Impact of Capital Gearing on Shareholders' Wealth: Market Value Added Momentum (MVAM) and Economic Value Added Momentum Approaches

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Abstract

The study has chosen a sample of 142 firms in India, which have listing flag in Bombay Stock Exchange (BSE), for the period from 2009 to 2018 using variables viz. growth in dividend per share (GDPS), growth in return on equity capital employed (GROECE), growth in retained earnings (GRE), growth opportunity (GO), growth in sales (GS), as well as growth in return on total assets (GROTA) as predictor variables and market value added momentum (MVAM) and economic value added momentum (EVAM) as proxy for shareholders' wealth(SW) or equity investors' riches as experimentalvariables and used correlation and multiple regression for analysis. The study proved that both, MVAM and EVAM, the equity investors' riches measurement models are equally good in measuring the equity investors' riches of the firms listed on BSE in India.

Keywords: Value of firm; Firm performance

JEL: G32; L25

1. INTRODUCTION

The gearing ratio describes relationship between investors' equity and borrowed funds. It is widely used for making a comparison of the equity capital to borrowed capital. It is a measure of degree of financial leverage supported by owners' funds and creditors' funds. In the corporate world, different firms use different proportion or mix of debt and equity. A firm may adopt to use all equity or debt and equity. All equity is preferred by the investors as they are not given condition on the type of investment and usage of funds. Debt instruments

with tax-deductible would be preferred by any investors as their costs are chargeable expense and get the advantage of tax shield. Firms use capital structure (CS) in various proportion to maximize their value**(Abor, 2007)**[1].

Stewart (1991)[2]presented a proportion of equity investors' worth called market value added (MVA). The MVA discloses how much worth the market includes over the book estimation of capital contributed. It offers top-down assessment and clears for hazard elements; gives straight forward proportion of capital and can without much of a stretch bind together all monies related administration exercises. The MVA is firmly identified with market worth of firms and riches creation. The riches creation is not controlled by the market estimation of a firm in any case; it recognizes the market esteem and the capital of the firm. It is the distinction between the present market estimation of every single capital component and the authentic measure of capital put resources into a firm. A positive MVA demonstrates that a firm is building an incentive for its investors and a negative MVA shows that the equity investors' worth is being crushed. Expanding MVA ought to be reliable with the administration objective along these lines augment the equity investors' riches.

Research Questions

1. Is there any critical distinction in the equity investors' riches of 'low capital gearing firms' between market value added momentum and economic value added momentum approaches?
2. Is there any critical distinction in the equity investors' riches of 'high capital gearing firms' between market value added momentum and economic value added momentum approaches?

Objectives of the Study

(A) General Objectives

- To investigate the effect of capital gearing on equity investors' riches between market value added momentum and economic value added momentum approaches.

(B) Specific Objectives

1. To examine the determinants of equity investors' riches of 'low capital gearing firms in market value added momentum and economic value added momentum approaches.
2. To examine the determinants of equity investors' riches of 'high capital gearing firms' in market value added momentum and economic value added momentum approaches.

Hypotheses Developed for the Study

A. Low capital gearing firms

H_0^1: There is no significant effect of determinants on equity investors' riches of 'low capital gearing firms' between market value added momentum and economic value added momentum approaches.

B. High capital gearing firms

H_0^2: There is no significant effect of determinants on equity investors' riches of 'high capital gearing firms' between market value added momentum and economic value added momentum approaches.

Sub-Hypotheses Developed

A.1 Low capital gearing firms – MVAM approach

H_0^{1a}: There is no significant effect of growth in dividend per share (GDPS), growth in return on equity capital employed (GROECE), growth in retained earnings (GRE), growth opportunity (GO), growth in sales (GS) and growth in return on total assets (GROTA) on equity investors' riches of low capital gearing firms in MVAM approach.

A.2 Low capital gearing firms – EVAM approach

H_0^{1b}: There is no significant effect of growth in dividend per share (GDPS), growth in return on equity capital employed (GROECE), growth in retained earnings (GRE), growth opportunity (GO), growth in sales (GS) and growth in return on total assets (GROTA) on equity investors' riches of low capital gearing firms in EVAM approach.

B.1 High capital gearing firms – MVAM approach

H_0^{2a}: There is no significant effect of growth in dividend per share (GDPS), growth in return on equity capital employed (GROECE), growth in retained earnings (GRE), growth opportunity (GO), growth in sales (GS) and growth in return on total assets (GROTA) on equity investors' riches of high capital gearing firms in MVAM approach.

B.2 High capital gearing firms – EVAM approach

H_0^{2b}: There is no significant effect of growth in dividend per share (GDPS), growth in return on equity capital employed (GROECE), growth in retained earnings (GRE), growth opportunity (GO), growth in sales (GS) and growth in return on total assets (GROTA) on equity investors' riches of high capital gearing firms in EVAM approach.

