Dynamics Of Financial Structure And Value Of Firm: Evidence From Nifty

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Abstract

This study examines the effect of capital structure on value of firm listed in NIFTY during 2009 to 2018. Variables including size. Profitability, Tangibility. Growth and age taken for examining as determinants of capital structure. In addition, we include the investigation of capital structure and performance of firm and ultimately result on firm's value. Moreover, macroeconomic indicators are also used to see the impact on firm performance and value of firm. Using panel data regression, the result shows that profitability, liquidity , size growth opportunity and age has strong relation with financial decision in Indian companies and also seen that capital structure decision has strong impact on firms performance similarly firm performance is related with firm value.

The study also reveals that macroeconomic variable among GDP, inflation and CPI, CPI has no relation with performance as well as value of firm. GDP has relation with firms' value and inflation has strong relation with the firm performance.

Keywords: Indian companies, capital structure decision, determinants value of firm, macro economic variables.

1- INTRODUCTION

Capital structure decision is very important for any organization. As it is crucial part of financial management and carry ample of theoretical base which gives it perplexity on adoption of financial policy. The firm can issue many different securities, but it is attempt to issue best combination of components. The choice of debt equity for the company involves tradeoff between risk and return. Many specialists suggests to have debt than equity but excessive use of debt may endanger the survival of firm while optimum use may give benefit to existing equity holders. The firm choice of debt equity depends on many factors. The empirical work mainly lagged behind theoretically specially in case of developing countries.

On the other hand apart from financial factor some nonfinancial factors are also to be considered as manages and executives behavior and role somehow to be considered. In brief, debt is not an unmixed blessing and has dilemma for the finance manager. The finance manager expected to design best and optimum financial structure which gives value to firm.

2- LITERATURE REVIEW

The fund decisions are very important for any organization. It's crucial but has strong impact on the firm performance and value of firm. The determination of sources of fund either from debt or equity. The component of capital mix is long term source of fund. Company uses the variety of combination. Debt is an alternative of capital structure where use of debt at a given limit will be profitable than the company own capital. It will be lower the cost of capital and increase the value of firm. One of the theories of capital structure is funding in sequence known as pecking order theory. This theory was given by Gordon Donaldson in 1961.the funding preferences begins from retained earnings to debt issue and to issue of equity. This sequence is based on cost of capital structure and believes that equity is most costly source of

fund. Tradeoff theory (Mayer, 1977, 1984) explained just opposite to pecking order that use of debt can increase the value of firm to certain optimum level and often it will increase the bankruptcy and financial distress which will lead to decrease in value of firm. This theory explains about the relationship between bankruptcy and financial distress which will lead to decrease in value of assets. This 9theory is based on advantages and disadvantages of debt to firm. The companies continue to pay greatest interest and possible reduction of cost but at certain level it creates the financial distress aiming the shareholder which devalues the firm. As many researcher plug the idea of identification of characteristics plays role in deciding capital structure. (Bradley et al., 1984; Taggart Robert, 1985; Titman & Wessels, 1988). Kremp & Stöss, 2001, Chen (2004) and Gaud, Jani, Hoesli, and Bender (2005). Correa, Fernando, & Nakamura, 2005;Cristian Espinosa, Carlos Maquieira, Joao Paulo Vieito, & MarceloGonzález, 2012; Huang & Song, 2006; Köksal & Orman, 2014;Memon et al., 2015; Pandey, 2004; Paredes Gómez et al., 2016;Qureshi, 2009; Wiwattanakantang, 1999). In this context, the pio-neering study of Booth et al. (2001). In this study we also assume that capital structure has effect on firm performance and value of firm. Prateepkanth (2011) identified the impact of capital structure decision on value of firm. The result shows that capital structure has negative relation. Abzari, Mehdi, Fathi, Saeed and Nematizadeh, Fateme (2012) examined the effect of macroeconomic variable on capital structure decisions listed in Tehran Stock Exchange. Mine aysen Doyren (2013) establishes the relationship between firm performance and some micro and macro variables. Capital structure decisions are still puzzle for manager even though it is examined a lot.

