

## Determinants of Shareholder's Behavioural Finance in select Private Companies of Power Industry in India

**Dr. K.C.Biswal**

Associate Professor  
Management Deptt., Tura Campus  
NORTH EASTERN HILL UNIVERSITY  
([kcbiswal@rediffmail.com](mailto:kcbiswal@rediffmail.com))

**Junybirth T Sangma**

Research Scholar  
Management Deptt., Tura Campus  
NORTH EASTERN HILL UNIVERSITY  
([junyb\\_007@yahoo.co.in](mailto:junyb_007@yahoo.co.in))

### Abstract:

Behavioral Finance (BF) is the study of the investor's behavior as psychological factors that influence to the financial markets. In other word, BF is directly related with the investment decisions of the investors. Hence Behavioral Finance of the investor is largely influenced by psychological and emotional factors. Fear, panic, anxiety, envy, euphoria, greed, satisfaction, ambition or vanities are the human emotions that interfere in certain proportions in the investment decision (Birau, 2011). Financial markets are efficient (Fama, 1998; Barberis and Thaler, 2003; and Müslümov et al, 2004) and informationally inefficient (Ritter, 2003) and the investors are assumed as rational (Classical Finance). Behavioural finance is the combination of Individual behavior and market phenomena (Fromlet, 2001); psychological decision process in relation to financial markets (Talangi, 2004) and the study of psychological influence (Sewell, 2005). The present study identifies the determinants that contribute in supporting the Behavioural Finance as an alternate solution for present financial constraints and future growth in Indian power sector. The Indian power sector characterized by loss making industry, less attractive for investment, external financial constraints and mostly the liquidity position impacted by the irregular payment from the consumers and other parties, have chosen for the study. The main focus is to analyze the trends of the corporate performance with the Behavioural Finance. Hypotheses have also been framed to test the significant relationship between the Behavioural Finance and the firm's performance and to test the significant relationships with Behavioural Finance and the various proposed determinants. The secondary data is collected for a period of 15 years i: e 2000-01 to 2014-15 of TATA Power, Reliance Infrastructure and Jindal Power Ltd. The Multiple regression is adopted to analyze the impact of selected determinants on Shareholder's Behavioural finance (ROE) in the study and fit by the method of coefficient of determination ( $R^2$ ), individual regression coefficient ("T") value, "F" value, correlation, trend analysis, graphs and charts are the statistical techniques to be used for the purpose of the analysis of the data.

**Key words:** Behavioral Finance, Psychological Factors, Efficient Market, Rational Investors, Determinants, Return on Assets and Return on Equity etc.

### Introduction:

Behavioral Finance (BF) is the study of the investor's behavior as psychological factors that influence to the financial markets. In other word, BF is directly related with the investment decisions of the investors. Hence Behavioral Finance of the investor is largely influenced by psychological and emotional factors. Fear, panic, anxiety, envy, euphoria, greed, satisfaction, ambition or vanities are the human emotions that interfere in certain proportions in the investment decision (Birau, 2011). Financial markets are efficient (Fama, 1998; Barberis and Thaler, 2003; and Müslümov et al, 2004) and informationally inefficient (Ritter, 2003) and the investors are assumed as rational (Classical Finance). Behavioural finance is the combination of Individual behavior and market phenomena (Fromlet, 2001); psychological decision process in relation to financial markets (Talangi, 2004) and the study of psychological influence (Sewell, 2005). According to Merikas *et al.*,(2003) in his study analyze the factors that influence Greek investor behavior in Athens Stock Exchange and found that corporate earnings, financial statement conditions and its status in the industry are the most important factors that significantly impact their behavior. Under this study, Return on Equity (ROE) has been applied to measure the behavioural finance of the shareholders in select private companies of Power Industry in India. The degree of ROE will directly reflect the preference of the Shareholder's investment decision i.e higher ROE will be significantly proportionate to high preferences of shareholders and vice versa. As the Indian power sector characterized by loss making industry, less attractive for investment, external financial constraints and mostly the liquidity position impacted by the irregular payment from the consumers and other parties, the present study has been undertaken to analyse and determine the degree of shareholder's behavioural finance towards the power sector. The main focus is to analyze the trends of the corporate performance and other proposed determinants with the shareholder's Behavioural Finance (ROE). The present study identifies the determinants that contribute in supporting

the Behavioural Finance as an alternate solution for present financial constraints and future growth in Indian power sector.

The following exhibit the analysis of Shareholder's Behavioural Finance in the present study:

1. Return on Equity (ROE): ROE has been applied to measure the Shareholder's Behavioural Finance. ROE have been assumed as the preference of the shareholders since ROE is one of the most vital variables that are used by the investors to assess the profitability of the corporate before investing (Komala and Nugroho, 2013). Higher ROE mean higher preference and lower ROE mean less preference.

2. Reforms: It comprises of mainly the tax policies imposed on the investment activities of the shareholders to analyze and determine the Shareholder's Behavioural Finance. Capital market reforms and SEBI policy and guidelines incline to the welfare of the shareholders are also a theoretical part to support in determining the preference of the investment decision. Djankov., et.al (2009) revealed the evidence that effective corporate tax rates have a large and significant adverse effect on corporate investment and entrepreneurship. They further concluded that higher effective corporate income taxes are also associated with lower investment in manufacturing.

3. Corporate performance: under this determinant profit after tax as a part of the corporate profitability will be tested to evaluate its correlations towards the shareholder's behavioural finance.

4. Plough back of profit (Corporate Saving): This is also one of the factor which the shareholders are assume to react and response based on the corporate policies in retaining the earnings or the profit retention for future investment and growth.

5. Dividend: It is specifically related with the corporate policy on dividend payment out of the profit.

6. Return on Investment: This variable will be significantly and directly linked to the momentum of the market activities.

