Effect of Firms Capital Structure on Stock Returns - A Study of Selected Companies Listed in National Stock Exchange

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ABSTRACT

The aim of the study is to examine the effect of Capital structure on stock returns of select companies listed in National Stock Exchange during the period between 2014 and 2018. The present study helps managers and policy makers to make the right decision in determining the possible debt ratio that maximizes stock return. The main source of this study is from secondary data from firm's financial reports. Correlation and regression analysis are used for present analysis. The results of study revealed that there is a negative effect of capital structure on stock returns. The results also indicated that profitability and growth are positively correlated with stock return and size is negatively correlated with stock return.

Keywords: Capital structure, stock return, NSE, policy makers and firms

1. Introduction

Capital structure is the important concern for firms. It is a combination of equity and debt which a financial manager uses to finance the activities in firm. Managers build the capital structure in such a way that trade off takes place between risk and return. Financial managers believe that debt is cheaper source of finance which has the advantage of the tax benefit while in the case of equity, it is most expensive form of finance. It becomes most complex to take finance decision for choosing the combination of debt and equity because it affects the overall value of the firm. However there is no predetermined leverage to be used in capital structure, it depends on various factors like firm size, sector, country and other factors. (Khan, Naz, Khan,

Khan & Ahmad 2013). Many of the studies investigated on capital structure how they determine stock returns (Bhandari, 1988). While the other studies disagree on it (Welch 2003). Some studies revealed that stock returns and capital structure at the same time affect each other (Yang, Lee, Gu & Lee 2010). Few studies revealed that decrease in leverage due to stock returns (Hall (1967), Kortweg (2004), Dimitrov and Jain (2005). This might be due to the fact that there may be differences in the, methodologies adopted, samples used in different countries.

Masulis (1983) in his study identified that change in leverage is positively related to change in stock returns. The sample for his study consists of group of all companies using pure capital structure changes. The study examined that change in short term value takes place due to the result of change changes in leverage brought about by swap over offers and recapitalizations. Strong and Xu (1997) and Fama and French (1992) used book-to market equity and size to identify the cross sectional deviation in stock returns. The results of the study revealed that market and book value are positively and negatively related to stock returns respectively.

Adami *et al* (2010) studied the association between stock return and leverage by using 2673 companies listed in the London Stock Exchange over the period (1980– 2008). The study reveals a negative relationship between financial leverage and stock return. When they calculate approximately returns with CAPM, they came across those companies having higher tax rates earn higher returns.

Yang, Lee, Gu, and Lee (2010) measured two way causalities by using simultaneous equations. And found that capital structure and stock returns as endogenous variables .his work was an extension of Titman and Wessels (1988) in his studied the capital structure determinants by using single equation. The results concluded that leverage, profitability, liquidity. Expected growth and value are the factors which affect the stock returns. Saliha & Abdessatar (2011); Babalola (2013) found the uniform result. According to Shepard (1972) the firm size and profitability have significant negative association which was also proved by Simon (1962) Banchuenvijit (2012). This study aims to investigate the relationship between capital structure and stock return for the select firms listed in the National stock exchange over the period (2014–2018).

2. Objectives of the study

1. To study the capital structure of select companies of NSE.
2. To examine the stock returns of select companies of NSE.
3. To examine the impact of capital structure on stock return select companies

Hypothesis

H0: There is no significant impact of capital structure on stock return of select companies

3. Research Methodology

The data was collected from Annual Balance Sheet of the firms listed in National Stock Exchange from period 2014 to 2018. Top 20 listed companies based on Market capitalization are considered for study excluding Finance, Banking and Insurance Companies. Correlation and regression are used in analysis model. The yearly financial data of the companies were collected from the published annual reports and NSE website. Regression Model is used to test the theoretical relation between capital structure and stock returns. The analysis was done using the computer software spss

Regression model

$SR_{it}= \beta0+\beta1LEV_{it}\beta2SZ_{it}+\beta3PF_{it}+\beta4\ GW_{it}+\beta5\ LQ_{it}$

SRi_{it}= Stock returns at time t

LEV_{it}= Leverage at time t

SZ_{it}= Size of company at time t

PF_{it}= Profitability at time t

GW_{it}= Growth of company at time t

LQ_{it}= Liquidity ratio at time

Independent variables	Stock Return	(Stock Price$_t$-StockPrice$_{t-1}$) /Stock Price $_{t-1}$
Dependent Variables	Leverage	(Short Term Borrowing + Long Term Borrowing)/Total Assets
control variables	liquidity	Current Assets/Current Liabilities
	size	Log (Total Assets)
	growth	(Total Assets $_t$ – Total Assets$_{t-1}$)/ Total Assets$_{t-1}$
	profitability	Net Income /Average Total Assts.