With reference to the above discussion of theories and previous research using debt ratio as capital structure indicator and ROA as firm performance which is measure by EBIT to Total assets. ROA is most effective measure taken by many researchers. There is also has the relationship between ROA and ROE. If company has good ROA will generate Better ROE. Based on model discussed above the overall research can be arrange in a way to analyze firm capital structure decision and macro economic factors relation with performance and value of firm.
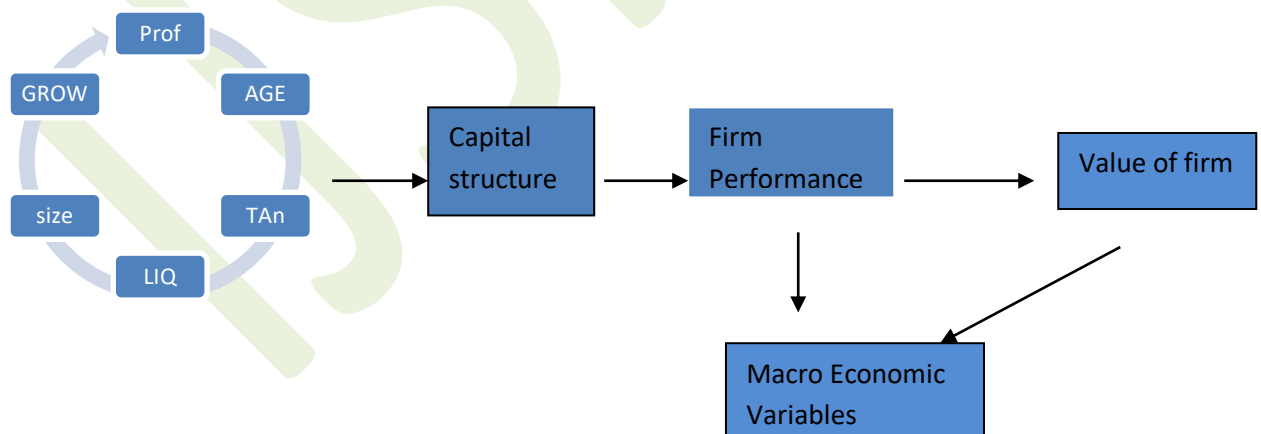
Research Hypothesis

Determinants of capital structure, capital structure measure and macro economic factors simultaneous effect on value of firm.

There is no relationship between of profitability on capital structure.

There is no relationship between of Growth on capital structure.

There is no relationship between of Size on capital structure.

There is no relationship between of Liquidity on capital structure.

There is no relationship between of Tangibility on capital structure.

There is no relationship between of Age on capital structure.

There is no relationship between capital structure and firm performance.

There is no relationship between firm performance and value of firm.

There is no relationship between macro economic variables and firm performance.

There is no relationship between macro economic variables and firm value.

3- RESEARCH METHODOLOGY

This was empirical study performed to discover the effect of capital structure decision on value of firm considering the macro economic variables. Measuring the performance of firm and its effect on value of firm is also included in this study. This is quantitative research that is focused on numerical data which is processed through statistical tools. To answer the established hypothesis used appropriate tools to examine the relation of panel data analyze and aim to open the relationship between independent and dependent variable.

Population and Sample

This study includes the companies listed on National stock exchange in India. Study considers only NSE. The unit of analysis of this study to research the pattern of financial structure and variable that has effect on financial structure and value of firm. The sample taken from money control and for the period during 2009 to 2018. The research method used sampling technique. This study uses the secondary data and processed data available in time series .Because the study used econometric model, this study uses panel data analysis. Regression method is used to estimate the econometric model for purpose of study of independent and dependent variable.

Statistical tools and econometric models

From above hypothesis mathematically termed as

1st model capital structure =f(prof, liq, tan, size, growth, Age)

2nd model capital structure =f(firm performance)

3rd model firm performance = f(mac eco) i.e. GDP,INF,CPI

4th model firm performance = f (value of firm)

5th model value of firm= f(mac eco) i.e. GDP,INF,CPI

4- RESULTS AND DISCUSSION

The descriptive statistics of study in given table 1 to find the determinants of financial structure. The mean value of independent variable Leverage and dependent variable Growth opportunity, Age, Liquidity, Profitability, size and Tangibility of sample from 2009 to 2018. The profitability reveals mean of 10.26 percent with median of 6.79 percent this shows that Indian firm has average performance. The growth opportunities stood with the men of 25.58 and median 14.84. The average of Age is 41.86 and median 14.84. The average of age is 41.86 and median is 35. The average size which is determined by log of total assets has 10.26 and median is 10.29 where as tangibility has 59.08 and median is 3.64.

