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RETURN ON EQUITY- AN INSTRUMENT FOR DETERMINATION OF CREATION OF RESERVE AND DISTRIBUTION OF DIVIDEND

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ABSTRACT

This is an endeavour to develop an idea about the causes of rise and fall of ROE (Return on Equity) of some reputed and profitable companies in the context of positive and rising growth of earning per share (EPS) and subsequently to develop a strategic level of ROE which the companies should consider for maximisation of wealth of shareholders. Out of many financial parameters ROE, generally, is considered as the most important one from the standpoint of both investors and promoters since it actually determines how effectively the fund of shareholders is being converted into profit. More precisely, it denotes profit per rupee of fund of shareholders used in the enterprise. Therefore depressing ROE may bring about the downfall of maximisation of wealth of shareholders as stock value to some extent connected with ROE since it is connected with earning. It has been noted that excessive growth of reserve may cause the ROE to decrease in spite of rising earnings per share (EPS) because of wider base of net worth (as reserve increases). From the stand point of opportunity cost of capital of retained profit and expected return (in the equity market) of share holders, the companies should strike a balance between ROE and creation of reserve. Concept has been developed in this respect for computation of nature of growth of EPS and reserve that will reveal the way the ROE is heading towards. Dividend distribution should be based on the decision of the company. However as dividend yield usually for a profitable company is quite low, ROE and dividend payout should satisfy the expected market return of shareholders.

KEYWORDS: *ROE, Reserve, Dividend, Earnings Per Share (EPS), Retained Profit.*

Introduction

EPS is an important financial parameter in determining the strength of a company. But it suffers from some limitation. It does not focus the earning with respect to fund employed in the business. ROE on the other hand focuses more on the return of fund employed by shareholders of the company. It discloses the amount of earning per rupee of fund of shareholders used in the business. It also speaks how effectively the fund of the shareholders is used in the business. A declining ROE speaks that the fund of share holders earns at a gradual slower rate with respect to previous year. However the EPS may speak different. The apparent conflicting situation deserves grater analysis. When ROE declines maximisation of wealth of shareholders suffers to some extent as stock value is partly connected with ROE for growing companies. Expected rate of return of shareholders is risk free rate plus some risk premium for investment. In the light of opportunity cost of retained earnings, efforts have been made to focus the desired or expected rate of return of the share holders which companies should adhere to. In the subsequent paragraphs we will discuss the expected return of share holders. It is observed that the rising reserve content or book value occasionally fails to provide adequate impetus to stock price. In other words sentiment in connection with the stock somehow is affected in spite of favourable EPS. Efforts have been made in this paper also to develop an appropriate concept for identification of the conditions when ROE declines or rises and decision on amount of dividend and retained profit.

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Objective of the study

- To determine under which conditions ROE rises or declines with respect to previous year even under favourable and rising EPS situation.
- To develop a strategic concept of maintaining ROE at a level by controlling dividend that will balance the opportunity cost capital of retained earning and expectation of return of shareholders in the stock market.

Concept used in the study

Extensions of common financial parameters like EPS, net profit etc and equations have been used to arrive at a decision.

EPS signifies profit earned per share, therefore EPS concerns with number of shares and net profit for the period under consideration and there does not arise any reason to take into account the reserve and surplus of a business entity. EPS is expressed in rupees per share. ROE on the other hand is expressed as percentage of earning of net profit with respect to net worth. ROE expresses actually the amount earned by a company per rupee of fund invested by share holders.

EPS = Net profit or Profit after tax (PAT) / number of shares …..equation 1

Therefore, EPS x number of shares = PAT ...equation 2

Net worth= equity capital + free reserves.....equation 3

$$ROE = \frac{\text{Net Profit (PAT)}}{\text{Net Worth}} \times 100 \quad \text{equation 4}$$

ROE (in percentage) x net worth = PAT... equation 5

Now equating 2 & 5, we get, EPS x no. of shares = ROE x Net Worth equation 6

Assuming as long as number of shares remains fixed equation 6 becomes

EPS x K_1 = ROE x (Net Worth), [here, K_1 = no of shares (constant)]

= ROE x (Equity + Reserves)

= ROE x (K_2 + Reserves), if number of shares fixed, equity (K_2) remains fixed

Or ROE= EPS x K_1/(K_2 + Reserve)

$$ROE = \frac{EPS \times K_1}{(K_2 + \text{Reserve})} \quad \text{equation 7}$$

From equation 7 it is evident that ROE directly related to EPS if all other factors remain same. It is however inversely related to reserve content of the enterprise if others remain constant.

