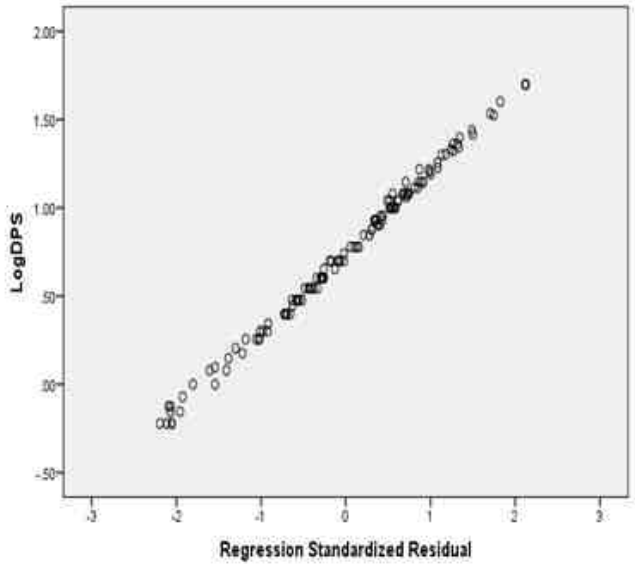
Durbin –Watson Statistics

As per the model summary, the Durbin-Watson value is 0.348 which very far off from the expected value of 2, for that to fulfil the assumption. So the data is having auto-colinearity.

Assumption of Homoscedasticity

To check this assumption the scatter plot of residuals has been observed.

Figure 13 Scatter Plot of Regression Standardized Residuals of Log FL and Log DPS of Private Banks

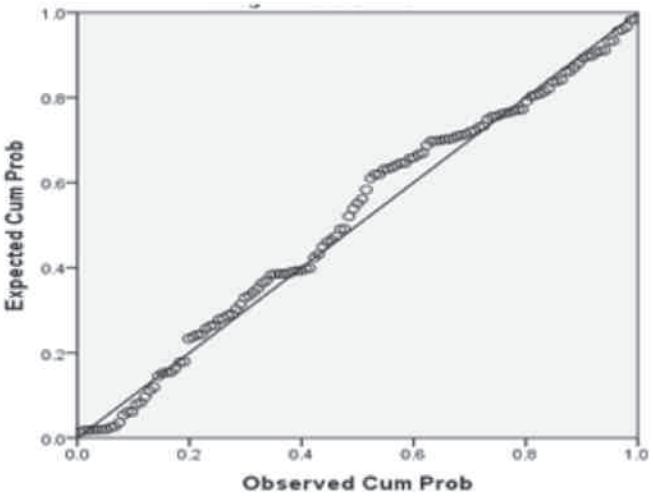


The scatter plot of residuals equally distributed, which suggest the presence of homoscadedticity.

Assumption of Correct Regression

This assumption is checked with the help of P-P plot of observed and expected residuals.

Figure 14 Normal P-P Plot of Regression Standardized Residuals of Log FL and Log DPS of Private banks



As per the observed P-P plot the residuals are very much near to the expected line but not exactly on it.. So this assumption is not fulfilled.

It has been analysed that in this case also all of assumption of linear regression model are not satisfied. Though the results have improved as compared to simple regression but regression line cannot be taken as a good fit. Now the efforts have been made to find the non linear regression between the variables.

Nonlinear Regression of Dps And Fl Of Private Indian Banks

As the linear regression model even after transformation with log is not a good fit to explain the impact of financial leverage on dividend of private Indian banks, Non-linear regression model has been applied. The correlation between dividend paid and financial leverage is negative, therefore decay model has been chosen. The model is in the form as below:-

Table 9 Parameter Estimate for Non-Linear Regression of DPS and FL for Private Banks

Parameter	Estimate	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
A	13.573	2.549	8.528	18.618
B	-.506	9070461.159	-17950176.487	17950175.474
C	-.799	14258716.429	-28217581.434	28217579.837

From the above tables it has been concluded that there is a negative relationship between DPS and Financial Leverage of private Indian banks i.e. with the increase in leverage DPS decreases in case of private Indian banks.

NONLINEAR REGRESSION MODEL

The equation can be written as a model fit equation between two variables as-

DPS= 13.573 - (-0.506*(-0.799*Financial Leverage)) i.e.

DPS= 13.573 - (0.506*(0.799*Financial Leverage))

As the value of R2 is 0.027, it means that 3 % of variations in DPS are explained by Financial Leverage for the private Indian banks.