4. Results and Discussions

Table: 4.1 Descriptive Statistics

Descriptive Statistics	stock return	capital structure	liquidity	size	growth	profitability
Mean	0.158	0.588	2.056	2.935	2.761	-13.758
Standard Deviation	0.775	1.507	1.979	0.914	2.780	120.526

Minimum	-0.897	-3.86	0	0.661	-0.080	-1046.48
Maximum	4.902	5.93	11.13	5.328	17.760	31.54
Sum	15.865	58.88	205.63	293.553	276.186	-1375.85
Count	100	100	100	100	100	100

Table 4.1 describes the select firms that the mean value for stock returns 0.158 with a standard deviation of 0.775. The highest stock return recorded in the market with in the period is 4.902 while the smallest is -0.897. Capital structure has a mean value 0.588 with a standard deviation of 1.507. The maximum Capital structure is 5.93 while the least is -3.86. Liquidity ratio has a mean value of 2.056 with a standard deviation of 1.979. The size of a firm has a mean value was 2.9235 with a standard deviation of 0.914 The Growth has a mean value of 2.761with a standard deviation being 2.780. The highest value is 17.760 while the lowest is -0.080. Profitability has mean value of -13.758 with a standard deviation of 120.526. The highest value is 31.54 while the lowest being 1046.48.

Table: 4.2 Correlations in the year 2014 for select firms

		stock return	capital structure	liquidity	size	growth	profitability
stock return	Pearson Correlation	1	-.071	-.201	.347	-.093	.201
	Sig. (2-tailed)		.767	.396	.134	.695	.395
capital structure	Pearson Correlation	-.071	1	-.328	.421	-.019	-.285
	Sig. (2-tailed)	.767		.158	.064	.936	.223
liquidity	Pearson Correlation	-.201	-.328	1	-.415	.043	-.116
	Sig. (2-tailed)	.396	.158		.069	.858	.627
size	Pearson Correlation	.347	.421	-.415	1	-.007	-.058
	Sig. (2-tailed)	.134	.064	.069		.975	.807
growth	Pearson Correlation	-.093	-.019	.043	-.007	1	.613**
	Sig. (2-tailed)	.695	.936	.858	.975		.004
profitability	Pearson Correlation	.201	-.285	-.116	-.058	.613**	1
	Sig. (2-tailed)	.395	.223	.627	.807	.004	

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

From the above table: 4.2 It is evident capital structure and liquidity show a negative correlation with stock return while size ,growth and profitability shows a positive correlation with stock return. Liquidity and growth has negative correlation with capital structure and others variables shows a positive correlation with capital structure. Growth and profitability shows negative correlation with size. Growth shows a positive correlation with profitability.

Table : 4.3 Regression Results for year 2014

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.
1	.518[a]	.268	.006	1.173	.440	2.480

a. Predictors: (Constant), profitability, size, liquidity, capital structure, growth

b. Dependent Variable: stock return

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.976	1.239		-.788	.444
	capital structure	-.143	.264	-.153	-.543	.596
	liquidity	-.009	.138	-.017	-.064	.950
	size	.574	.361	.424	1.589	.134
	growth	-.091	.085	-.326	-1.066	.304
	Profitability	.056	.048	.380	1.162	.265

In the present study the empirical findings on the relationship between stock returns and capital structure of the select firms in NSE. Measure of stock return was regressed against measure of capital structure along with control variables. Regression results are presented in Table 4.3 the model explains around 26.8 % of the variation in the endogenous variable. This means that, the remaining 73.2 % of variance with stock returns is contributed by other factors. F statistic for stock return is .440. Size and profitability found to have a strong favorable impact on capital structure as measured by Stock returns. Capital structure, liquidity and growth have a negative but insignificant impact on stock return. P value is 2.480, which is greater than (0.05) indicates weak evidence against the null hypothesis, so fail to reject the null hypothesis. There is no significant impact of capital structure on stock return of select companies during the period 2014.