In real life situation both EPS and Reserve are dynamic in nature. Under dynamic situation following two situations can happen within the limitations.

- ROE will increase with respect to previous year if the ratio increases with respect to previous year. This happens when EPS growth rate > Reserve growth rate, in other words when numerator grows at a faster rate than denominator.
- ROE will decline when denominator grows at a faster rate than numerator. The ratio decreases with respect to previous year. In such case Reserve growth rate > EPS growth rate happens.

This equation 7 helps us to high light an important point on distribution of dividend and transfer of retained profit to reserve Before distribution of dividend a company should devote its heads to decide on how much should be transferred to reserve from profit. Here enterprise should keep in mind the fact that by transferring the profit it does not hurt the return on net worth of shareholders. As we all know cost of retained earnings (K_e) under dividend model = (Dividend in next year/Market price) + g

$$K_e = \frac{\text{Dividend in Rs in next year}}{\text{Current Market Price}} + g$$

g = growth rate of dividend, market price of share is a function of dividend, dividend payout ratio constant.

Cost of retained earnings is the rate of return on dividend foregone by shareholders. Actually if the company would have distributed the earning to shareholders they could have invested the fund in the stocks of the company or similar companies with risk and return at the same stock price so that earning rate is similar to rate of return as proposed by dividend model. It is equal to the income that the shareholders could have otherwise earned by placing these funds in alternative investments. However, determining opportunity cost of shareholders is a tough task. Risk free rate usually is bank fixed deposit rate and is considered as the second best opportunity of average shareholders. Thus expected return of shareholders will be higher of the cost of retained earnings or bank or similar safe fixed deposit rate plus some premium amount for the risk and uncertainty involved in the capital market.

In stock market a popular notion or sentiment usually hovers around investors or speculators. They expect at least 20% annual return in view of the risk associated with investment in stock market. Andrew Sather in January 31, 2017 in his paper hinted that 20% return an investor expected. In India the Sensex value for November 2, 1979 was 123.86 points. On October 30, 2015, 36 years later it closed at 26,656.83 points. This means a return of 16.1% per year, during the period. Hence, over the long-run Indian stocks give 16% per year. In 2017 it is above 30000 ie 17%; CAGR of Sensex up to March 2015 was 15.68%. As actual return suffers some set back due to inflation, the value should be further jacked up by 4-5%; besides premium for risk is also there.

According to Warren Buffet GDP growth plus inflation is somewhat plausible rate of return. From this standpoint it is over 10% now in India. To it if risk factor is added it will be significantly higher. Generally dividend yield associated with any good stock offers a very low return; Nifty dividend yield varies between 1-1.7%. Thus, promoters of companies should keep in mind both cost of retained profit and the expected return that is prevalent in stock market. If the ROE falls below the cost of retained earnings of shareholders (K_e) on transfer of profit to reserve it creates a disappointing sentiment amongst the shareholders and the impact may even suppress the stock price. ROE should be above this value. Basically ROE and cost of retained earnings should be compared while making dividend decision and transferring retained profit to reserve.

Stock dividend or bonus simply transfer of reserve to equity and is not supplementary to cash dividend. However stock dividend is an effort on the part of the company to reward shareholders who in turn may convert the stock to cash through cash market transaction. Here promoters kill two birds with a single arrow as the fund remains within the company. This proposition will continue to provide decision making if nominal changes in equity content occur. However if huge change occurs due to bonus issue or infusion of equity capital the situation will be freshly evaluated.