Panel unit root test has been proposed by several researchers like Maddala and Wu (1999). It's mostly referred than single time series units because approximately the test statistics are approximately normally the test statistics are approximately normally distributed for the finite sample sizes. In this study we also used unit root test to examine data is stationary or not. Firstly, it is necessary to check the stationary. The series is said to be stationary when mean and auto covariance does not depend on time. All variable of unit root study it is found in our study at first difference. For unit root test Levin, Lin & Chu conducted. The hypothesis of this test are Null hypothesis process has unit root and Alternative hypothesis process has no unit root. Since our test has significant p-value as less than .05 indicates the rejection of Null Hypothesis which means data in not unit root and result is desirable. As table attach on appendix.

Panel Regression the result of pooled OLS, Fixed effect and Random effect each three equations is given on TABLE 6. After analyzing regression effect of all three fixed effect is fit for model as Hausman test is insignificant in case of equation 1 and 3 which indicates

use of random effect whereas in case of 2nd model p value is significant and deliver the result of rejection of null hypothesis which indicates the use of fixed effect.

As all the dependent and independent variable has stationary data and can go for regression Analysis. As table attach on appendix. (TABLE)

Leverage and determinates

This section presents the descriptive analysis of study. The descriptive statistics of variables cover minimum, maximum, mean and standard deviation. The descriptive statistics presented table below from 2009-2018.

	LEV	GROW_OPP	AGE	LIQ	PROF	SIZE	TAN
Mean	2.627451	25.58761	41.86400	1.632400	9.537300	10.26335	59.08524
Median	0.970000	14.84370	35.00000	1.220000	6.790000	10.29476	3.647596
Maximum	18.16281	861.1174	111.0000	16.73000	77.61000	15.04804	1132.983
Minimum	0.000000	-69.74071	2.000000	0.000000	-20.44000	6.024174	0.095333
Std. Dev.	3.638682	71.80106	24.28788	1.886369	10.24830	1.612016	143.7372
Skewness	2.091567	8.905524	0.709452	3.740114	2.172258	0.127138	3.978110
Kurtosis	6.875080	94.41417	2.930907	23.13166	12.18723	2.990591	22.42054
Jarque-Bera	677.3927	180703.8	42.04295	9609.113	2151.666	1.348857	9176.222
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.509447	0.000000
sum	1313.725	12793.81	20932.00	816.2000	4768.650	5131.677	29542.62
Sum Sq. Dev.	6606.763	2572541.	294360.8	1775.635	52408.77	1296.699	10309524
Observations	500	500	500	500	500	500	500

(TABLE 1)

TABLE describes the result of Housman (1978) test for the selection of fixed effect model or random effects model. Housman test for cross section random effect has Chi-square test statistics=210.6 Chi-square d.f. =7 with p-value= 0.000. The null hypothesis of cross section

random effect is rejected. In this case fixed effect estimations preferred to random effect model. The fixed effect regression equation can be expressed as:

In case of first equation where enterprise value is taken as dependent variable and other determinants of capital structure were analyzed on basis of Hausman p value found insignificant i.e. 1.0000 which means null value cannot be rejected and random effect has to be observed. Random effect reflects that size and inflation has significant effect but size is positively associated and inflation found negatively associated. Although, Hausman suggest fixed effect and R square found to be good (61.36) and fixed effect drawn PROF LIQ, SIZE TAN and AGE found significant at 1 % level where Growth opportunity found significant at 10% .this is also noticed that Tangiblity had size has positive association whereas others delivers negative relation.

Independent variable	Pooled OLS			Fixed Effect			Random Effect		
	Coefficient	t-statistics	P value	Coefficient	t-statistics	P value	Coefficient	t-statistics	P value
C	-3.906756	-4.574354	0.0000	-5.323297	-6.003008	0.00000	-1.990889	-1.648635	0.0999
PROF	-0.035903	-3.102147	0.0020	-0.032282	-2.830763	0.00048	-0.005486	-0.790376	0.4297
LIQ	-0.391039	-6.605303	0.0000	-0.357841	-6.081905	0.00000	-0.063085	-2.351279	0.0191
SIZE	0.739152	9.757033	0.0000	0.857891	10.97178	0.00000	0.514062	4.636431	0.00000
TAN	0.010836	13.50292	0.0000	0.010932	13.84373	0.00000	0.004105	4.930533	0.00000
GROW_OPP	-0.001385	-0.946466	0.3444	-0.002588	-1.750467	0.08007	-0.000409	-0.720614	0.4715
AGE	-0.016149	-3.463505	0.0006	-0.012941	-2.796689	0.00054	-0.017544	-1.846147	0.0655
R-squared			0.592565			0.613634			0.199704
Adjusted R-squared			0.587606			0.601660			0.174902