### **Conceptual Framework**

Shareholder's Behavioural finance is a function of various perspective variables which support in contributing towards corporate growth. It can also be define as the factors which are directly correlated with the independent variables that play an important role and impart a significant relationship which helps in favour of contributing corporate future growth. The better the corporate score on the proposed independent variables the higher the shareholder's preferences will achieved and thereby impact the corporate growth by the favouring investment decision. The present study assumed that profitability of the corporate will be preferred and accepted by the shareholders to favour their investment decision i.e, increase in profitability will enhance the shareholder's investment decision. Hence, Return on Equity (ROE) which highlights the profitability of the corporate have been applied to quantitatively and numerically develop the behavioural finance of the shareholders in select private companies of power industry in India.

### **Tata Power Co. Limited**

The Tata Power Co. Ltd is a Mumbai based company incorporated in the year 1919, is a Large Cap company (having a market cap of Rs 20,514.58 Cr) operating in Power sector (that generates and supply electricity). As on 31-March-2015, the company has a total of 2,704,625,254 shares outstanding. At present, the current capacity of Tata Power is 8,613 MW, second largest private power producer (Thakkar, 2014) and it has plans to add 18,000 MW by 2022. The company had experienced a continued nonpayment by the power discoms of Rs 96.29 cr in a timely manner and non-availability of this payment security and finds it difficult to manage payment for its obligations to buy fuel and discharge its various obligations

### **Reliance Infrastructure Limited**

The Reliance Infrastructure Ltd formerly known as Reliance Energy is also a Mumbai based company was founded and came into existence when it took over BSES in the year 2002. The company is a Mid Cap company (having a market cap of Rs 10903.57 Cr) operating in power sector and has a total of 262,990,000 shares outstanding. The company has witnessed a difficult financial condition as it has not been allowed to recover around Rs 10,000 crore in losses due to increase in power purchase cost and low tariff. According to power experts, cost of buying power has increased by around 300 per cent since 2002 though the retail tariff has risen by only around 90 per cent which has resulted in accumulation of large recognized but unrecovered revenues of over Rs 15,000 crores from consumers (Singh, 2014).

### **Jindal Steel and Power Limited**

Jindal Steel & Power Ltd., incorporated in the year 1979, is a Mid Cap company (having a market cap of Rs 6335.71 Cr.) operating in Iron and Steel sector with its head quarter at New Delhi and Corporate address at Haryana. Power which contributed Rs 978.71 Cr to Sales Value (6.94% of Total Sales). At present it operates Jindal Tamnar Thermal Power Plant a **1000 MW** (4x250 MW) coal-based thermal power plant in Raigarh district in state of Chhattisgarh. This plant is fully functional. As on 21

January 2014, the company had 7,189 employees, out of which 271 were women (4%) and 7 were employees with disabilities (0.1%). During the FY 2013-14, it incurred INR 5.52 billion on employee benefit expenses. Financial reports of Net profit by -310.6 crore in the year march ending 2015 is of major concern and reflects the financial crisis in the corporate power sector.

Apart from the above stated financial constraints faced by the private power generating sectors on the grounds of irregular payment by the power discoms and the recognized- but- unrecovered dues from the customers etc., the Indian power industry as a whole had witnessed a total funding gap of Rs.4, 216 billion [close to 40% of the total fund requirement] as estimated by the Working Group on Power for the 11<sup>th</sup> Five Year Plan {2007-12} (Mukherjee and Pratap, 2010). In power sector, investment is a major problem as the foreign investors are also in deep crisis; the example of the Enron Company's bankruptcy is a major threat to the India's power sector development as foreign investors would be more cautious now to invest in India. The biggest of these is the financial viability of the state distribution companies, which suffer large losses across the distribution system, about one-third of that loss is technical, but the rest is either given away for free or with high subsidies to farmers, or lost to pilferage. Hence, in order to meet the fund requirements of Indian power sector with its external financial constraints, irregular payment of bills by the customers and the subsidies from the authority etc, mobilization of the sources by way of attracting the Shareholder's Behavioural finance is a need of this present study.

#### **Literature Review:**

Behavioural finance is part of finance that seeks to understand and explain the systematic financial market implications of psychological decision processes. Behavioural finance is the combination of Individual behavior and market phenomena ( Fromlet, 2001); psychological decision process in relation to financial markets (Talangi, 2004) and the study of psychological influence (Sewell, 2005). According to Mathews (2005) Behavioural finance related with Decision making can be defined as the process of choosing a specific investment from a number of alternatives. Helen and Simon (2000) termed the behavioral finance as new and emerging vision in the publications of finance during the 1990s and raised its origin some 150 years ago citing the publication of MacKay in 1841, "*The Delusions and the madness of crowds*" where it talked about how various elements have the tendency to create panic and reactions amongst groups and individuals. Behavioral finance is that part of academic finance which studies people's buying and selling behavior of stocks (Islam, 2012). Kumar (2013) analyze Investors' preference for various investment alternatives particularly shares and mutual funds in Agra (India) and concluded that Investors prefer liquidity and return as an important criteria for investment consideration. Barber and Odean (2001) study the investment behavior of men and women by analyzing the behavior of above 35000 investors during the six-year period and found out that on average men trade 1.5 times more frequently and earn 1% less than women. Further the larger gender gap for single men and women was also found that single men trade 67% more often than single women and earn 1.5% less than single women. Gallimore and Gary (2002) examined the role of investor sentiment in property investment decision- making and the results suggested that half of the respondents rated sentiments as essential to their decision making. Hoseini (2003) revealed that the process of decision making and the perception influence the financial investment of the investors. Selden (1912) also made a striking contribution to the field of behavioral finance through the book called "*Psychology of the stock market*" in which the author directly applied the concepts, theories and arguments of psychology to explain the stock market movements. A financial market is efficient (Fama, 1998; Barberis and Thaler, 2003; and Müslümov et al, 2004) and informationally inefficient (Ritter, 2003) and the investors are assumed as rational (Classical Finance). Babcock and Loewenstein (1997) termed the investors as self-serving bias as they tend to avoid the facts that contradict the way they want to reach and embrace the facts that favour their own view points, where as Zuckerman (1979) termed the investors as biased self-attribution as they tend to lame failures on others and attribute successes on their own ability. Fear, panic, anxiety, envy, euphoria, greed, satisfaction, ambition or vanity are the human emotions interfere in certain proportions in a financial investment decision making (Birau, 2011). Chopra, Lakonishok, and Ritter (1992) provided compelling evidence in support of the idea that investors make irrational forecasts of future cashflows. Goetzmann and Kumar (2003) showed that individual investors who are young and less wealthy hold more under-diversified portfolios, suggesting that they may exhibit stronger behavioural biases. Raza (2014) study on individual and institutional investor and found that individual investors are more strongly driven by the vagaries of their behavior while making investment decisions than the institutions. Further it was revealed that the institutional investors also follow behavior finance like Capital asset pricing model and portfolio theory of investment for making investments and concluded that that behavior finance has a great future for individual investors, considering the fact that more and more individual investors are entering the market.