Table: 4.4 Correlations in the year 2015 for select firms

		stock return	capital structure	liquidity	size	growth	profitability
stock return	Pearson Correlation	1	-.147	-.084	-.083	.016	.357
	Sig. (2-tailed)		.537	.724	.727	.948	.123
capital structure	Pearson Correlation	-.147	1	-.379	.420	-.020	-.324
	Sig. (2-tailed)	.537		.099	.065	.934	.164
liquidity	Pearson Correlation	-.084	-.379	1	-.526*	-.173	.088
	Sig. (2-tailed)	.724	.099		.017	.467	.714
size	Pearson Correlation	-.083	.420	-.526*	1	.040	.007
	Sig. (2-tailed)	.727	.065	.017		.868	.977
growth	Pearson Correlation	.016	-.020	-.173	.040	1	.771**
	Sig. (2-tailed)	.948	.934	.467	.868		.000
profitability	Pearson Correlation	.357	-.324	.088	.007	.771**	1
	Sig. (2-tailed)	.123	.164	.714	.977	.000	

From the above table:4.4 shows that capital structure , liquidity and size show a negative correlation with stock return while growth and profitability shows a positive correlation with

stock return. Size has a positive correlation with capital structure while Liquidity, growth and profitability has negative correlation with capital structure. Profitability has positive correlation and size and growth has negative correlation with liquidity. Growth and profitability shows positive correlation with size. Growth shows a positive correlation with profitability.

Table: 4.5 Regression Results for year 2015

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.
1	.694[a]	.482	.297	.41493	2.606	.072

a. Predictors: (Constant), profitability, size, capital structure, liquidity, growth

b. Dependent Variable: stock return

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.074	.498		2.158	.049
	capital structure	.083	.091	.227	.915	.376
	liquidity	-.108	.054	-.505	-2.020	.063
	size	-.229	.139	-.412	-1.643	.123
	growth	-.164	.057	-1.034	-2.897	.012
	profitability	.079	.023	1.275	3.398	.004

a. Dependent Variable: stock return

In the year 2015, the study presents the empirical relationship between stock returns and capital structure of the select firms in NSE. Measure of stock return was regressed against measure of capital structure along with control variables. Regression results are presented in Table 4.5 shows that model explains around 48.2 % of the variation in the endogenous variable. This means that, the remaining 51.8 % of variance with stock returns is contributed by other factors.

F statistic for stock return is 2.606 profitability found to have a strong favorable impact on capital structure as measured by Stock return while liquidity, size and growth has negative but insignificant impact on stock return. P value is .072 which is greater than (0.05) indicates weak evidence against the null hypothesis, so fail to reject the null hypothesis. There is no significant impact of capital structure on stock return of select companies during the period 2015.

Table: 4.6 Correlations in the year 2015 for select firms

		stock return	capital structure	liquidity	size	growth	profitability
stock return	Pearson Correlation	1	-.172	-.343	.084	-.031	.124
	Sig. (2-tailed)		.467	.139	.726	.897	.601
capital structure	Pearson Correlation	-.172	1	-.405	.343	-.038	-.333
	Sig. (2-tailed)	.467		.077	.139	.873	.151
liquidity	Pearson Correlation	-.343	-.405	1	-.229	.623**	.586**
	Sig. (2-tailed)	.139	.077		.331	.003	.007
Size	Pearson Correlation	.084	.343	-.229	1	.174	.192
	Sig. (2-tailed)	.726	.139	.331		.462	.417
Growth	Pearson Correlation	-.031	-.038	.623**	.174	1	.783**
	Sig. (2-tailed)	.897	.873	.003	.462		.000
profitability	Pearson Correlation	.124	-.333	.586**	.192	.783**	1
	Sig. (2-tailed)	.601	.151	.007	.417	.000	

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

From the above table : 4.6 states that capital structure , liquidity and growth show a negative correlation with stock return while size and profitability shows a positive correlation with stock return. Size has a positive correlation with capital structure while Liquidity, growth and profitability has negative correlation with capital structure. Growth and Profitability has positive correlation with liquidity and size has negative correlation with liquidity. Growth and profitability shows positive correlation with size. Growth shows a positive correlation with profitability.