Method of Study

In order to ascertain the substantiality of the concept the study has been made on the basis of data collected of some reputed companies listed in National Stock Exchange over the period 2012-2017

- Collection of data of earning per share (EPS), for uniformity EPS/face value has been used
- Collection of data of return on equity (ROE)
- Collection of data of reserves and surplus
- Collection of data of Equity
- Collection of data of Debt/Equity (D/E)

Data have been shown in tabular form and then graphical presentation of data has been shown. Next stage involves interpretation of data graph

Source of Data

Data have been collected from secondary reliable source like moneycontrol.com, indiabulls.com

Table 1: Return on Equity in %

	2012	2013	2014	2015	2016	2017
Asian Paints		32.91	30.17	29.41	30.79	25.51
Reliance Industies		11.57	11.37	10.82	11.37	11.37
larsen & Toubro	15.98	15.38	13	11.65	11.57	13.75
ITC		32.99	32.76	30.5	29.26	22.16
PTC India	8.14	7.52	12.4	8.31	12.58	
BHEL	27.89	21.92	10.56	4.24	-2.7	
	14.71	18.36	19.84	18.52	17.16	6.05 (bonus)
HeroMoto Co	55.43	42.31	37.39	36.15	38.9	34.74

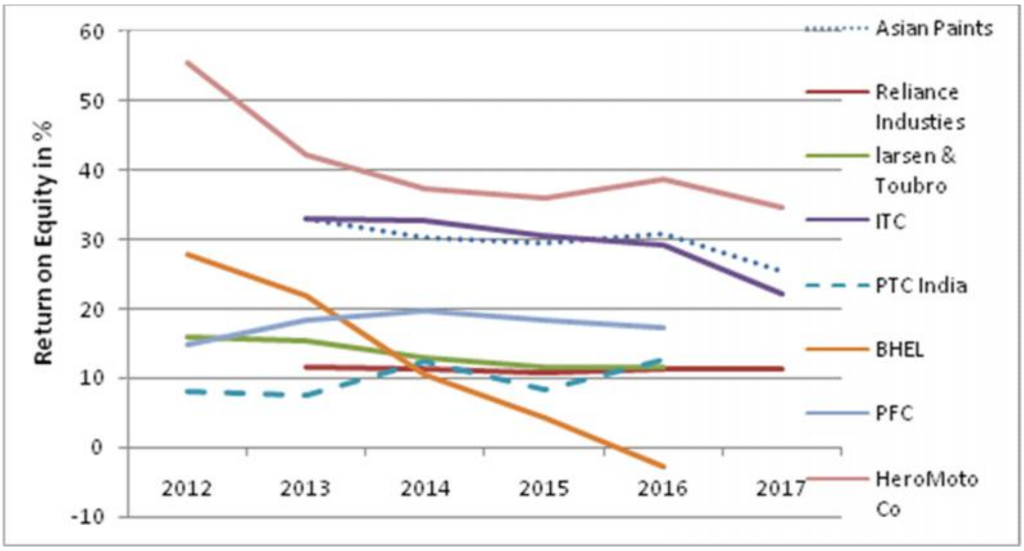
Table 2: EPS in Rs.

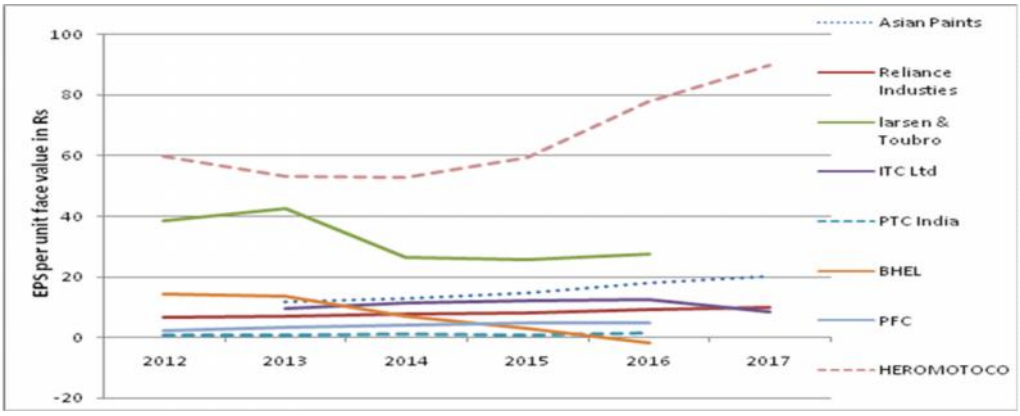
	2012	2013	2014	2015	2016	2017
Asian Paints Re1/-	(103.08)10.3	(116.13)11.61	12.71	14.54	18	20.22
Reliance Industies Rs10/-	66.15	70.65	76.55	80.11	93.78	101.33
larsen & Toubro Rs2/-	76.81	84.79	52.97(79.5)	51.33(77)	54.69(82.04)	
ITC Re1/-		9.69	11.22	12.11	12.35	8.5 (12.75)
PTC India Rs10/-	6.92	6.71	12.19	8.66	14.54	
BHEL Rs2/-	28.96	27.35	14.31	5.93	-3.66	
PFC	23.62	33.62	41.38	45.49	46.85	bonus
HEROMOTOCO Rs2/-	119.09	106.07	105.29	118.41	154.93	179.49