### Objectives of the Study

The present study proposes to attempt in determining the Shareholder’s behavioural finance in select private companies of Power Industry in India and also seeks to examine the trend of corporate performance, plough back of profit (Corporate Saving), dividend Reforms (tax policy) and return on investment pursued by the sample firms during the study period. Further, the present study will be undertaken to achieve the following specific objectives:

1. To analyze the trends of Return on Equity in private power generating companies in India.
2. To examine the relationship between ROE and Tax reforms, corporate performance (PAT), plough back of profit (Corporate Saving), dividend and Return on Investment (ROI).
3. To find out and analyze the determinants of shareholder’s behavioural finance (ROE).

### Hypotheses

The present study seeks to identify and determine the relative significance of the selected number of factors of the shareholder’s behavioural finance with the help of data relating to selected sample companies, in course of our analysis the following hypothesis are proposed for testing.

H1: There is a prospective relationship with ROE and Corporate performance, plough back of profit (Corporate Saving) and Return on Investment (ROI)

H2: There is a significant relationship with ROE and Tax and dividend.

### Research Methodology

**Data collection:** The secondary data will be used for the purpose of the study. The sources of secondary data are the annual report of selected sample companies (2000-01 to 2014-2015), published and unpublished research papers, dissertations, books and journals have been collected for purpose of the study. More specifically, the annual reports of the companies have constituted the major source of data.

**Period of coverage:** The proposed study covers a period of 15 years from 2000-01 to 2014-15 for determinants of Shareholder’s behavioural finance of private power generating companies in India.

**Population:** Out of which, purposively only 3 private power generating companies, namely; Tata power Ltd., Reliance Infrastructure Ltd. and Jindal Steel & Power Ltd. have been selected for the present study.

### Study Design and Techniques:

The analysis of Shareholder’s Behavioural Finance attempted here in this study with a special focus to Tata Power Limited, Reliance Infrastructure Limited and Jindal Power Limited is a micro time series covering a time period of 15 years i.e. from (2000-01) to (2014-15). The analysis of the study has mainly been divided into two parts. The first part of the analysis deals with the study of the trend of corporate profitability with the help of the sample data. The second part of the study however attempts to examine the impact of a selected number of factors of independent variables of the sample firms through the application of multiple regression analysis.

The multiple regression equations is used in the study to analyze the shareholder’s behavioural finance and fit by the method of coefficient of determination ( $R^2$ ), individual regression coefficient, “T” value, “F” ratio, correlation, trend analysis, graphs and charts are the statistical techniques to be used for the purpose of the analysis of the data.

For analyzing the shareholder’s behavioural finance, various empirical studies have adequately been referred and the statistical model is used to analyze the following proposed determinants of Shareholder’s Behavioural Finance

$$ROE_t = x0_t + y1 Cp_t + y2 Pbp_t + y3 Div_t + y4 R(t)_t + y5ROI + y6Sp + u_t \dots\dots\dots(1)$$

Where;

- $x0_t$  = constant
- $y1 \dots\dots y6$  = regression coefficients
- $ROE_t$  = Return on Equity
- $Cp_t$  = Corporate performance (Profit after Tax)
- $Pbp_t$  = Plough back of profit (Corporate Saving)
- $Div_t$  = Dividend
- $R(t)_t$  = Reforms (tax)
- $ROI_t$  = Return on Investment
- $U$  = Error term

Subscripts “t” denote time period.

Here Eq. (1) discloses that Shareholder’s Behavioral Finance by ROE is linearly dependent on factors like Reforms (Tax) [ $R(t)$ ], Corporate performance ( $Cp$ ), Plough back of profit [Corporate Saving] ( $Pbp$ ), Dividend ( $Div$ ) and Return on Investment ( $ROI$ ) of the same firm.

### Specification and Measurement of Variables

Needless to emphasize that all the variables reflected in both Eq. (I) are important factors of Shareholder’s Behavioural Finance (ROE) and as such needs proper attention. The specification and measurement of these variables are discussed below:

**1. Corporate performance:**

Under this determinants, profit after tax as the independent variables have been evaluated.

**2. Plough back of profit (Corporate Saving):**

This is also one of the factors which the shareholders are assumed to react and response based on the corporate policies in retaining the earnings or the profit retention for future investment and growth. Eriotis *et al.* (2000) concluded that firms which prefer to finance their investment activities through self-finance (internal funds) are more profitable than firms which finance investment through borrowed capital.