Conclusion:

The results of the study show that there exist a negative relationship between Financial Leverage and Dividend of nationalized banks in India. Linear regression models after transformation with Log have also been developed depicting the significant impact of FL on DPS for banks. Though the models cannot be used to predict DPS on the basis of FL yet the results of the study can be used by the financial experts to formulate strategies related to capital structure.

References

Aasia Asif, Waqas Rasool, and Yasir Kamal, "Impact of financial leverage on dividend policy: Empirical evidence from Karachi Stock Exchange-listed companies." African Journal of Business Management, vol. 5, no.4, 2011, pp. 1312.

C. Bryan Cloyd, John Robinson, and Connie Weaver, "Does Ownership Structure Affect Corporations' Responses to Lower Dividend Tax Rates? An Analysis of Public and Private Banks." 2005.

Dinesh Kumar Sharma and Ritu Wadhwa, "Determinants of Dividend Policy Decision: An Analysis of Banks in India." Proceedings of International Conference on Strategies in Volatile and Uncertain Environment for Emerging Markets, 2017.

Duha Al-Kuwari, "Determinants of the Dividend Policy of Companies Listed on Emerging Stock Exchanges: The Case of the Gulf Cooperation Council (GCC) Countries." 2009.

Eugene F Fama and Harvey Babiak, "Dividend policy: An empirical analysis." Journal of the American statistical Association, Vol. 63, no.324, 1968, pp.1132-1161.

H. Kent Baker and Gary E. Powell, "Determinants of corporate dividend policy: a survey of NYSE firms." Financial Practice and education, vol.10, 2000, pp. 29-40.

H. Kent Baker, E. Theodore Veit, and Gary E. Powell. "Factors influencing dividend policy decisions of Nasdaq firms." Financial Review, vol. 36, no.3, 2001, pp.19-38.

Hashim Zameer, Shahid Rasool, Sajid Iqbal, and Umair Arshad."Determinants of dividend policy: A case of banking sector in Pakistan." Middle-East Journal of Scientific Research, Vol.18, no. 3, 2013, pp. 410-424.

Husam-Aldin Nizar Al-Malkawi, "Factors influencing corporate dividend decision: Evidence from Jordanian panel data." International Journal of Business, vol.13, no.2, 2008, pp.177.

Jorge Farinha, "Dividend policy, corporate governance and the managerial entrenchment hypothesis: an empirical analysis." Journal of Business Finance & Accounting, Vol.30, no.9 10, 2003, pp.1173-1209.

Lee Wei Sim, "A study on leading determinants of dividend policy in Malaysia listed companies for food industry under consumer product sector." Conference Master Resources, 2011.

M. Sudhahar and T. Saroja, "Determinants of dividend policy in Indian banks: An empirical analysis."

IUP Journal of Bank Management, Vol.9, no.3, 2010, pp. 63.

M. Z Alam and Mohammad Emdad Hossain, "Dividend policy: a comparative study of UK and Bangladesh based companies." IOSR Journal of Business and Management, vol.1,no.1, 2012, pp.57-67.

Manoj Anand, "Factors influencing dividend policy decisions of corporate India." 2004.

Mohammad Tamimi and Nasrollah Takhtaei, "Relationship between Firm Age and Financial Leverage with Dividend Policy." Asian Journal of Finance & Accounting, Vol. 6, no.2, 2014, pp. 53.

Mokhtar Emamalizadeh, Mousa Ahmadi, and Jaffar Pouyamanesh, "Impact of financial leverage on dividend policy at Tehran Stock Exchange: A case study of food industry." African Journal of Business Management, Vol.7, no.34, 2013, pp. 3287.

Ross N Dickens, K. Michael Casey, and Joseph A. Newman, "Bank dividend policy: explanatory factors." Quarterly journal of Business and Economics,2002, pp. 3-12.

S. Jasvir Sura, Karam Pal, and B. S. Bodla, "Factors Influencing Dividend Policy Decisions in Banking Sector: An Indian Evidence." 2012.

Souvik Banerjee and K. T. Rangamani, "A Comparative Analysis of Dividend Policy of Public and Private Sector Banks in India." SAMVAD, vol. 11, 2016, pp. 59-64.

Turki SF Alzomaia, and Ahmed Al-Khadhiri, "Determination of dividend policy: The evidence from Saudi Arabia." International Journal of Business and Social Science, vol. 4, no.1, 2013.