2. REVIEW OF LITERATURE

Ijaz (2012), in an investigation titled "*The Consequences of Easy Credit Policy, High Gearing and Firms' Profitability in Pakistan's Textile Sector. A Panel Data Analysis"* analysed 75 textile organizations recorded on Karachi Stock Exchange during 2000 - 2009. "Gearing ratio (GR)", "inflation (I)", "tax provision (TP)", "financial cost (FC)", "capacity utilization ratio (CUR)", "assets turnover (AT)", "export" and "devaluation" were considered as explanatory variables while "return on assets (ROA)" was considered as experimental variable. The investigation utilized regression for analysis and found that there was a critical positive impact of AT, "export" and "devaluation" on ROA; nonetheless, there was a noteworthy negative effect of GR, I, TP, FC, and CUR on ROA.

Priya (2016), in an exploration work titled "*Impact of Capital Structure on Profitability: A Case Study of Beverage Food and Tobacco Firms in Colombo Stock Exchange (CSE) in Sri Lanka"* inspected recorded organizations of beverage food and tobacco sectors of Colombo Stock Exchange during 2008 - 2014. The examination utilized ROCE and ROE as experimental variables and capital is represented by "debt _equity ratio (D/E)", GR as well as "debt to assets ratio (D/TA)" was considered as explanatory variables. Correlation and regression were used for analysis and was found that there was a noteworthy positive effect of "capital structure" on "profitability" of beverage food and tobacco sectors.

Valogo*et al.* (2018), in an exploration work titled *"Analysis of the Relationship between Interest Rates and Gearing Ratio of Banks Listed on the Ghana Stock Exchange*" used data of 10 banks recorded on Ghana Stock Exchange during 2012 - 2016. The investigation utilized correlation for analysis inferred that there was a huge negative connection between gearing ratio(GR) as well as interest rate (IR).

Nakhaei*Collins et al.* (2012), in a study titled *"Performance Evaluation Using Accounting Variables (net profit and operational profit) and Economic Measures"* inspected public sector organizations for the period from 2001 to 2010. Correlation and regression were

used for analysis considering variables viz. EVA, REVA, "economic value added momentum (EVAM)", "net profit (NP)" and "operating profit (OP)" as explanatory variables; and MVA as experimental variable. The investigation demonstrated that there was a noteworthy positive effect of EVA, REVA, EVAM, NP and OP on MVA.

Rajesh *et al.* (2012), in an examination work titled *"Empirical Study on Economic Value Added and Market Value Added Approach"* considered 10 cement firms for the period from 2001 to 2011. Correlation was used for analysis. The examination found that the exhibition measures viz. EVA and MVA indicated comparable outcome on the presentation of the organizations. ACC Ltd. and Grasim Cements Ltd. had good execution with predictable come back to the investors. The two measures viz. EVA and MVA had relative significance to evaluate the presentation of the chosen firms.

Lavanyaand**Ramchendra Reddy** (2012), in an exploration work titled *"Analysis of Financial Performance of Iron and Steel Industry with the Help of Market Value Added Approach"* inspected 11 firms of Iron and Steel sector in India during the period from 2006 - 2011. The examination considered ROS, EPS, ROTA, "capital productivity" and "labor productivity" as determinants of financial performance. The investigation utilized regression for analysis and found that there was a significant positive impact of ROS, EPS, as well as ROTA on MVA. The Iron and Steel segments assumed a significant job in building the mechanical base of the country and giving framework to the improvement of the firms.

ModanloJoibary (2012), in an investigation titled "*External Performance Measurement Based on Market Value Added: A Study of Tehran Stock Exchange* (TSE)" utilized information of 180 organizations recorded on Tehran Stock Exchange (TSE) during 2005 - 2009. The examination found that MVA of organizations recorded on TSE during 2005, 2006, and 2008 were certain, which implies that the TSE made riches for the investors during the periods. The MVA in 2007 and 2009 were negative and the organizations recorded on TSE were not effective for esteem creation during these periods. The normal MVA of organizations recorded on TSE from 2005 to 2009 was sure and it was effective in outer worth creation. The examination demonstrated that 66 (36.7 %) and 114 (63.3 %) recorded firms of the TSE had positive, anyway negative MVA during the investigation time frame.