**3. Dividend:**

It is specifically related with the corporate policy on dividend payment out of the profit. Dividend payment tends to be more volatile in the emerging markets (Kurniasih *et al.*, 2011) and is one of the variables that is preferred, interested and is curiously taken care by the investors while they invest in the emerging market.

**4. Reforms:**

It comprises of mainly the tax policies imposed on the investment activities of the shareholders to analyze and determine the Shareholder’s Behavioural Finance.

**5. Return on Investment:**

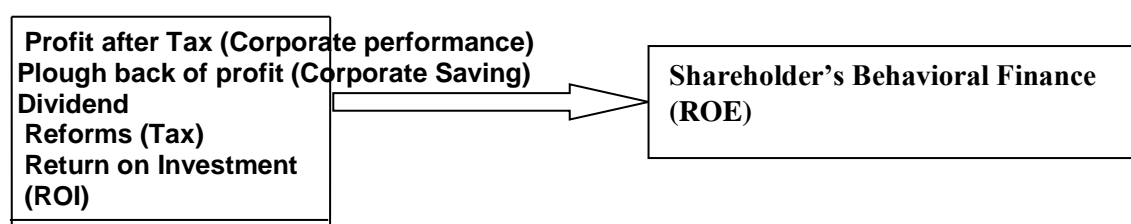
This variable will be significantly and directly linked to the momentum of the market activities. The investors invest in companies in order to get a return in the form of yield or capital gain. Return is the result obtained from the investment (Jogiyanto, 2009). If ROE increases, the investors will be more interested to invest their funds into the company, so that the stock prices tend to rise.

All the above factors have been used in the present study as important explanatory variables in the estimated regression equations. It is believed that the analysis will throw the light on whether the explanatory variables in the estimated regression equations represent the dominant factors of Shareholder’s behavioural finance and whether the estimated parameters are reasonably reliable.

**Variables:** Independent variables in this study involve Reforms (tax), corporate performance (PAT), plough back of profit (Corporate Saving), dividend and Return on Investment. Similarly dependent variable involves Shareholder’s Behavioural Finance (ROE). Fig. 1 below represents the conceptual framework of relationship between explanatory variables and corporate saving.

**Independent Variables:**

**Dependent Variable:**



**Tools and Techniques:** The collected data will be analyzed in a number of closely related operations according to the nature of information by using various tools and techniques, both accounting and statistical. As such, the present study will be carried out by analyzing the annual time-series data of all the sample companies separately for the period 2000-01 to 2014-15. The data on relevant variables will be taken in percentage calculated from the amount of crores of rupees while estimating the relationships. The entire data will feed to the system and use the Statistical Package called SPSS for estimation of correlation and various regression parameters.

The multiple regression is adopted to analyze the impact of selected determinants on Shareholder’s Behavioral finance (ROE) in the study and fit by the method of coefficient of determination (R<sup>2</sup>), individual regression coefficient (“T”) value, “F” value, correlation, trend analysis, graphs and charts are the statistical techniques to be used for the purpose of the analysis of the data.

**Limitations**

The study is based on the secondary data collected from the various volumes of Company Annual Report for the sample companies. Thus the study possesses all the inherent limitations of financial data. Therefore, limitation of the small sample is also very much prevalent in this study. A time constraint is also a major concern under this study. Thus, the limitation of secondary data

and financial statements cannot be ruled out in this study. In spite of limitations, the financial statements remain to be the main sources of data for an in-depth study of firm's performance.

**Data Analysis:**

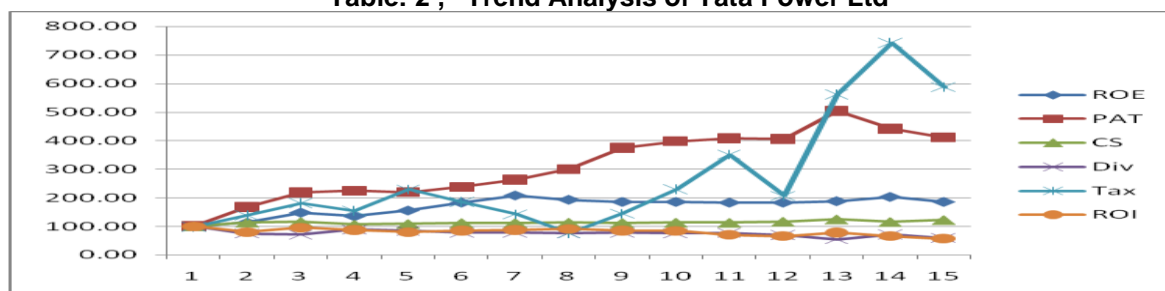
**TATA POWER LTD.**

**Table: 1 (Rs in.000 lacs)**

Details of Return on Equity, Profit after tax, Plough back of profit (Corporate savings), Dividend, Tax and Return on Investment of Tata Power Ltd						
Year	ROE	PAT	CS	Div	Tax	ROI
	Base %	Base %	Base %	Base %	Base %	Base %
2000	100.00	100.00	100.00	100.00	100.00	100.00
2001	112.50	167.67	113.66	75.15	139.92	80.56
2002	147.50	218.20	115.64	71.56	181.32	95.59
2003	135.00	224.07	106.10	88.90	155.24	87.93
2004	155.00	219.40	108.36	84.79	229.67	80.43
2005	182.50	237.62	111.96	78.25	186.20	85.63
2006	207.50	263.13	111.97	78.22	143.04	87.62
2007	192.50	300.00	113.11	76.15	76.65	92.03
2008	185.00	374.57	112.23	77.76	144.87	85.48
2009	185.00	397.45	113.21	75.98	230.86	84.42
2010	182.50	408.42	112.76	76.80	351.65	71.19
2011	182.50	405.76	116.59	69.82	207.25	66.66
2012	187.50	504.13	124.65	55.16	561.54	78.72
2013	202.50	441.62	115.57	71.68	742.87	66.13
2014	185.00	411.19	122.53	59.02	587.87	57.51

Source: Author Compiled.