Table 3: EPS per Unit Face Value in Rs.

	2012	2013	2014	2015	2016	2017
Asian Paints		11.61	12.71	14.54	18	20.22
Reliance Industries	6.615	7.065	7.655	8.011	9.378	10.133
Larsen & Toubro	38.405	42.395	26.48(39.74)	25.7(38.55)	27.35(41.03)	
ITC Ltd		9.69	11.22	12.11	12.35	8.5
PTC In9dia	0.692	0.671	1.219	0.866	1.454	
BHEL	14.48	13.675	7.155	2.965	-1.83	
PFC	2.362	3.362	4.138	4.549	4.685	
HEROMOTOCO	59.545	53.035	52.645	59.205	77.465	89.745

Figures in the bracket shows values had there been no bonus





Following Table 4: Describes the yearly percentage change of the parameters with remarks

	2013	2014	2015	2016	2017	REMARKS
1.Asian Paints						When reserve growth > EPS growth ROE declines and vice versa
EPS	12.6	9.6	14.1	24.1	12.2	
ROE	-8.06	-8.3	-2.5	4.7	-17.1	
Reserve	24	20	18	19	36	
2. Reliance Industries						Same as above
EPS	6.8	8.4	4.7	17.1	8.1	
ROE	-2.8	-1.7	-4.8	5.1	0.0	
Reserve	9.04	9.83	10.18	11.71	8.35	
3. ITC Ltd						Same as above
EPS	20.4	15.8	7.9	2.0	-31.2 **(3.2)**	
ROE	2.0	-0.7	-6.9	-4.1	-24.3	
Reserve	19.7	18.3	17.4	7.1	36.7	
4. Larsen & Toubro						Same as above
EPS	10.4	-37.5**(6.2)**	-3.1	6.5		
ROE	-3.8	-15.5	-10.4	-0.7		
Reserve	15.3	11.2	8.5	7.6		
5. PTC India						Same as above
EPS	-3.03	81.67	-28.96	67.90		
ROE	-7.62	64.89	-32.98	51.38		
Reserve	5.77	11.75	6.64	12.09		
6. BHEL						Same as above
EPS	-5.6	-47.7	-58.6	-161.7		
ROE	-21.4	-51.8	-59.8	-163.7		
Reserve	20.6	8.7	3.2	-3.1		
7. PFC						Same as above
EPS	42.3	23.1	9.9	3.0		
ROE	24.8	8.1	-6.7	-7.3		
Reserve	17.3	14.7	18.7	11.6		
8.HEROMOTOCO						Same as above
EPS	-10.9	-0.7	12.5	30.8	15.9	
ROE	-23.7	-11.6	-3.3	7.6	-10.7	
Reserve	16.9	12.4	16.4	21.7	29.9	