3. METHODOLOGY OF THE STUDY

Sources of Data and Period of the Study

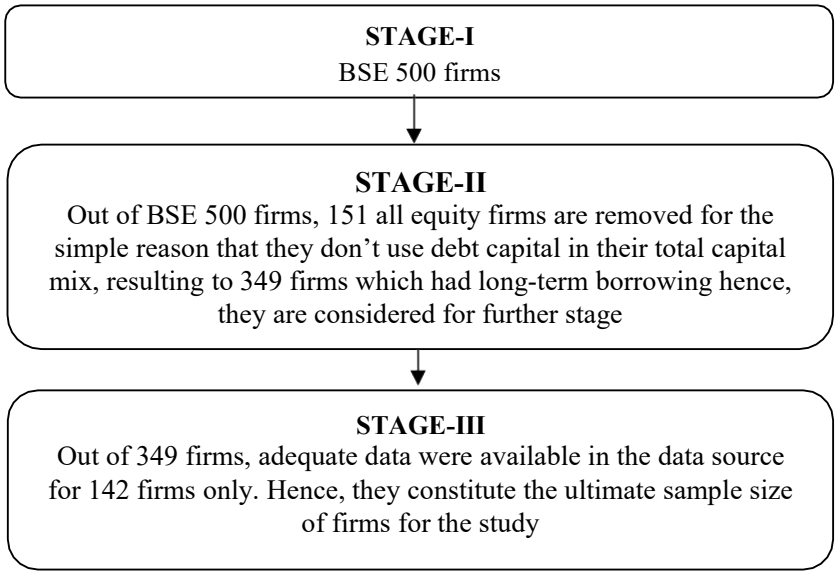
The study used secondary data, which were sourced from the database, called Center for Monitoring Indian Economy Pvt. Ltd. (CMIE) prowess package. The investigation covers post financial meltdown period of nine years on year-to-year reason for the period from2009-10 to 2017-18 considering (500 BSE) firms in India, which are recorded on Bombay Stock Exchange (BSE).

The study is of analytical nature, which makes use of secondary data, a part from the annual report of firms' data source, the rest were collected from academic research journals.

Sampling Design

The study has chosen 142 firms from the BSE listing flag in India. The different stages adopted in arriving the ultimate sample units are shown in figure 1.

Figure 1
Multi-Stage Sampling Technique



Source: ***CMIE*** 'Prowess' Database updated as on 4th April, 2019.

The sample of 142 BSE firms is presented in table I.

Table 1
List of 'Low Capital Gearing Firms' and 'High Capital Gearing Firms' Selected for the Study

Sl. No.	Low capital gearing firms	Capital gearing ratio (CGR < 35%)	Sl. No.	High capital gearing firms	Capital gearing ratio (CGR > 35%)
1.	A I A Engineering Ltd.	5.82	1.	A P L Apollo Tubes Ltd.	46.82

2.	Aegis Logistics Ltd.	25.49	2.	Aarti Industries Ltd.	56.12
3.	Amara Raja Batteries Ltd.	3.77	3.	Adani Ports & Special Economic Zone Ltd.	52.99
4.	Apollo Tyres Ltd.	29.42	4.	Apar Industries Ltd.	42.55
5.	Asian Paints Ltd.	9.60	5.	Apollo Hospitals Enterprise Ltd.	37.86
6.	B E M L Ltd.	25.02	6.	Ashok Leyland Ltd.	35.99
7.	BhartiAirtel Ltd.	30.88	7.	Balkrishna Industries Ltd.	38.67
8.	Biocon Ltd.	3.65	8.	Bharat Forge Ltd.	39.07
9.	Birla Corporation Ltd.	34.85	9.	Bharat Petroleum Corpn. Ltd.	45.54
10.	Bliss G V S Pharma Ltd.	16.04	10.	Century Plyboards (India) Ltd.	48.85
11.	Britannia Industries Ltd.	5.27	11.	Chambal Fertilisers& Chemicals Ltd.	66.82
12.	Caplin Point Laboratories Ltd.	1.78	12.	Cholamandalam Investment & Finance Co. Ltd.	86.70
13.	Carborundum Universal Ltd.	7.75	13.	D L F Ltd.	45.99
14.	Ceat Ltd.	34.18	14.	Deepak Fertilisers& Petrochemicals Corpn. Ltd.	46.53
15.	Cipla Ltd.	5.42	15.	Deepak Nitrite Ltd.	46.03
16.	Delta Corp Ltd.	4.90	16.	Dewan Housing Finance Corpn. Ltd.	91.44
17.	Dr. Reddy'S Laboratories Ltd.	19.69	17.	Edelweiss Financial Services Ltd.	41.26
18.	E I H Ltd.	11.29	18.	G H C L Ltd.	53.05
19.	EsselPropack Ltd.	33.30	19.	Godrej Industries Ltd.	55.05
20.	Finolex Cables Ltd.	5.38	20.	Granules India Ltd.	44.88
21.	G A I L (India) Ltd.	16.75	21.	Great Eastern Shipping Co. Ltd.	42.56
22.	Gateway Distriparks Ltd.	7.61	22.	Greenply Industries Ltd.	45.72
23.	Grasim Industries Ltd.	7.42	23.	H S I L Ltd.	44.02
24.	Gujarat Alkalies& Chemicals Ltd.	9.38	24.	Hatsun Agro Products Ltd.	75.66
25.	Gujarat Fluorochemicals Ltd.	20.07	25.	HimatsingkaSeide Ltd.	52.82
26.	Gujarat State Petronet Ltd.	30.18	26.	Hindalco Industries Ltd.	36.83
27.	H C L Technologies Ltd.	2.70	27.	Hindustan Petroleum Corpn. Ltd.	58.29
28.	Heritage Foods Ltd.	32.20	28.	Housing Development Finance Corpn. Ltd.	86.07
29.	I T C Ltd.	1.35	29.	Indian Oil Corpn. Ltd.	44.22
30.	Info Edge (India) Ltd.	5.52	30.	J K Cement Ltd.	55.79
31.	Ipca Laboratories Ltd.	24.49	31.	J K Lakshmi Cement Ltd.	57.19
32.	JagranPrakashan Ltd.	22.43	32.	J K Tyre&Inds. Ltd.	69.52
33.	Jamna Auto Inds. Ltd.	23.92	33.	J S W Steel Ltd.	55.64
34.	K N R Constructions Ltd.	14.72	34.	Jain Irrigation Systems Ltd.	42.35
35.	Kajaria Ceramics Ltd.	9.45	35.	Jindal Saw Ltd.	45.13
36.	Kalpataru Power Transmission Ltd.	24.10	36.	K E C International Ltd.	50.44