**Table: 2 , Trend Analysis of Tata Power Ltd**



Interpretation: In the year 2002, the ROE was 147.50, in the year 2004, the ROE was 155.00, in 2005, the ROE was 182.50, 207.50 in 2006, 192.50 in 2007 and 202.50 in 2013. This is good sign for the organization. The higher the ROE, the more capable the companies are paying off its obligations and also encourage to outside investors and shareholders for investment in company's share capital.

**Tata Power Ltd:**

**Table-3**

Correlations							
		ROE	PAT	CS	Div	Tax	ROI
ROE	Pearson Correlation	1	.763**	.574*	-.574*	.427	-.448
	Sig. (2-tailed)		.001	.025	.025	.112	.094
	N	15	15	15	15	15	15
PAT	Pearson Correlation	.763**	1	.758**	-.758**	.702**	-.683**
	Sig. (2-tailed)	.001		.001	.001	.004	.005
	N	15	15	15	15	15	15
CS	Pearson Correlation	.574*	.758**	1	-1.000**	.631*	-.622*
	Sig. (2-tailed)	.025	.001		.000	.012	.013
	N	15	15	15	15	15	15

Div	Pearson Correlation	-.574*	-.758**	-1.000**	1	-.631*	.622*
	Sig. (2-tailed)	.025	.001	.000		.012	.013
	N	15	15	15	15	15	15
Tax	Pearson Correlation	.427	.702**	.631*	-.631*	1	-.739**
	Sig. (2-tailed)	.112	.004	.012	.012		.002
	N	15	15	15	15	15	15
ROI	Pearson Correlation	-.448	-.683**	-.622*	.622*	-.739**	1
	Sig. (2-tailed)	.094	.005	.013	.013	.002	
	N	15	15	15	15	15	15
**. Correlation is significant at the 0.01 level (2-tailed).							
*. Correlation is significant at the 0.05 level (2-tailed).							

The above correlations table shows the degree of relationship between dependent and independent variables and its correlation between Return on Equity, Profit after tax, plough back of profit, Dividend, Tax and Return on Investment. It indicates the degree of high and low significant between all the variables. Therefore, the above reveals that there is slightly strong relationship between ROE and PAT. Further, there is a moderate relationship among plough back of profit, dividend and the dependent variable and found that less likely relationship among the ROI, Tax and the dependent variable.

#### Tata Power Ltd:

#### Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.763 <sup>a</sup>	.582	.550	21.64885	.582	18.104	1	13	.001	
2	.763 <sup>b</sup>	.582	.512	22.53169	.000	.001	1	12	.973	
3	.778 <sup>c</sup>	.606	.498	22.85738	.024	.660	1	11	.434	
4	.779 <sup>d</sup>	.607	.449	23.94228	.001	.026	1	10	.876	.897

a. Predictors: (Constant), PAT

b. Predictors: (Constant), PAT, CS

c. Predictors: (Constant), PAT, CS, Tax

d. Predictors: (Constant), PAT, CS, Tax, ROI

e. Dependent Variable: ROE

**Dependent Variable (Return on Equity):** The statistical significant can be verified by the R square, standard error test, F-statistics, Sig. F Change and the Durbin-Watson statistics. In summary, the econometric test applied through SPSS shows the significant statistical relationship between the dependent variables and the independent variables from the above model. The above regression analysis reveals that there is positively significant among ROE, PAT, plough back of profit and Tax and there is negatively significant among plough back of profit and dividend and ROI and furthermore, the above model showed that the independent variables affect the dependent variables by 60.7%.

#### Reliance Infrastructure Ltd.:

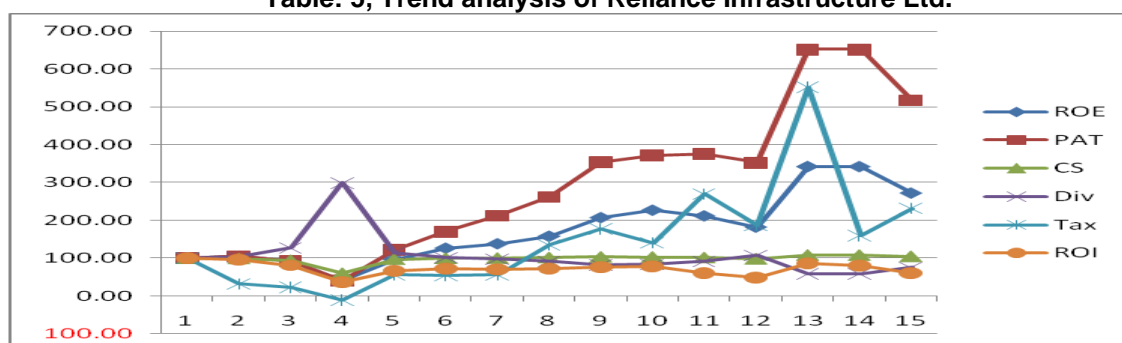
**Table: 4 (Rs in .000 lacs)**

Details of Return on Equity, Profit after tax, plough back of profit, Dividend, Tax and Return on Investment of Reliance Infrastructure Ltd						
Year	ROE	PAT	CS	Div	Tax	ROI
	Base %	Base %	Base %	Base %	Base %	Base %
2000	100.00	100.00	100.00	100.00	100.00	100.00
2001	104.74	104.74	99.36	103.21	32.26	96.27
2002	91.50	91.50	<b>94.62</b>	127.00	23.43	80.91
2003	39.72	39.72	60.29	299.39	10.76	36.69
2004	95.89	121.93	97.32	113.44	55.85	66.23
2005	125.92	169.57	99.82	100.92	54.98	71.85

2006	137.57	211.95	100.63	96.86	56.18	70.47
2007	157.51	261.20	<b>101.79</b>	<b>90.99</b>	135.59	71.57
2008	206.78	353.50	103.58	82.01	178.13	75.79
2009	226.30	371.18	103.31	83.37	140.94	77.65
2010	211.23	375.35	101.81	90.89	270.23	60.80
2011	181.54	352.28	98.70	106.53	187.13	48.54
2012	341.61	651.91	108.41	57.79	552.59	85.58
2013	341.48	651.67	108.25	58.60	159.62	79.96
2014	271.66	517.53	105.02	74.79	232.14	60.05

Source: Author Compiled.