Prob (F-statistic)		119.5015			51.24655		8.051759
sig		0.000000			0.000000		0.000000
D-W statistics		0.175425			0.171014		0.063100
Hausman test	Chi-Sq. Statistic 57.986718	Chi-Sq. d.	Chi-Sq. d.f. 6	Prob 0.0000	Means fixed is accepted		
Cross section		0.0000					

(TABLE 2)

Capital structure and ROA

This section considers establishing the relationship between capital structure and Return on assets to identify the firm performance impact on capital structure decision. The mean of capital structure is 2.6 and median explores the .97 where as ROA 9.53 and median is 6.79.

	Capital structure	ROA
Mean	2.627451	9.537300
Median	0.970000	6.790000
Maximum	18.16281	77.61000
Minimum	0.000000	-20.44000
Std. Dev.	3.638682	10.24830
Skewness	2.091567	2.172258
Kurtosis	6.875080	12.18723
Jarque-Bera	677.3927	2151.666
Probability	0.000000	0.000000
Sum	1313.725	4768.650
Sum Sq. Dev.	6606.763	52408.77

Observations		
	500	500

(TABLE 3)

Independent variable	Pooled OLS			Fixed Effect			Random Effect		
	Coefficient	t-statistics	P value	Coefficient	t-statistics	P value	Coefficient	t-statistics	P value
C	2.735414	34.37790	0.0000	3.968517	19.41398	0.00000	2.768316	6.049609	0.0000
ROA	-0.011320	-1.552961	0.1211	-0.140613	-9.624820	0.00000	-0.014770	-2.046284	0.0413
R-squared	0.949095					0.156843			0.008168
Adjusted R-squared	0.943427					0.155150			0.006176
Prob (F-statistic)	167.4279					92.63715			4.100952
Sig	0.000000					0.000000			0.043392
D-W statistics	0.755663					0.083064			0.668514
Hausman test		Chi-Sq. d.	Chi-Sq. d.f. 6	Prob 0.0007	Means fixed is accepted				
Cross section		11.483141	0.0000						

(TABLE 4)

The regression analysis is used to investigate the relationship among determinants of financial structure and financial structure. Regression results are presented on TABLE 2. The result from regression model denotes that independent variable explain the debt ratio is 15 % which his quite low. The capital structure and ROA are negatively associated.

Macroeconomic variable and capital structure

Descriptive statistics shows that GDP has 7.4 % mean and 7.25 median. On the other hand CPI has 695 mean and 711 median. Average inflation is 4.95 and median is 4.45.this study consider the value of firm with the measurement of price to book and also known as tobins Q. the mean of price to book is 12.39 and 4063 median. Following table clearly shows that GDP, CPI and INF are normally distributed but ROA and Price to Book are not.

	GDP	CPI	ROA	PRICE_TO_BOOK	INF
Mean	7.433300	695.4000	15.05743	12.39320	4.956900
Median	7.256500	711.0000	10.24851	4.635000	4.456000
Maximum	10.30000	889.0000	196.2883	232.7099	8.984000
Minimum	5.500000	450.0000	-6.798488	1.194686	2.039000
Std. Dev.	1.280854	148.8316	20.18781	28.61123	2.740712
Skewness	0.758879	-0.218569	6.231492	5.484015	0.250474
Kurtosis	3.215531	1.640348	52.82820	36.62718	1.353021
Jarque-Bera	12.72941	11.04861	14290.12	6776.712	16.05223
Probability	0.001721	0.003989	0.000000	0.000000	0.000327
Sum	966.3290	90402.00	1957.466	1611.116	644.3970
Sum Sq. Dev.	211.6358	2857457.	52573.67	105599.7	968.9838
Observations					
	130	130	130	130	130

(TABLE 5)

Independent variable	Pooled OLS			Fixed Effect			Random Effect		
	Coefficient	t-statistics	P value	Coefficient	t-statistics	P value	Coefficient	t-statistics	P value
C	44.85014	1.549335	0.1238	44.85014	1.758152	0.0814	44.85014	1.748311	0.0828
GDP	-0.355987	-0.233531	0.8157	-0.355987	-0.265006	0.7915	-0.355987	-0.265006	0.7914