37.	Kansai Nerolac Paints Ltd.	2.01	37.	K P R Mill Ltd.	36.61
38.	Larsen & Toubro Ltd.	22.33	38.	K R B L Ltd.	44.38
39.	Lupin Ltd.	3.46	39.	Kei Industries Ltd.	61.43
40.	Mahindra & Mahindra Ltd.	13.32	40.	Magma Fincorp Ltd.	84.82
41.	Minda Industries Ltd.	19.65	41.	Meghmani Organics Ltd.	39.26
42.	Mindtree Ltd.	5.17	42.	N C C Ltd.	36.75
43.	MothersonSumi Systems Ltd.	20.85	43.	N T P C Ltd.	49.82
44.	N I I T Technologies Ltd.	1.75	44.	P V R Ltd.	47.44
45.	N L C India Ltd.	28.27	45.	Power Finance Corpn. Ltd.	85.09
46.	Nava Bharat Ventures Ltd.	9.49	46.	Power Grid Corpn. Of India Ltd.	70.85
47.	P I Industries Ltd.	11.26	47.	RadicoKhaitan Ltd.	45.79
48.	Page Industries Ltd.	17.15	48.	Ramco Cements Ltd.	40.99
49.	Petronet L N G Ltd.	27.44	49.	Rashtriya Chemicals & Fertilizers Ltd.	39.79
50.	Rallis India Ltd.	5.53	50.	Reliance Capital Ltd.	62.30
51.	RelaxoFootwears Ltd.	30.03	51.	Reliance Infrastructure Ltd.	44.31
52.	Reliance Industries Ltd.	28.73	52.	S R F Ltd.	38.40
53.	Shree Cement Ltd.	22.94	53.	Sadbhav Engineering Ltd.	46.38
54.	Siemens Ltd.	2.90	54.	Sobha Ltd.	42.71
55.	Solar Industries India Ltd.	26.80	55.	Somany Ceramics Ltd.	35.80
56.	Strides Pharma Science Ltd.	28.48	56.	Sterlite Technologies Ltd.	50.98
57.	Suprajit Engineering Ltd.	29.70	57.	Sudarshan Chemical Inds. Ltd.	52.38
58.	Supreme Industries Ltd.	22.72	58.	Sundaram-Clayton Ltd.	49.13
59.	Swan Energy Ltd.	24.01	59.	Sundram Fasteners Ltd.	38.75
60.	T V S Motor Co. Ltd.	32.12	60.	T V S Srichakra Ltd.	41.16
61.	Tata Chemicals Ltd.	25.08	61.	Time Technoplast Ltd.	36.09
62.	Tata Coffee Ltd.	11.91	62.	Torrent Pharmaceuticals Ltd.	45.93
63.	Tata Communications Ltd.	8.42	63.	Torrent Power Ltd.	51.34
64.	Tata Consultancy Services Ltd.	3.92	64.	Uflex Ltd.	38.64
65.	Tata Steel Ltd.	32.30	65.	Vardhman Textiles Ltd.	43.33
66.	Thomas Cook (India) Ltd.	17.92	66.	Vedanta Ltd.	37.82
67.	Titan Company Ltd.	18.30	67.	Venky'S (India) Ltd.	50.66
68.	Trent Ltd.	17.51			
69.	U P L Ltd.	19.95			
70.	Ultratech Cement Ltd.	30.43			
71.	United Breweries Ltd.	28.86			
72.	Vinati Organics Ltd.	15.14			
73.	Voltas Ltd.	4.47			

74.	Wipro Ltd.	14.17
75.	Zee Entertainment Enterprises Ltd.	21.11

Source: *CMIE prowess Pvt. Ltd.*

Categories of Size of Firms

The size of the firms is measured based on capital gearing ratio of the firms for the period of nine years (i. e. from 2009-10 to 2017-18). The selected sample firms are classified in to two categories based on capital gearing ratio of firms viz. 'low capital gearing firms' and 'high capital gearing firms'.