**Table: 5, Trend analysis of Reliance Infrastructure Ltd.**



Interpretation: In the year 2001, the ROE was 104.74, in the year 2005, the ROE was 125.92, in 2006, the ROE was 137.57, 157.51 in 2007, 226.30 in 2009 and 341.48 in 2013. This is good sign for the organization. The higher the ROE, the more capable the companies are paying off its obligations and also encourage to outside investors and shareholders for investment in company's share capital.

**Reliance Infrastructure Ltd: Table-6**

		Correlations					
		ROE	PAT	CS	Div	Tax	ROI
ROE	Pearson Correlation	1	.993**	.669**	-.669**	.794**	.144
	Sig. (2-tailed)		.000	.006	.006	.000	.609
	N	15	15	15	15	15	15
PAT	Pearson Correlation	.993**	1	.610*	-.610*	.802**	.037
	Sig. (2-tailed)	.000		.016	.016	.000	.895
	N	15	15	15	15	15	15
CS	Pearson Correlation	.669**	.610*	1	-1.000**	.484	.578*
	Sig. (2-tailed)	.006	.016		.000	.068	.024
	N	15	15	15	15	15	15
Div	Pearson Correlation	-.669**	-.610*	-1.000**	1	-.484	-.578*
	Sig. (2-tailed)	.006	.016	.000		.068	.024
	N	15	15	15	15	15	15
Tax	Pearson Correlation	.794**	.802**	.484	-.484	1	.083
	Sig. (2-tailed)	.000	.000	.068	.068		.768
	N	15	15	15	15	15	15
ROI	Pearson Correlation	.144	.037	.578*	-.578*	.083	1
	Sig. (2-tailed)	.609	.895	.024	.024	.768	
	N	15	15	15	15	15	15

\*\* . Correlation is significant at the 0.01 level (2-tailed).  
 \* . Correlation is significant at the 0.05 level (2-tailed).

The above correlations table shows that there is strong relationship among ROE, PAT and corporate savings and Tax. Further, there is a moderate relationship among plough back of profit, dividend and the dependent variable and found that less likely relationship between the ROI and the dependent variable.

**Reliance Infrastructure Ltd**

**Regression Model Summary**



Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.993 <sup>a</sup>	.986	.985	11.24433	.986	904.608	1	13	.000	
2	.996 <sup>b</sup>	.992	.991	8.64282	.006	10.004	1	12	.008	
3	.996 <sup>c</sup>	.992	.990	9.01687	.000	.025	1	11	.877	
4	.999 <sup>d</sup>	.998	.997	5.38424	.005	20.850	1	10	.001	1.719

a. Predictors: (Constant), PAT

b. Predictors: (Constant), PAT, CS

c. Predictors: (Constant), PAT, CS, Tax

d. Predictors: (Constant), PAT, CS, Tax, ROI

e. Dependent Variable: ROE

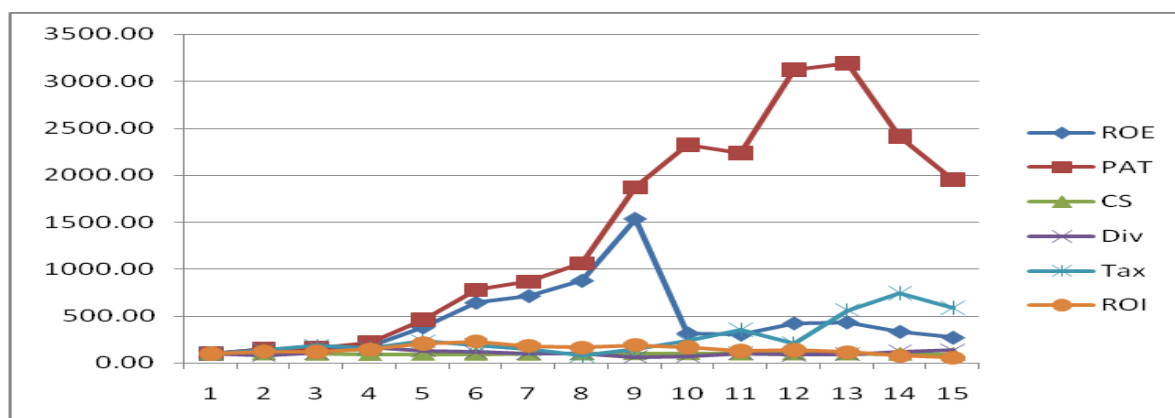
**Dependent Variable (Return on Equity):** The above regression analysis reveals that there is positively significant among ROE, PAT, plough back of profit, Tax and ROI and there is negatively significant between dependent variable and dividend and furthermore, the above model showed that the independent variables affect the dependent variables by 99.8%.