*Bold letters indicates actual change had there been no bonus

Dividend table of these Companies

Dividend in % & RS	2012	2013	2014	2015	2016	2017
Asian Paints	400% Rs40/-	460% Rs 46/-	530% Rs5.3/-	610% Rs 6.1/-	750% Rs 7.5/-	
Reliance Industries	85% Rs 8.5/-	90% Rs 9/-	95% Rs 9.5/-	100% Rs 10/-	105% Rs 10.5/-	110% Rs 11/-
Larsen & Toubro	825%	925%	**1069%**	**1219%**	**1369%**	**1575%**
ITC Ltd	450% Rs 4.5/-	525% Rs5.25/-	600% Rs 6.0/-	625% Rs 6.25/-	850% Rs8.50/-	**712.5% Rs 7.13**
PTC India	15% Rs1.5/-	16% Rs1.6/-	20% Rs2.0/-	22% Rs2.2/-	25% Rs2.5/-	
BHEL	320% Rs6.4/-	270% Rs5.4/-	141.5% Rs2.83/-	58% Rs1.16/-	20% Rs0.4/-	
PFC	60% Rs6/-	70% Rs7/-	90% Rs9/-	91% Rs9.10/-	139% Rs13.9/-	
HEROMOTOCO	2250% Rs45/-	3000% Rs60/-	3252.5% Rs65.05/-	3000% Rs60/-	3600% Rs72/-	

Bold letters indicates had there been no bonus, in such case actual dividend is different. Adjustment has been made for clear comparison.

Table of ROE and cost of retained profit or opportunity cost of retained profit

	CAGR of dividend growth (g) upto 2016	Assuming Dividend in 2017 in RS	average price in Rs = average P/E x EPS in 2016	K_e cost of retained profit =(Div/Price) +g	ROE in 2016	ROE in 2017	Remarks For 2017
Asian Paints	15%	8.6	58.4 x 18=1051.20	0.7%+15% =15.7%	30.8%	25.51%	ROE >K_e & over 20%
Reliance Industries	5%	11	10.2 x 93.78=956.56	1.09%+ 5% = 6.09%	11.4%	11.37%	ROE >K_e & below20%
Larsen & Toubro	14%	31.24	27 x 54.69=1476.6	1.9% + 14% =15.9%	11.6%	13.75	ROE<K_e & below 20%
ITC Ltd	10%	9.35	26.6 x 12.35=328.51	2.6% + 10% =12.6%	29.3%	22.16%	ROE >K_e & over 20%
PTC India	14%	2.85	9.8 x 8.31=81.44	3% + 14% = 17%	12.6%		
BHEL	negative	0	133*	Less than 0.3%	-2.7%		
PFC	23%	17.1	174.8**	8% + 23% = 31%	17.2%	6.05%	ROE<K_e & below 20%
HEROMOTOCO	14%	82.1	17.7 x 154.93 =2742.26	2.6% + 14% =16.6%	38.9%	34.74%	ROE >K_e & over 20%

*As eps negative, we have used average of high and low values of 2016, ** we have used average of high and low values of 2016 because of data unavailability.Average stock price of 2016 on the basis of average P/E of 2016 (https://www.equitymaster.com/stock-research/financial-data/PFC/POWERFINANCECORPORATIONLTDDetailedShareAnalysis?utm_source=researchit&utm_medium=website&utm_campaign=factsheet&utm_content=search)

Interpretation of Data in Various Tables

If we analyse the data with respect to each enterprise the following message develops

	The message
Asian Paints	ROE > cost of retained profit, though ROE above 20%, over years gradually decreasing inspite of rising EPS, the reserve growth is very high, Reserve78 times the equity (2017). The company may distribute more dividend to shareholders. Growth of reserve is much higher than dividend growth. Almost zero debt equity company
Reliance Ind	ROE > cost of retained profit, however, ROE very low (below 20%), huge reserves 88 times the equity (2017) and its high growth rate. The company should distribute more as cash dividend at higher rate or may turn into zero debt equity company gradually with the huge reserve content. With decline of reserve ROE may increase & stock price may increase further
Larsen & Toubro	ROE < cost of retained profit; ROE is below 20% and declining, huge reserves, 268 times the equity (2017). Company should distribute more cash dividend to reduce the growth of reserve & enhance the ROE. Company should endeavour to increase the Profit / networth ratio if it intends to keep reserve. With high reserve the debt equity ratio can be lowered by reducing the debt. However disappointment may develop because of lower ROE
ITC Ltd	ROE > cost of retained profit; ROE though above 20% yet it is showing declining signs, enough scope for higher dividend. Reserve 37 times the equity (2017). Zero debt equity company
PTC India	ROE below 20% but rising with fluctuation, the company is in rising stage, may concentrate on reserve, however reserve in 2017 almost 12 times equity, may increase dividend rate significantly
BHEL	ROE declined sharply as EPS declined also , both negative in 2016, dividend declined gradually, because of past good performance the company has good reserve more than 60 times the equity and may tide over the critical time in 2016-2017. Reserve 65 times the equity (2017)
PFC	ROE less than 20%, reserve 12 times the equity base in 2017, dividend grew slowly, because write-off of bad debt performance declined in 2017. In 2016 bonus declared, in 2017 another bonus on foot. Shareholders rewarded by bonus rather than high dividend. Once turn around happens the company will emerge as attractive stock.
Hero Moto Co	ROE much higher than 20% but declining, reserve 257 times the equity base, very high dividend rate. company should spend more on dividend to raise the ROE as declining ROE reveals earning with respect to net worth slowly declining