Capital gearing ratio = Debt/ (Debt + Equity)

The firms, which have capital gearing ratio < 35% are considered as 'low capital gearing firms' and the firms which have capital gearing ratio > 35% are considered as 'high capital gearing firms'. The benchmark of 35% is decided based on trial and error method as shown in table2.

Table 2
Size of Firms Based on Capital Gearing Ratio

Low capital gearing ratio	Number of firms	High capital gearing ratio	Number of firms	Difference in the size of firms between low capital gearing ratio and high capital gearing ratio
Up to 25%	54	Above 25%	88	34
Up to 30%	65	Above 30%	77	12
Up to 35%	**75**	**Above 35%**	**67**	**8**
Up to 40%	89	Above 40%	53	36
Up to 50%	118	Above 50%	24	94

Since the difference in the number of firms is minimum (i.e. 8) in the classification of capital gearing ratio of < 35% and > 35%, it is decided to consider the firms classifying them into 'low capital gearing' and 'high capital gearing' adopting benchmark of capital gearing ratio of '< 35%' and > 35%'.

Plan of Analysis

There were very less number of researches done in India when compared to elsewhere on the capital gearing associating shareholders' wealth based on "market value added momentum (MVAM)" and "economic value added momentum (EVAM)" approaches. Hence, the present study attempts to analyse the selected BSE 500 firms classifying into two sub-categories viz. 'low capital gearing firms' and 'high capital gearing firms' based on the benchmark capital gearing ratio over the study period.

4. RESEARCH METHODOLOGY

The investigation utilized secondary data, which are sourced from the data base called Centre for Monitoring Indian Economy Pvt. Ltd. (CMIE) prowess package. The study covers post financial meltdown period of nine years on year-to-year basis for the period from 2009-10 to 2017-18 considering firms in India recorded on Bombay Stock Exchange (BSE 500).

Determinants of Shareholders' Wealth

The determinants of equity investors' riches viz. growth in dividend per share (GDPS), growth in return on equity capital employed (GROECE), growth in retained earnings (GRE), growth opportunity (GO) and growth in sales (GS) as well as growth in return on total assets (GROTA) under MVAM are presented in table 3.

Table 3

Determinants (Variables) of Shareholders' Wealth - used for Analysis

Variables used	Description	Formula
Experimental variables (Equity investors' riches or Shareholders' wealth)		
Market value added momentum (MVAM)	The MVAM is a further development of MVA. The MVAM is the change in MVA over a year divided by sales of the previous year.	$\mathbf{MVA_1 - MVA_0/Sales_0}$
Economic value added momentum (EVAM)	The EVAM is a further development of EVA. The EVAM is the change in EVA over a year divided by sales of the earlier year.	$\mathbf{EVA_1 - EVA_0/Sales_0}$
Explanatory variables		
Growth in dividend per share (GDPS)	The DPS of a firm from the present year to the earlier year divided by DPS of the earlier year.	$\mathbf{DPS_1 - DPS_0/ DPS_0}$
Growth in sales (GS)	The sales of a firm from the present year to the earlier year divided by sales of the earlier year.	$\mathbf{S_1 - S_0/ S_0}$
Growth in return on equity capital employed (GROECE)	The ROECE of a firm from the present year to the earlier year divided by ROECE of the earlier year.	$\mathbf{ROECE_1 - ROECE_0/ ROECE_0}$
Growth opportunity (GO)	The GO of a firm from the present year to the earlier year divided by GO of the earlier year.	$\mathbf{GO_1 - GO_0/ GO_0}$ Where, GO = market capitalization / net fixed assets value
Growth in retained earnings (GRE)	The RE of a firm from the present year to the earlier year divided by RE of the earlier year.	$\mathbf{RE_1 - RE_0/ RE_0}$
Growth in return on total assets (GROTA)	The ROTA of a firm from the present year to the earlier year divided by ROTA of the earlier year.	$\mathbf{ROTA_1 - ROTA_0/ ROTA_0}$

$_1$ is end of the year

$_0$ is end of the earlier year

Research Methods Used for Analysis

Correlation

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x^2)]\ [n\sum y^2 - (\sum y^2)]}}$$

Where,

n= Number of items

∑=Sigma

x= (GDPS, GROECE, GRE, GO, GS, GROTA)

y = Market value added momentum and Economic value added momentum

Regression

The study used two regression models viz.