**Jindal Power Ltd: Table: 7 (Rs in .000 lacs)**

Details of Return on Equity, Profit after tax, plough back of profit, Dividend, Tax and Return on Investment of Jindal Power Ltd							
Year	ROE	PAT	CS	Div	Tax	ROI	
	Base %	Base %	Base %	Base %	Base %	Base %	
2000	100.00	100.00	100.00	100.00	100.00	100.00	
2001	150.67	152.92	101.51	81.87	139.43	123.10	
2002	141.12	162.44	99.22	109.43	181.22	118.41	
2003	180.85	219.12	94.66	164.31	155.33	146.71	
2004	380.76	461.35	97.39	131.38	229.50	210.62	
2005	642.83	778.89	98.61	116.74	186.20	230.75	
2006	714.18	865.34	99.58	105.07	143.04	183.36	
2007	876.30	1061.76	99.77	102.77	76.65	166.23	
2008	1534.93	1868.24	102.88	65.35	144.87	194.40	
2009	316.74	2320.62	102.30	72.38	230.86	167.50	
2010	304.02	2234.83	99.78	102.63	351.05	129.49	
2011	423.88	3117.54	100.95	88.52	207.25	140.24	
2012	433.43	3187.81	100.64	92.29	560.39	114.89	
2013	334.15	2405.30	98.14	122.41	742.87	76.4	
2014	271.08	1951.29	96.81	138.44	587.87	58.38	

Source: Author Compiled:

**Table: 8  
Trend analysis of Jindal Power Ltd**



Interpretation: In the year 2001, the ROE was 150.67, in the year 2003, the ROE was 180.85, in 2004, the ROE was 380.76, 876.30 in 2007, 1534.93 in 2008 and 334.15 in 2013. This is good sign for the organization. The higher the ROE, the more capable the companies are paying off its obligations and also encourage to outside investors and shareholders for investment in company's share capital.

**Jindal Power Ltd:**

**Table-9**

Correlations							
		ROE	PAT	CS	Div	Tax	ROI
ROE	Pearson Correlation	1	.202	.407	-.407	-.219	.546*
	Sig. (2-tailed)		.470	.133	.132	.432	.035
	N	15	15	15	15	15	15
PAT	Pearson Correlation	.202	1	.342	-.342	.607*	-.231
	Sig. (2-tailed)	.470		.213	.212	.016	.407
	N	15	15	15	15	15	15
CS	Pearson Correlation	.407	.342	1	-1.000**	-.237	.162
	Sig. (2-tailed)	.133	.213		.000	.395	.564
	N	15	15	15	15	15	15
Div	Pearson Correlation	-.407	-.342	-1.000**	1	.237	-.162
	Sig. (2-tailed)	.132	.212	.000		.394	.564
	N	15	15	15	15	15	15
Tax	Pearson Correlation	-.219	.607*	-.237	.237	1	-.606*
	Sig. (2-tailed)	.432	.016	.395	.394		.017
	N	15	15	15	15	15	15
ROI	Pearson Correlation	.546*	-.231	.162	-.162	-.606*	1
	Sig. (2-tailed)	.035	.407	.564	.564	.017	
	N	15	15	15	15	15	15

\*. Correlation is significant at the 0.05 level (2-tailed).  
 \*\*. Correlation is significant at the 0.01 level (2-tailed).

The above correlations table shows that there is moderate relationship between ROE and ROI. Further found that there is less likely relationship among the plough back of profit, dividend, Tax, PAT and the dependent variable.

**Jindal Steel & Power Ltd**

**Regression Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.202 <sup>a</sup>	.041	-.033	377.90648	.041	.555	1	13	.470	
2	.412 <sup>b</sup>	.170	.032	365.90220	.129	1.867	1	12	.197	
3	.493 <sup>c</sup>	.243	.036	365.02636	.073	1.058	1	11	.326	
4	.676 <sup>d</sup>	.456	.239	324.39609	.214	3.928	1	10	.076	1.623

- a. Predictors: (Constant), PAT
- b. Predictors: (Constant), PAT, CS
- c. Predictors: (Constant), PAT, CS, Tax
- d. Predictors: (Constant), PAT, CS, Tax, ROI

e. Dependent Variable: ROE

**Dependent Variable (Return on Equity):** The above regression analysis reveals that there is less significant among ROE, PAT, plough back of profit and ROI and there is negatively significant among dependent variable, dividend and tax and furthermore, the above model showed that the independent variables affect the dependent variables by 45.6%.

#### **Findings:**

The importance of efficient PAT is significantly developing the shareholder's behavioural finance which reflects the preference of the shareholder's in Tata Power Ltd. and Reliance Infrastructure Ltd. Therefore, increase in PAT would mean increase in shareholder's preferences. Again the importance of efficient ROI is significantly developing the shareholder's behavioural finance in Jindal Power Ltd. Overall; the model showed that the independent variables affect the dependent variables by 60.7% in Tata Power Ltd., 99.8% in Reliance Infrastructure Ltd. and 45.6% in Jindal Power Ltd., which clearly reveals that Reliance Infrastructure Ltd is best supporting the above model by 99.8%. The analysis of 'F' value is found by 87.6% in Tata Power Ltd., 87.7 % (being the highest) in Reliance Infrastructure Ltd and 47.0% in Jindal Power Ltd. are taken as a whole significant for the dependent variable for different companies. The correlation of PAT is positively significant at 0.01 level and plough back of profit is positively significant at 0.05 level and the Dividend is negatively significant at 0.05 level in Tata Power Ltd. Whereas, the correlation of PAT, plough back of profit and Tax are positively significant at 0.01 level and Dividend is negatively significant at 0.05 level in Reliance Infrastructure Ltd. Further, the correlation of ROI is positively significant at 0.05 levels in Jindal Power Ltd.

#### **Conclusion:**

The above analysis results showed that there is positive relationship between ROE and PAT in Tata Power and Reliance Infrastructure and positive relationship between ROE and ROI in Jindal Power Ltd. whereas ROI is found very less significant with ROE in Tata Power and Reliance Infrastructure Ltd and PAT, plough back of profit, Dividend and Tax is found very less significant with ROE in Jindal Power Ltd.

