A Study on Impact of EVA, Value of Firm and Cost of Capital as Per NI Approach on the Share Price of Pharmaceutical Industry

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Abstract:- **Indian Pharmaceutical industry is the most important industry of the Indian economy. In this paper, cost of capital has been found out using NI approach of capital structure and based on that Economic value added by the firm is found. Impact of EVA and overall cost of capital was found on the share prices of the sample and it was found that firm's absorption capacity of cost of capital has significant impact on the share prices.**

Key Words: **- Net Income Approach(NI), EVA, Value as per NI approach, cost of capital as per NI approach.**

I. INTODUCTION OF INDIAN PHARAMCEUTICAL INDUSTRY

The Indian Pharmaceutical Industry currently tops the chart amongst India's science-based industries with wide ranging capabilities in the complex field of drug manufacture and technology. The Indian Pharmaceutical industry has achieved an eminent global position in Pharma sector and has been witnessing phenomenal growth in recent years. It is well known that India is emerging as a world leader in generic pharmaceuticals production, supplying 20% of the global market for generic medicines.

The industry accounts for 8% of global production, and is exporting to over 200 countries (1). India is a major vaccine producer and has 18 major vaccine manufacturing facilities. These vaccines are used for the national and international market (150 countries) which makes India a major vaccine supplier across the globe.

II. INTRODUCTION OF TOPIC

Overview of Capital Structure

Capital structure is essentially concerned with how the firm decides to divide its cash flows into two broad components, a fixed component that is earmarked to meet the obligations toward debt capital and a residual component that belongs to equity shareholders"-P. Chandra.

Some of the important definitions of capital structure are presented below:

According to Gerestenberg, 'capital structure of a company refers to the composition or make up of its capitalization and it includes all long term capital resources viz., loans, reserves, shares and bonds'. Keown et al. defined capital structure as, 'balancing the array of funds sources in a proper manner, i.e. in relative magnitude or in proportions'.

In the words of P. Chandra, 'capital structure is essentially concerned with how the firm decides to divide its cash flows into two broad components, a fixed component that is earmarked to meet the obligations toward debt capital and a residual component that belongs to equity shareholders'

Value of Firm as per NI approach :

Value of a firm represents the sum of market values of outstanding debt and equity. Hence

$$V = S + D$$

where V = Value of the firm, S = Market value of equity outstanding and D = Market value of debt outstanding.

Now,

$$S = \frac{E}{K_e}$$

where E = Earning available to equity Shares and K_e = Cost of equity.

Again,

$$D = \frac{I}{K_d}$$

where I = Annual interest charges and K_d = Cost of Debt.

Following the assumptions of capital structure, we may say

$$V = \frac{EBIT}{K_o}$$

Or

$$K_o = \frac{EBIT}{V}$$

where K_o = Overall cost of capital.

Hence K_o may be expressed as:

$$K_o = K_e \frac{S}{V} + K_d \frac{D}{V}$$

And value of the firm may be expressed as

$$V = \frac{E}{K_e} + \frac{I}{K_d}$$

Economic value added (EVA)

Economic value added (EVA) is a measure of a company's financial performance based on the residual wealth calculated by deducting its cost of capital from its operating profit, adjusted for taxes on a cash basis. EVA can also be referred to as economic profit, and it attempts to capture the true

economic profit of a company. This measure was devised by Stern Stewart and Co.

EVA = NOPAT-(Total Capital * Cost of Capital).

NOPAT= Net operating profit after Tax

Total Capital = Total Net worth + Total Debt

Cost of Capital (Using NI approach) = K0= cost of capital.

III. LITERATURE REVIEW

(Kumar S, 2012) Capital structure refers to the proportion in which various long-term financial sources are employed. Over the years, the decisions related to select the appropriate sources of fund are the most important decisions that a firm has to take. This paper measures the effect of change in capital structure on the cost of capital.

(Jawade, 2014) The paper investigates the influence of capital structure on performance of pharmaceutical companies across various market capitalizations the study asserts that the companies studied have been cautious in their approach for bringing in optimal capital structure. Irrespective of capitalization, companies have not particularly shown an inclination for pecking order theory or chosen the option of leverage even if in best position to do so. There however were some exceptions which indeed followed the theory of resorting to pecking order but it could be measured as an aberration rather than a rule.

(Sharma, 2015) The present study endeavours to explore and study the shareholder's value creation in Indian companies as measured by EVA and to determine the key factors that have an impact on shareholders' value creation. In the present study, we have taken dividend and capital structure as independent variable and EVA as dependent variable. Regression technique has been used in order to examine the impact of Dividend and Capital structure on Shareholder Value Creation (SVC). The study reveals that both Dividend and Capital structure have influence on the Shareholder Value Creation. It is also found that mostly all companies are having positive EVA which indicates that these companies are not only thinking about profit maximization but also focusing on the objective of wealth maximization.