Inference and Discussion

The aforesaid tables disclose the fact that when ever reserve growth exceeds the growth rate of EPS the ROE declines and vice versa and in consonance with the concept mentioned herein earlier. Regarding distribution of dividend, ROE, opportunity cost of retained earning and dividend growth rate are to be considered very carefully. As dividend yield ,usually, is very low the higher growth rate of dividend supplies fuel to opportunity cost of retained earning. So long dividend growth rate is feeble the lower opportunity cost of retained earning (as the case of Reliance Industries) provides relief for companies with low ROE. However, if ROE is less than opportunity cost of retained earning it may dampen the spirit of investors and stock price. In such case bonus issue (case of Larsen & Toubro) may rescue the depressed sentiment of the investors when investors may derive the benefit from cash market by sale of stock or enjoy dividend on higher number of shares in subsequent years.

In this connection the view of world famous industrialist Warren Buffet can be cited (http://www.businessinsider.in/Warren-Buffett-Does-A-Beautiful-Job-Of-Explaining-Dividends-And-Why-Berkshire-Isnt-Paying-One/articleshow/21299788.cms). If the company can compound the retained earning at a much higher rate than the investor the company may retain the earning instead of dividend distribution. Actually his Berkshire Hathaway retained all earnings in 2011.As preference for cash in current situation is more than future cash to share holders a balance should be struck between dividend rate, retained earning and ROE and many shareholders in the aforesaid case desired some dividend from Warren Buffet's company. In companies with high opportunity cost of retained earning and low or no dividend , if share holders desire to earn cash instead of dividend the share holders exercise the option of selling shares in the cash market and in the process their stake in the company declines if bonus shares are not considered.

Conclusion

The model developed in this paper indicates that whenever growth of reserve exceeds the growth of earning per share, the growth of ROE of the enterprise slows down and when growth of earning per share exceeds the growth of reserve the ROE becomes jubilant. Regarding distribution of dividend, the decision of the company is final since various factors are associated with the business and these are to be complied with. As preference for present dividend is more than future ones a acompany should pay maitainable handsome dividend to shareholders. However efforts will be made to keep the ROE in an attractive zone (preferably above 20% in indian situation) in the context of both opportunity cost of retained earning and and expected return of shareholders. In this context one thing can be said as nothing is universally and eternally true all our observation may not be true for all times to come with change in situation.

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⇒ average inflation 6.93%

Table: Average inflation India (CPI) - by year

Average Inflation	Inflation	Average Inflation	Inflation
CPI India 2017	1.97 %	CPI India 2007	6.39 %
CPI India 2016	4.97 %	CPI India 2006	5.79 %
CPI India 2015	5.88 %	CPI India 2005	4.25 %
CPI India 2014	6.37 %	CPI India 2004	3.77 %
CPI India 2013	10.92 %	CPI India 2003	3.81 %
CPI India 2012	9.30 %	CPI India 2002	4.31 %
CPI India 2011	8.87 %	CPI India 2001	3.77 %
CPI India 2010	12.11 %	CPI India 2000	4.02 %
CPI India 2009	10.83 %	CPI India 1999	4.84 %
CPI India 2008	8.32 %	CPI India 1998	13.17 %

http://www.inflation.eu/inflation-rates/india/historic-inflation/cpi-inflation-india.aspx average inflation 6.93%.

❍☯❍