Table: 4.7 Regression Results for year 2016

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.
1	.621[a]	.385	.166	.26433	1.755	.187

a. Predictors: (Constant), profitability, size, capital structure, liquidity, growth

b. Dependent Variable: stock return

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.489	.267		1.829	.089
	capital structure	-.080	.061	-.372	-1.309	.212
	liquidity	-.125	.047	-.864	-2.659	.019
	size	-.030	.082	-.094	-.368	.718
	growth	.033	.054	.254	.611	.551
	profitability	.011	.014	.325	.795	.440

a. Dependent Variable: stock return

In the year 2016 the study shows the empirical relationship between stock returns and capital structure of the select firms in NSE. Measure of stock return was regressed against measure of capital structure along with control variables. Regression results are presented in Table 4.7 shows that model explains around 38.5 % of the variation in the endogenous variable. This means that, the remaining 61.5 % of variance with stock returns is contributed by other factors. F statistic for stock return is 1.755. Growth and profitability found to have a strong favorable impact on capital structure as measured by Stock return while capital structure, liquidity and size have negative impact on stock return. P value is .187 which is greater than (0.05) indicates weak evidence against the null hypothesis, so fail to reject the null hypothesis. There is no significant impact of capital structure on stock return of select companies during the period 2016.

Table: 4.8 Correlations in the year 2017 for select firms

		stock return	capital structure	liquidity	size	growth	profitability
stock return	Pearson Correlation	1	-.017	.117	-.318	-.175	.010
	Sig. (2-tailed)		.943	.625	.171	.461	.965

capital structure	Pearson Correlation	-.017	1	-.140	.155	.057	.267
	Sig. (2-tailed)	.943		.556	.513	.811	.256
liquidity	Pearson Correlation	.117	-.140	1	-.144	.529*	.289
	Sig. (2-tailed)	.625	.556		.546	.016	.217
size	Pearson Correlation	-.318	.155	-.144	1	.426	.420
	Sig. (2-tailed)	.171	.513	.546		.061	.065
growth	Pearson Correlation	-.175	.057	.529*	.426	1	.420
	Sig. (2-tailed)	.461	.811	.016	.061		.065
profitability	Pearson Correlation	.010	.267	.289	.420	.420	1
	Sig. (2-tailed)	.965	.256	.217	.065	.065	

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

From the above table: 4.8. The results reveal that capital structure, size and growth show a negative correlation with stock return while Liquidity and profitability shows a positive correlation with stock return. Size, growth and Profitability have a positive correlation with capital structure while Liquidity has negative correlation with capital structure. Growth and Profitability has positive correlation with liquidity and size has negative correlation with liquidity. Growth and profitability shows positive correlation with size. Growth shows a positive correlation with profitability.

Table: 4.9 Regression Results for year 2017

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.
1	.379[a]	.143	-.163	.782	.469	.793

a. Predictors: (Constant), profitability, size, capital structure, liquidity, growth

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.
1	.379[a]	.143	-.163	.782	.469	.793

b. Dependent Variable: stock return

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.315	.818		1.609	.130
	capital structure	.004	.095	.011	.040	.968
	liquidity	.060	.169	.126	.355	.728
	size	-.221	.254	-.294	-.870	.399
	growth	-.071	.137	-.190	-.520	.611
	profitability	.001	.002	.175	.564	.581

a. Dependent Variable: stock return

In the year 2017 the study shows that Stock return was regressed against capital structure along with control variables. Regression results are presented in Table 4.9 shows that model explains around 14.3 % of the variation in the endogenous variable. This means that, the remaining 85.7 % of variance with stock returns is contributed by other factors. F statistic for stock return is .469 .capital structure liquidity and profitability found to have a strong favorable impact on capital structure as measured by Stock return while size and growth have negative impact on stock return. P value is .793 which is greater than (0.05) indicates weak evidence against the null hypothesis, so fail to reject the null hypothesis. There is no significant impact of capital structure on stock return of select companies during the period 2017.