(**Pandey.I.M, 2010**) In this book, the detailed working of the NI approach of the capital structure theories has been used to calculate the values of the firm and eventually to find the overall cost of capital of the firms.

(Khan.M.Y) how company's NOPAT has the ability to absorb the overall cost of capital and how much the company shall add wealth to its stakeholders.

IV. PROBLEM DEFINITION

1) Impact of, overall cost of capital (using NI approach) and value of firm as per NI approach on the share price of the company.
2) Impact value of firm through EVA on the Share Price of the firm.

Research Design:	Descriptive research
Source of Data	Secondary Source
Sampling Method:	Convenience sampling, Non-Probability
Sample Size:	10 Pharma companies
Time Frame	10 years

V. DATA ANALYSIS AND INTERPRETATION

Company name	Year	Share Price	EVA	Total Value of the firm as per NI approach	NOPAT	Total Capital	Ko in % (as per NI Approach)
Cadila	2005	30.84	-2008446048	5651963377	2253000000	9859000000	**43.22391772**
	2006	44.45	-2091553678	7123764660	2648000000	11695000000	**40.52632474**
	2007	44.69	-1313290409	10090676611	3002000000	13300000000	**32.44579255**
	2008	33.36	-2482715916	11579473299	3470000000	17927000000	33.20530995
	2009	34.22	-3069947314	12868996225	4342000000	20526000000	36.11004245
	2010	110.27	-533930689	20992746164	6364000000	22162000000	31.12503695
	2011	156.19	2170334056	37619671339	7391000000	25643000000	20.35902954
	2012	146.06	2058243206	42750568831	8918000000	32415000000	21.16229151
	2013	144.78	1341092815	47498490726	7264000000	37056000000	15.98366576
	2014	205.28	2095247462	57892776186	10735000000	44835000000	19.27010714

Sunpharma	2005	47.17	-492730266	26897070663	3500100000	29201000000	13.67360798
	2006	88.91	22731722	33973199846	5132500000	32109200000	15.9137203
	2007	101.73	-1220619207	30356297668	6840000000	35176400000	22.91484975
	2008	125.12	-7061008085	26939602842	10752100000	43101400000	**41.32837468**
	2009	175.84	320300120	54239346193	13241500000	51750200000	24.96840569
	2010	117.97	-14038198233	24682520646	9681200000	57474700000	**41.26928585**
	2011	284.75	11051255343	295387261686	14486200000	66805300000	5.141724769
	2012	409.18	16831482072	424142424347	20735600000	78781200000	4.955646687
	2013	580.6	5057566200	601690183073	6028100000	77935200000	1.245308667
	2014	1010.7	1605795092	2117415463837	1674000000	74125200000	0.092013119
AURBINDO	2005	28.72	-936284677	9749314400	1155600000	16527100000	12.65730029
	2006	68.28	-941845126	15689475600	1811400000	21106700000	13.04441303
	2007	60.97	-1015663776	23016066398	3769900000	29056600000	16.46979955
	2008	29.14	-3202475763	19123219910	4243900000	29762500000	25.01932218
	2009	15.61	-2125127008	21986075833	2885300000	34355100000	14.5842306
	2010	93.87	-6760048977	24679065929	6816100000	38591400000	**35.17920826**
	2011	96.9	2016673703	51386753001	8025700000	30445500000	19.73699331
	2012	57.33	2460772192	44633083556	6877600000	33269200000	13.2760265
	2013	72.95	1187332378	49063763606	9174400000	39801700000	20.06715196
	2014	261.75	6936643958	105540475247	16469000000	50447000000	18.89578378
Jenberkt	2005	32.3	4405719	234107390	18760000	147459000	9.734421455
	2006	31.05	3533685	228171765	23393000	150738000	13.17472388
	2007	33.95	4256742	247843735	27973000	162181000	14.62332707
	2008	24.2	-2114867	207813060	30172000	173380000	18.62202501
	2009	20	-9739813	162486000	32485000	151942000	27.79008653
	2010	49.5	12925779	278840350	51754000	151986000	25.54723518
	2011	72.8	32137282	360269040	75407000	146853000	29.46464675
	2012	68.65	21319451	343074445	77603000	187731000	**29.98095647**
	2013	66.1	14229986	353718730	86223000	226745000	**31.75065115**
	2014	91.2	22199035	443933160	103060000	273427000	29.57314565
Glanmark	2005	141.13	545074710	21114613488	951951000	7240672000	5.619316691
	2006	157.5	537736921	25985241700	1022395000	10474330000	4.627103392
	2007	296.18	1265095899	44646226427	1976207000	13589005000	5.232988736
	2008	456.7	3960989541	118869194938	4621016000	15558629000	4.242189074
	2009	**148.9**	1596752492	47961464966	3321422000	22958778000	7.512026587
	2010	265.35	1720159146	79198944689	2494050000	25331710000	3.055028081