Y= MVAM (market value added momentum)

Y= EVAM (economic value added momentum)

The regression equation is:

$Y = a + b_1(X_1) + b_2(X_2) + b_3(X_3) + b_4(X_4) + b_5(X_5) + b_6(X_6) + b_7(X_7) + u$

a= Regression constant

b1, b2…= Regression co-efficients

X_1= GDPS (growth in dividend per share)

X_2= GROECE (growth in return on equity capital employed)

X_3= GRE (growth in retained earnings)

X_4= GO (growth opportunity)

X_5= GS (growth in sales)

X_6= GROTA (growth in return on total assets)

u= Error term

Connection Matrix of Determinants of SW of 'Low Capital Gearing Firms' under MVAM Approach

Table 4
'Low Capital Gearing Firms' - Connection Matrix of Determinants of SW under MVAM Approach

Variables	MVAM	GDPS	GROECE	GRE	GO	GS	GROTA
MVAM	1.00						
GDPS	0.8044**	1.00					
	0.000						
GROECE	0.4126**	0.1918	1.00				
	0.000	0.099					
GRE	0.7033**	0.4021**	0.1868	1.00			
	0.000	0.000	0.108				
GO	0.6049**	0.5118**	0.2829*	0.6504**	1.00		
	0.000	0.000	0.014	0.000			
GS	0.5015**	0.8951**	-0.0107	0.8966**	0.7656**	1.00	
	0.020	0.000	0.927	0.000	0.000		
GROTA	0.4833**	0.2526*	0.5129**	0.2475*	0.3457**	0.0031	1.00
	0.000	0.029	0.000	0.032	0.002	0.979	

Source: *Computed results based on compiled data collected from CMIE Prowess Package*
** and * denote significance at 1% and 5% level respectively.

Table 4shows connection matrix of determinants of equity investors' riches of *'low capital gearing firms'* under MVAM approach. The analysis shows that the determinants of equity investors' riches viz. GDPS (0.8044), GROECE (0.4126), GRE (0.7033), GO (0.6049), GS (0.5015) and GROTA (0.4833) have significant positive relationship (at 1% level) with equity investors' riches in MVAM approach.

Regression on Determinants of SW of 'Low Capital Gearing Firms' under MVAM Approach

The result of regression analysis of determinants of equity investors' riches viz. growth in dividend per share (GDPS), growth in return on equity capital employed (GROECE), growth in retained earnings (GRE), growth opportunity (GO), growth in sales (GS) as well as growth in return on total assets (GROTA) of *'low capital gearing firms'* in MVAM approach in shown in table 5.

Table 5
Regression Result on Determinants of SW under MVAM Approach for 'Low Capital Gearing Firms'

Variables	Coefficient	Std. Error	t-Statistic	Probability
Constant	-0.056411	0.091301	-0.617861	0.5387
GDPS	5.317467	0.525147	10.12567**	0.0000
GROECE	3.124143	1.957728	1.595800	0.1152
GRE	-6.536555	0.655997	-9.964309**	0.0000
GO	0.105196	0.003027	34.75082**	0.0000
GS	-0.063669	0.004363	-14.59184**	0.0030
GROTA	-3.730927	3.178540	-1.173786	0.2446

R^2	0.894553		
Adjusted R^2	0.893073	Mean dependent var	1.935646
S.E. of regression	0.344500	S.D. dependent var	4.474706
Sum squared residual	8.070235	Akaike info criterion	0.795238
Log likelihood	-22.82143	Schwarz criterion	1.011537
F-statistic	69.476**	Hannan-Quinn criter.	0.881604
Prob (F-statistic)	0.000000	Durbin-Watson stat	1.828222

Source: *Computed results based on compiled data collected from CMIE Prowess Package*
** denotes significance at 1% level.

The analysis shows that there is a significant positive coefficient of GDPS (10.125) and GO (34.750); however there is a significant negative coefficient of GRE (-.9.964) and GS (-14.591) on equity investors' riches under MVAM approach at 1% level; Hence, ***H_0^{1a}:*** *"there is no significant effect of growth in dividend per share (GDPS), growth in return on equity capital employed (GROECE), growth in retained earnings (GRE), growth opportunity (GO), growth in sales (GS) as well as growth in return on total assets (GROTA) on equity investors' richesof 'low capital gearing firms' in MVAM approach"* is rejected for GDPS and GO, which are significant positively at 1% level; and for GRE and GS, which are significant negatively at 1% level respectively. However, it shows an insignificant positive coefficient of GROECE (1.595) and insignificant negative coefficient of GROTA (-1.173) on equity investors' riches under MVAM approach. Durban Watson value is 1.828 (ranges between 0 and 2), whose successive error terms are positively correlated.