Table: 4.10 Correlations in the year 2018 for select firms

		stock return	capital structure	liquidity	size	growth	profitability
stock return	Pearson Correlation	1	.362	-.106	.099	.259	.097
	Sig. (2-tailed)		.117	.657	.677	.271	.683

capital structure	Pearson Correlation	.362	1	-.110	.388	.160	.189
	Sig. (2-tailed)	.117		.644	.091	.500	.425
liquidity	Pearson Correlation	-.106	-.110	1	.089	.375	.264
	Sig. (2-tailed)	.657	.644		.708	.104	.260
size	Pearson Correlation	.099	.388	.089	1	.243	.533*
	Sig. (2-tailed)	.677	.091	.708		.302	.016
growth	Pearson Correlation	.259	.160	.375	.243	1	.373
	Sig. (2-tailed)	.271	.500	.104	.302		.105
profitability	Pearson Correlation	.097	.189	.264	.533*	.373	1
	Sig. (2-tailed)	.683	.425	.260	.016	.105	

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

From the above table: 4.10. The results reveal liquidity show a negative correlation with stock return while capital structure, size, growth and profitability shows a positive correlation with stock return. Size, growth and Profitability have a positive correlation with capital structure while Liquidity has negative correlation with capital structure. Size, Growth and Profitability has positive correlation with liquidity. Growth and profitability shows positive correlation with size. Growth shows a positive correlation with profitability.

Table: 4.11 Regression Results for year 2018

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.
1	.452[a]	.205	-.080	.475	.720	.619

a. Predictors: (Constant), profitability, size, capital structure, liquidity, growth

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.081	.454		.179	.860
	capital structure	.097	.078	.329	1.245	.234
	liquidity	-.048	.072	-.175	-.658	.522
	size	-.043	.133	-.096	-.320	.754
	growth	.094	.091	.285	1.041	.316
	profitability	5.125	.001	.026	.088	.931

a. Dependent Variable: stock return

In the year 2018 the present study depicts that Stock return was regressed against capital structure along with control variables. Regression results are presented in Table 4.11 shows that model explains around 20.5 % of the variation in the endogenous variable. This means that, the remaining 79.5 % of variance with stock returns is contributed by other factors. F statistic for stock return is .720 .capital structure, growth and profitability found to have a strong favorable impact on capital structure as measured by Stock return while liquidity and size have negative impact on stock return. P value is .619 which is greater than (0.05) indicates weak evidence against the null hypothesis, so fail to reject the null hypothesis. There is no significant impact of capital structure on stock return of select companies during the period 2018.

5. Conclusion

This study examines the relationship between capital structure and stock returns of select firms in the NSE during the periods 2014 to 2018. The results of this study vary for the different periods. In the year 2014, adverse relationship between capital and stock return of the firms has been observed. Furthermore, liquidity and growth has shown a negative relationship with the stock return. Thus, an increase in the cost of these variables would decline the return of a firm. Conversely, size and profitability have positive impact on stock. The reason for that is when profit increase and the company has more retained earnings automatically there will be increase in stock returns and if the company net profit will increase it will increase return on assets which will also increase stock returns.

In the year 2015, adverse relationship between capital and stock return of the firms has been observed. Furthermore, liquidity, size and growth have shown a negative relationship with the stock return. Thus an increase in the cost of these variables would decline the return of a firm. Conversely capital structure and profitability has positive impact on stock return.

In the year 2016 also, we can find that negative relationship between capital and stock return of the firms has been observed. Furthermore, capital structure liquidity and size has shown a negative relationship with the stock return. Thus, an increase in the cost of these variables would decline the return of a firm. Conversely growth and profitability have positive impact on stock return.

In the year 2017 also, we can find that negative relationship between capital and stock return of the firms has been observed. Furthermore, size and growth has shown a negative relationship with the stock return. Thus, an increase in the cost of these variables would decline the return of a firm. On the other hand, capital structure, liquidity and profitability have positive impact on stock return.

In the year 2018 also, we found that negative relationship between capital and stock return of the firms has been observed. Furthermore, liquidity and size has shown a negative relationship with the stock return. Thus, an increase in the cost of these variables would decline the return of a firm. Conversely capital structure, growth and profitability have positive impact on stock return. In all the years it was observed that profitability has an positive impact on stock returns this is due to net income increase and stock return also increases further it was observed in all the years that liquidity has negative relationship with stock returns. This is because liquidity stock has less risk so the returns on liquidity stock are low (Yang et al. 2010). Our results are in line with Pastor and Stambaugh (2003) as well as Haugen and Baker (1996) shows that stock with lower liquidity earn higher returns. However, in all the years it was evident that there was no significant impact of capital structure on stock return of select companies.

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