	2011	281.55	2268310128	87526326522	3189160000	22543110000	4.084839547
	2012	307.65	2459151841	88121817498	3472810000	24400580000	4.154237967
	2013	485.9	3724544771	137414279993	4548420000	25231780000	3.26522833
	2014	581.35	3934948578	161209030672	4950020000	29060220000	3.492992903
CIPLA	2005	101.92	1620394827	32273861091	4763200000	17448300000	18.01209959
	2006	234.66	4405318824	75056648876	7038900000	24521800000	10.73975473
	2007	241.5	6185243938	188951462716	7825600000	33598300000	4.882259109
	2008	206.15	5830595474	165643113246	8352000000	42962700000	5.868822319
	2009	207.95	6389049960	171040137688	9808300000	52909900000	6.462401252
	2010	342.15	8733779337	274770242298	11800400000	59191600000	5.18083759
	2011	327.65	8720252586	267491082621	12213400000	66158700000	5.279951713
	2012	304.55	8985695240	244658899274	14326600000	75524800000	7.071723142
	2013	382.25	11855640317	316576188713	18435200000	88700700000	7.41770886
	2014	391.2	11303419015	322876834858	18398100000	100920700000	7.029956178
DIVIS LAB LTD	2005	49.79	-2421840369	1299147073	853969000	3497503000	**93.66137409**
	2006	93.59	-1405152574	2701502133	908705000	4909965000	**47.12574476**
	2007	153.93	-2876447852	3527012881	2246475000	6960009000	**73.60511821**
	2008	317.25	2057141516	21341531975	3993846000	9600655000	20.17262868
	2009	236.36	532841767	15832604789	4795012000	13144274000	32.42606045
	2010	331.23	2403626954	44098594148	3984140000	15749240000	10.03548772
	2011	338.18	2737279837	45071471300	4911547000	18329667000	11.86201126
	2012	371.25	2798709645	49832032163	6125881000	21773525000	15.2808117
	2013	491.85	3516535532	65616074537	6908739000	25553785000	13.27475937
	2014	684.5	5186804120	91040862505	8867106000	30359668000	12.12233902
LUPIN	2005	55.31	-621774259	6626606122	1448800000	9411400000	22.00070403
	2006	**9.92**	-2383123094	9524200049	2533700000	15565500000	**31.58795473**
	2007	121.3	-721905057	18391295613	3855200000	17529600000	26.11072162
	2008	96.58	-3075321956	17582872839	5338800000	22826000000	36.86200804
	2009	127.47	-1469456566	20006108039	5248400000	23202100000	28.9536575
	2010	324.56	171363402	37935710438	7588800000	34373600000	21.57887622
	2011	404.9	7690186128	190499761426	9418300000	33746300000	5.120898802
	2012	529.65	7828628996	247553966342	9650100000	38693300000	4.707458407
	2013	629.05	11211812577	288205227572	14438500000	48759100000	6.617610708
	2014	963.5	19751856568	433454787154	25128400000	70032800000	7.677179024
DR. REDDYS LAB	2005	369.55	574479288	31009948603	1706506000	23473209000	4.822632953
	2006	709.35	1469755576	63641988230	3470832000	31860112000	6.280820432

	2007	727.5	7807398849	125455129950	13623167000	47032585000	12.36540188
	2008	590.75	2660211432	103971049700	6520000000	52741000000	7.31838336
	2009	473.3	1309648218	86139272154	7820000000	58994000000	11.03561681
	2010	1284.3	6992330083	222480127956	10845000000	64778000000	5.947497478
	2011	1549.55	8419801806	276713570871	11512000000	65332000000	4.733053012
	2012	1660.25	8858015274	296866564447	12827000000	72308000000	5.488998072
	2013	1766.65	11235112152	321041608559	16397000000	77897000000	6.626555385
	2014	2560.8	17468890109	462276789174	23916000000	102305000000	6.301852198
BIOCON LTD	2005	204.1	1188302749	21173415000	1951658000	7722799000	9.884437631
	2006	224.63	869018087	23513476000	1588140000	9080911000	7.919050335
	2007	242.73	1261408757	25340733000	2241186000	10484138000	9.345329514
	2008	215.78	895855540	23016853000	2674269000	14720816000	12.08094347
	2009	**133**	1231374284	28239427000	2830322000	15388180000	10.39075262
	2010	435.25	2593430365	88968062000	3300770000	17580929000	4.023334801
	2011	295.35	3489617421	60756000000	5505000000	20126000000	10.01382579
	2012	337.95	2264925303	69200000000	3512000000	21569000000	5.781791908
	2013	231.4	1700621751	47593000000	3859000000	22468000000	9.606454731
	2014	273.15	2160781176	55844000000	4497000000	24436000000	9.560561564