The regression model fit of 'low capital gearing firms' in MVAM approach, which is represented by adjusted R^2 (0.8930), shows that the explaining variables determine 89% of the changes in the equity investors' riches in MVAM approach. The F statistics (69.476) is significant at 1% level, showing that the change in the experimental variable (equity investors' riches) is influenced significantly by GDPS as well as GO positively; and GRE as

well as GS negatively, which means that the GDPS and GO affect significantly and positively the equity investors' riches; GRE and GS affect significantly but negatively the equity investors' riches of 'low capital gearing firms' under MVAM approach.

Analysis and Discussion on 'High Capital Gearing Firms'

Connection Matrix of Determinants of SW of 'High Capital Gearing Firms' under MVAM Approach

Table 6
Results of Connection Matrix of Determinants of SW under MVAM Approach for 'High Capital Gearing Firms'

Variables	MVAM	GDPS	GROECE	GRE	GO	GS	GROTA
MVAM	1.00						
GDPS	0.5871**	1.00					
	0.000						
GROECE	-0.0192	-0.0745	1.00				
	0.877	0.549					
GRE	0.5880**	0.9276**	-0.0739	1.00			
	0.000	0.000	0.552				
GO	0.8669**	0.8768**	-0.1103	0.8758**	1.00		
	0.000	0.000	0.362	0.000			
GS	0.1701	0.706**	0.1035	0.6784**	0.4418**	1.00	
	0.169	0.000	0.404	0.000	0.000		
GROTA	-0.0037	-0.1103	0.9467**	-0.1103	-0.1128	-0.0243	1.00
	0.976	0.352	0.000	0.374	0.363	0.845	

Source: *Computed results based on compiled data collected from CMIE Prowess Package*
** denotes significance at 1% level.

Table 6 shows connection matrix of determinants of equity investors' riches of *'high capital gearing firms'* under MVAM approach. The Connection matrix of 'high capital gearing firms' shows that the determinants viz. GDPS (0.5871), GRE (0.5880) and GO (0.8669) have positive relationship with equity investors' riches under MVAM approach. However, there is insignificant relationship between GROECE (-0.0192), GS (0.1701) as well as GROTA (-0.0037) and equity investors' riches under MVAM approach.

Regression Results on Determinants of SW of 'High Capital Gearing Firms' under MVAM Approach

The result of regression on determinants viz. growth in dividend per share (GDPS), growth in return on equity capital employed (GROECE), growth in retained earnings (GRE), growth opportunity (GO), growth in sales (GS) as well as growth in return on total assets

(GROTA) on equity investors' riches of *'high capital gearing firms'* in MVAM approach is shown in table 7.

Table 7
Regression Result on Determinants of SW under MVAM Approach for 'High Capital Gearing Firms'

Variables	Coefficient	Std. Error	t-Statistic	Probability
Constant	-0.376994	0.155241	-2.428452	0.0182
GDPS	-1.451997	0.792825	-1.831423	0.0720
GROECE	10.09116	8.448630	1.194414	0.2370
GRE	0.810040	0.875041	0.925715	0.3583
GO	0.103400	0.007063	14.63983**	0.0000
GS	0.002362	0.002865	0.824346**	0.0010
GROTA	-6.874257	10.82551	-0.635005	0.5308
R^2		0.844263		
Adjusted R^2		0.834689	Mean dependent var	0.590697
S.E. of regression		0.562222	S.D. dependent var	1.648536
Sum squared residual		18.96563	Akaike info criterion	1.784768
Log likelihood		-52.78974	Schwarz criterion	2.015109
F-statistic		84.574**	Hannan-Quinn criter.	2.015109
Prob (F-statistic)		0.000000	Durbin-Watson stat	2.097811

Source: *Computed results based on compiled data collected from CMIE Prowess Package*
** denotes significance at 1% level.

The analysis reveals that there is a significant positive coefficient of GO (14.639) and GS (0.824); hence $\mathbf{H_0^{2a}}$: *"there is no significant effect of growth in dividend per share (GDPS), growth in return on equity capital employed (GROECE), growth in retained earnings (GRE), growth opportunity (GO), growth in sales (GS) as well as growth in return on total assets (GROTA) on equity investors' riches of 'high capital gearing firms' in MVAM approach"* is rejected for GO and GS, which are significant positively at 1% level respectively. However, it shows an insignificant positive coefficient of GROECE (1.1944), GRE (0.925) and insignificant negative coefficient GDPS (-1.831) and GROTA (-0.635) on equity investors' riches under MVAM approach. Durban Watson value is 2.097 (ranges between 2 and 3), whose successive error terms are negatively correlated.

The regression model fit of 'high capital gearing firms' under MVAM approach, which is represented by adjusted R^2 (0.834) shows that the explaining variables determine 83% of the changes in the equity investors' riches under MVAM approach. The F statistics (84.57) is significant at 1% level, revealing that the experimental variable (equity investors' riches) is explained significantly by the GO and GS positively, which means that the GO and

GS affect significantly and positively the equity investors' riches of 'high capital gearing firms' under MVAM approach.