Independent variable	Coefficient	t-statistics	P value	Coefficient	t-statistics	P value	Coefficient	t-statistics	P value
INF	-2.042689	-1.613193	0.1092	-2.042689	-1.830617	0.0698	2.042689	-1.830617	0.0695
CPI	-0.024477	-1.008634	0.3151	-0.024477	-1.144577	0.2548	-0.024477	-1.144577	0.2546
R-squared			0.024337			0.314493			0.031121
Adjusted R-squared			0.001107			0.224295			0.008053
Prob (F-statistic)			1.047652			3.486692			1.349085
Sig			0.373988			0.000066			0.261537
D-W statistics			1.519132			2.162140			1.956222
Hausman test	Chi-Sq. Statistic 00000	Chi-Sq. d.	Chi-Sq. d.f. 3	1.0000	Means Random is accepted				
Cross section			0.0000						

(TABLE 6)

The regression analysis is used to investigate the relationship among macroeconomic variable and financial structure. Regression results are presented on TABLE 2. The result from regression model denotes that independent variable explain the debt ratio is 0.3 % which his quite low. The inflation and capital structure are negatively associated at 10% significance level.

Price to book and Macroeconomic variables

Independent variable	Pooled OLS			Fixed Effect			Random Effect		
	Coefficient	t-statistics	P value	Coefficient	t-statistics	P value	Coefficient	t-statistics	P value
C	16.12500	0.392284	0.6955	16.12500	0.562432	0.5749	16.12500	0.551133	0.5825
GDP	-0.638196	-0.294839	0.7686	0.008626	0.358885	0.7203	0.008626	0.358885	0.7203
INF	-1.005891	-0.559441	0.5769	0.638196	-0.422721	0.6733	-0.638196	-0.422721	0.6732
CPI	0.008626	0.25031	0.8028	-	-0.802091	0.424	-	-	0.4240

	Pooled OLS			Fixed Effect			Random Effect		
		4		1.005891		2	1.005891	0.802091	
R-squared	0.020585					0.568915			0.041414
Adjusted R-squared	0.882730					0.512194			0.018591
Probe (F-statistic)	0.452065					10.02994			1.814539
Sig	0.882730					0.000000			0.147871
D-W statistics	1.146781					2.605461			2.357322
Housman test	Chi-Sq. Statistic 00000	Chi-Sq. d.	Chi-Sq. doffs. 3	1.0000		Means fixed is accepted			
Cross section	0.0000								

(TABLE 7)

The regression analysis is used to investigate the relationship among macroeconomic variable and financial structure. Regression results are presented on TABLE 2. The result from regression model denotes that independent variable explain the debt ratio is 4.14 % which his quite low. The inflation and value of firm found insignificant.

ROA and firm value

The regression analysis is used to investigate the relationship among determinates of financial structure and financial structure. Regression results are presented on TABLE 2. The result from regression model denotes that independent variable explain the is .6% % which his quite low. The capital ROA and price to book are negatively associated.

Independent variable	Pooled OLS			Fixed Effect			Random Effect		
	Coefficient	t-statistics	P value	Coefficient	t-statistics	P value	Coefficient	t-statistics	P value
C	13.93152	7.247953	0.0000	14.25674	4.338648	0.0000	2.768316	6.049609	0.0000
ROA	0.090849	1.468939	0.1443	0.064607	0.897970	0.3709	-0.014770	-2.046284	0.0413
R-squared	0.016578					0.292041			0.006298
Adjusted R-squared	0.008895					0.212701			-0.001466

Prob (F-statistic)	2.157783					3.680865		0.811207
Sig	0.144303					0.000068		0.369455
D-W statistics	1.561329					2.155418		1.968790
Hausman test		Chi-Sq. d. 0.233602	Chi-Sq. d.f. 1	Prob 0.6289	Means random is accepted			
Cross section			0.0000					

(TABLE 8)

5- CONCLUSION

The study has found that determinants profitability, liquidity , size growth opportunity and age has strong relation with financial decision in Indian companies and also seen that capital structure decision has strong impact on firms performance similarly firm performance is related with firm value. On the other hand macroeconomic variable among GDP, inflation and CPI, CPI has no relation with performance as well as value of firm. GDP has relation with firms' value and inflation has strong relation with the firm performance.

This study is helpful to understand the current scenario of the factors effecting the financial decision of firm. in addition for further development it is we can include some more economic measurement and other firm value measurements.

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