Hence, the interpretation of the results is that the company performance i.e Profit after tax is the only variable that can mostly attract the shareholder's behavioural finance for investment in company's share capital and where the investor's preference can mostly be seen in Tata Power and Reliance Infrastructure Ltd and where as in Jindal Power Ltd. ROI is the only variable to mostly attract the shareholder's behavioural finance for investment in company's share capital for more dividend as well as more bonus and right issue in future.

#### **References**

- Babcock, L. and G. Loewenstein (1997), Explaining Bargaining Impasse: The Role of Self-Serving Biases, *Journal of Economic Perspectives* 11(1), pp. 109-26
- Barber, B. and T. Odean (2000), Trading is Hazardous to Your Wealth: The Common Stock Investment Performance of Individual Investors, *Journal of Finance* 55, pp. 773-806
- Daniel, K. D., Hirshleifer, D. and Subrahmanyam, A., 'Investor psychology and security market underand over-reactions', *Journal of Finance*, 53, 1839-1886.
- Daniel, K. D., Hirshleifer, D. and Subrahmanyam, A., 'Overconfidence, arbitrage and equilibrium asset pricing', *Journal of Finance*, 56, 921-65.
- Daniel, K. D. and Titman, S., 'Evidence on the characteristics of cross-sectional variation in common stock returns', *Journal of Finance*, 52, 1-33.
- Doukas, J. A. and McKnight, P. J., 'European momentum strategies, information diffusion, and investor conservatism', *European Financial Management*, 11, 313-38.
- Doukas, J. A. and Petmezas, D., 'Acquisitions, overconfident managers and self-attribution bias', *Working Paper* (Old Dominion University, 2005).
- Djankov, S., Ganser, T., McLiesh, C., Ramalho, R., and Shleifer, A., (2009), The effect of corporate taxes on investment and entrepreneurship, World Bank, Harvard University.
- Ferson, W. E. and Harvey, C. R., 'Fundamental determinants of national equity market returns: A perspective on conditional asset pricing', *Journal of Banking and Finance*, 21, 1625-1665.
- Goetzmann, W. N. and Kumar, A., (2003) 'Why do individual investors hold underdiversified portfolios?' *Working Paper* (Yale ICF,).
- Hansen, L. P. and Jagannathan, R., 'Implications of security market data for models of dynamic economies', *Journal of Political Economy*, Vol. 99, 1991, pp. 225-62.
- Hosseini, H. (2003). The arrival of behavioral economics: from Michigan, or the Carnegie School in the 1950s and the early 1960s?, *The Journal of Socio Economics*, 32, 391 - 409.
- Huh, S.-W. and Subrahmanyam, A., 'Order flow patterns around seasoned equity offerings and their

- implications for stock price movements', *International Review of Finance*, 5, 75–111.
- Hvidkjaer, S., 'A trade-based analysis of momentum', *Review of Financial Studies*, 19, 457–491.
- Islam, S., (2012) Behavioural finance of an inefficient market, *Global Journal of Management and Business Research*, 12(14) 12-34.
- Jain, V., (2012), An insight into Behavioural Finance Models, efficient market Hypothesis and its Anomalies", *International Refereed Research Journal*, 3(1) 16-25.
- Jensen, M. and Ruback, R., 'The market for corporate control: the scientific evidence', *Journal of Financial Economics*, 11, 5–50.
- Kaustia, M., 'Market-wide impact of the disposition effect: evidence from ipo trading volume', *Journal of Financial Markets*, 7, 207–35.
- Kumar, M., (2013), A Study of Customers' Preference towards Investment in Equity Shares and Mutual Funds, *International Journal of Education and Psychological Research (IJEPR)* 2 ( 2) 95-100.
- Kurniasih A., Siregar H., Sembel R. and Achsani N. A. (2011). "Corporate dividend policy in an *Research Journal of Finance and Economics*, No. 72.
- Lievia Angela Pinkan Komala, Paskah Ika Nugroho, 2013, The Effects of Profitability Ratio, Liquidity, and Debt towards Investment Return, *Journal of Business and Economics*, 4(11) 1176-1186
- Lintner, J., 'Security prices, risk and maximal gains from diversification', *Journal of Finance*, 20, 587–616.
- Long, J. (1978), The market valuation of cash dividends, *Journal of Financial Economics* 6, 235- 264.
- Malmendier, U. and Tate, G. A., 'CEO overconfidence and corporate investment', *Journal of Finance*, Vol. 60, 2005, pp. 2661–2700.
- Marlina Lisa dan Clara Danica (2009). "Analisis Pengaruh Cash Position, Debt to Equity Ratio, dan Return on Assets Terhadap Deviden Payout Ratio", *Jurnal Manajemen Bisnis*, 2(1) 1-6.
- Merilkas, A., and Prasad, D., (2003), Economic Factors and individual Investor Behavior: The case of the Greek Stock Exchange, *Journal of Applied Business Research*, 20( 4).
- Panggabean Raja Lambas (2005). "Analisis Perbandingan Korelasi EVA Dan ROE Terhadap Harga Saham LQ-45 Di Bursa Efek Jakarta", *Jurnal Manajemen & Bisnis Sreiwijaya*, 3 (5).
- Poteshman, A., 'Underreaction, overreaction and increasing misreaction to information in the options market', *Journal of Finance*, Vol. 56, 2001, pp. 851–76.
- Poteshman, A. M. and Serbin, V., 'Clearly irrational financial market behavior: Evidence from the early exercise of exchange traded stock options', *Journal of Finance*, Vol. 58, 2002, pp. 37–70.
- Raza, A., (2014), "Review of behavioural finance as an emerging field of investment decision making", *IOSR Journal of Business and Management*, 12(6II)156-172.
- Sharpe, W., (1964), "Capital asset prices: A theory of market equilibrium under conditions of risk", *Journal of Finance*, 19:425-442.