5. SUMMARY FINDINGS

Findings on Correlation Analysis

Low Capital Gearing Firms - MVAM Approach

The study showed that determinants of equity investors' riches viz. GDPS, GROECE, GRE, GO, GS and GROTA have significant positive relationship with equity investors' riches of *'low capital gearing firms'* in MVAM approach.

High Capital Gearing Firms - MVAM Approach

It is found that determinants of equity investors' riches viz. GDPS, GRE and GO have positive relationship with equity investors' riches of *'high capital gearing firms'* in MVAM approach. However, there is insignificant relationship between GROECE, GS as well as GROTA and equity investors' riches of *'high capital gearing firms'* in MVAM approach.

Findings on Regression Analysis

Low Capital Gearing Firms - MVAM Approach

The study shows that there is a significant positive coefficient of GDPS and GO on equity investors' riches; however there is a significant negative coefficient of GRE as well as GS on equity investors' riches at 1% level under MVAM approach for *'low capital gearing firms'*. However, it shows an insignificant positive coefficient of GROECE and insignificant negative coefficient of GROTA on equity investors' riches of *'low capital gearing firms'* under MVAM approach.

High Capital Gearing Firms - MVAM Approach

The study shows that there is a significant positive coefficient of GO and GS on equity investors' riches of *'high capital gearing firms'* at 1% level. However, it shows an insignificant positive coefficient of GROECE as well as GRE on equity investors' riches; and insignificant negative coefficient of GDPS as well as GROTA on equity investors' riches of *'high capital gearing firms'* under MVAM approach.

6. CONCLUSION

The study proves that the effect of the determinants on equity investors' riches based on MVAM and EVAM approaches, considering 'capital gearing' as control variable, remains same as evidenced by F statistics (0.00). The two popular measures of equity investors' riches viz. MVAM and EVAM show significant effect of the determinants on equity investors' riches of 'low capital gearing firms' and 'high capital gearing firms'.

However, the regression fit is better in EVAM approach for all the categories of firms viz. 'low capital gearing firms' and 'high capital gearing firms'. Therefore, it is concluded that both, MVAM and EVAM, the equity investors' riches measurement models are equally good in measuring the equity investors' riches of the firms listed on BSE in India. And the 'capital gearing' does not have much bearing in estimating the equity investors' riches of all the size (low and high) categories of firms during the study period.

Limitations and Scope for Further Studies

i. The study considered firms with capital of equity and debt only. All equity firms are kept outside the purview of the study.
ii. For want to full-fledged data in the data source over the study period the study considered 142 firms only.
iii. The study covers only 9 years period as it is aimed at studying the impact of various determinants of "shareholders' wealth" particularly after financial meltdown period (2008-09).

References

1. Abor, J. 'Debt policy and performance of SMEs: Evidence from Ghanaian and South Africa firm', *Journal of Risk Finance* 8(4), 364-79 (2007).
2. Stewart, G. B. The quest for value: A guide for senior managers. Harper business. New York (1991).
3. Ijaz, H.'The consequences of easy credit policy, high gearing and firms' profitability in Pakistan's textile sector. A panel data analysis', *The Lahore Journal of Economics* 17(1), 33-44 (2012).
4. Priya, M. 'Impact of capital structure on profitability: A case study of beverage food and tobacco firms in Colombo stock exchange (CSE) in Sri Lanka', *International Journal of Commerce, Business and Management* 5(5), 94-9 (2016).
5. Valogo, M. V., A. B. Shafiwu and J. Adabuge. 'Analysis of the relationship between interest rates and gearing ratio of banks listed on the Ghana Stock Exchange', *Asian Journal of Economics, Business and Accounting* 7(4), 1-8 (2018).
6. Nakhaei, H., N. I. N. Bnti Hamid, M. B. Ahmad Anuar and K. Nakhaei. 'Performance evaluation using accounting variables (net profit and operational profit) and economic

measures', *International Journal of e-Education, e-Business, e-Management and e-Learning* 2(5), 443-8 (2012).

7. Rajesh, M., N. R. V. Ramana Reddy and T. Narayana Reddy. 'Empirical study on economic value added and market value added approach', *International Journal of Marketing, Financial Services & Management Research* 1(3), 87-97 (2012).
8. Lavanya, E., and B. Ramchendra Reddy. Analysis of financial performance of Iron and Steel industry with the help of market value added approach, *International Journal of Research in Commerce and Management* 3(10), 117-9 (2012).
9. Modanlo Joibary, A. R. 'External performance measurement based on market value added: A study of Tehran stock exchange', *Indian Streams Research Journal* 2(9), 1-9 (2012).