VI. HYPOTHESIS

Impact of EVA on the SHARE PRICES of the companies

Ho :- There is no significant impact of EVA on the share price of the firm

H1:- There is significant impact of EVA on the share price of the firm

Regression Statistics	
Multiple R	0.636696621
R Square	0.405382587
Adjusted R Square	0.399315063
Standard Error	312.4296521
Observations	*100*

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	6521658.197	6521658.197	66.81185704	0.0000000000010784
Residual	98	9566004.173		97612.28748	
Total	99		16087662.37		

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	194.193738	34.63867051	5.606269963	1.90655E-07	125.4544237	262.9330523	125.4544237	262.9330523
X Variable 1	5.15049E-08	6.30118E-09	8.173852032	1.07838E-12	3.90004E-08	6.40094E-08	3.90004E-08	6.40094E-08

Interpretation:

There is significant impact on EVA on the share price of the firm. Significance F value is 0.0000000000010784. Therefore, H0 is rejected and hence, we accept alternate hypothesis.

Impact of VALUE OF COMPANY as per NI approach on the SHARE PRICE of the companies

Ho:-There is no significant impact of value of the firm on the share price of firm

H1:-There is significant impact of value of the firm on the share price of firm

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.488599756
R Square	0.238729721
Adjusted R Square	0.230961657
Standard Error	2.06397E+11
Observations	*100*

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1.30919E+24	1.30919E+24	30.73220289	0.000000250
Residual	98	4.17478E+24		4.25998E+22	
Total	99		5.48397E+24		

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	21449346854	26290110109	0.815871321	0.416552361	-30722521033	73621214742	-30722521033	73621214742
X Variable 1	285268779.9	51458532.73	5.54366331	2.50475E-07	183150996.4	387386563.3	183150996.4	387386563.3

Interpretation:

There is significant impact of Value of firm on the share price of the firm. Significance F value is 0.00000025 between value of firm and share price Therefore, H0 is rejected and hence, we accept alternate hypothesis.

Impact of overall cost of capital (Ko) on the SHARE PRICE of the company

Ho:- There is no significant impact of cost of capital of firm on the share price of firm

H1:- There is significant impact of cost of capital of firm on share price of the firm

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.39066136
R Square	0.152616298
Adjusted R Square	0.143969526
Standard Error	372.9696449
Observations	*100*

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	2455239.482	2455239.482	17.65008841	0.00005859530917
Residual	98	13632422.89		139106.356	
Total	99	16087662.37			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	495.0684665	56.55671415	8.753487078	6.10577E-14	382.833508	607.3034251	382.833508	607.3034251
X Variable 1	-10.58382194	2.519237325	-4.20120083	5.85953E-05	-15.58316642	-5.584477458	-15.58317	-5.584477458

Interpretation There is significant impact of cost of capital on the share price of the firm. Significance F value being 0.00005859 Therefore, H0 is rejected and hence, we accept alternate hypothesis.

VII. FINDINGS

No	Hypothesis	Significant Level	Accept/Reject
1	Impact of EVA on Share Price	0.000202	H1 accepted
2	Impact of value of firm on Share Price of firm	0.00000025	H1 accepted
3	Impact of Ko onShare Price	0.00005859	H1 accepted

VIII. CONCLUSION

There is significant impact of EVA, value of the firm and cost of capital on share price of the firm. Capital structure decision is the strategic financing decision which involves deciding the most appropriate mix of equity and long-term debt finance for a firm. Considering the present cash flows as well as expected cash flows firms should come up with a better capital structure to absorb the cost of capital, so that they can create better wealth.

BIBLIOGRAPHY

[1]. Jawade, A. (2014). Capital Structure and its impact on the profitability:- An empirical study for the Pharmaceutical companies with special reference to their market capitalisation. *Abhinav National Monthly Refereed Journal of Research in*, *3*(6).

[2]. Khan.M.Y, J. (n.d.). *Fiancial Management ,text,problems and cases.* (7th ed.). McGraw hill education (India) Private Ltd.

[3]. Kumar S, A. B. (2012). COST ANALYSIS OF FINANCING DECISIONS: A STUDY OF. *ASIA PACIFIC JOURNAL OF MARKETING AND MANAGEMENT REVIEW*, *1*(1).

[4]. Pandey.I.M. (2010). *Financial Management* (10th ed.). Vikas Publishing house.

[5]. Sharma, P. (2015). CREATING AND MEASURING SHAREHOLDERS'VALUE IN INDIAN COMPANIES. *International Journal of Applied Business and Economic Research*, *13*(1).

[6]. Annual Reports of all the companies.