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Fundamental Analysis of Selected IT Companies in India with Special Focus on Firm Specific Factors

DR.BINO JOY[1]&ARAVIND.R[2]

Abstract

The paper examines the firm- specific factors of selected IT companies based on which the intrinsic value of shares is computed and the same is compared with its market price. Out of the IT companies listed in NSE, three companies were selected on the based on market capitalization as on December10th,2018. Using judgment sampling, TCS,INFOSYS and WIPRO were selected for the study. One wayANOVA is used to determine whether there are any statistically significant differences between the financial performance among selected companies and onesample t-test is used to ascertain whether the difference in predicted intrinsic value and future market price differ significantly.It is found that the financial performance of these companies differs significantly. The study identifies that Return on Equity (ROE) and Book Value per Share(BV) are individually significant and at the same time, Net Profit together with ROE and BV can influence moderately the market price of share.

Keywords: Intrinsic value, EPS, DPR, ROE,

1. Introduction

The primary motive of buying a share is to sell it subsequently at a higher price. Earnings from dividend are often seen as a secondary objective since it is paid on face value and the rate of return compared to the purchase price is notional. Consequently, an investor would be interested both in the future capital appreciation of share and the future dividend to be paid on the share. These values can be estimated (but not predicted with certainty) based on the performance of the industry to which the company belongs and the general economic and socio-political scenario of the country.

[1]Assistant Professor of Commerce, Govt.College, Kottayam, Kerala State, binojoy@gmail.com

[2] . Assistant Professor of Economics, Govt.College,Kottayam, KeralaState.aravind6600@gmail.com

Security analysis is a process of examining the risk-return characteristics of individual securities. Two approaches for evaluating security are fundamental analysis(which looks on economic, industry, and company factors) and technical analysis(prediction of future prices based past price movements).The end goal of fundamental analysis is to arrive at a value called intrinsic value that an investor can compare with a security's current price to see whether the security is undervalued or overvalued. When the market price is greater than intrinsic value, the shares are said to be overpriced and is suggested to sell the security. When the market price is less than the intrinsic value, the shares are said to be undervalued and are suggested to buy the security. Fundamental analysis thus provides an analytical framework for rational investment decision making.

2. Review of Literature

Hemaand Ariram(2016) stated that an investor should analyze the market fundamentally and technically before investing in shares. Sugandharaj(2011) identifies fundamental analysis as a relevant tool to find the intrinsic value of shares. Sowmya (2016) emphasises the need to make a proper fundamental analysis when investing in various securities. Jakpar (2018) suggest that fundamental analysis can be used to generate a positive return.

There are researchers who argue that fundamental analysis is not useful for beating the market. For instance, Nadeemet al.(2013) argue that fundamental analysis cannot predict stock returns.

Regarding the company-specific factors that affect the market price of shares, Issah and Ngmenipuo (2015) have found a positive linear relationship between ROA, ROE, ROI and the market price of shares. Sharif et al. (2015) found that variables like return on equity, book value per share, dividend per share, dividend yield, price-earnings ratio, and firm size are important share price determinants. Kodithuwakku,S. (2016) identified earning per share, book value per share, price earnings ratio, and size are significant determinants of share prices. He argue that financial factors are highly beneficial for the investors, which can be used to make authentic predictors of future stock prices. Chughta(2014) concluded that dividends per share and earning per share have a positive and significant effect on the share prices of companies. Although there are key factors that affect stock prices in most countries, generalization of results is not possible due to differences in business environment, business regulations, political situation and the number and type of investors. It can be concluded that the existing literature advocates the belief that the stock price change is due to certain internal aspects of the company

3. Statement of the Problem

The basic assumption of fundamental analysis is that in the long run the market price will equate with the intrinsic value. Hence it is assumed that economic, industrial and company factors are the determinants of intrinsic value. Fundamental analysts are of the view that investment decisions taken by comparing the intrinsic value with market value will ultimately help investors to beat the market. In the backdrop, the study is an attempt to examine:

i)Do the selected companies differ in their financial performance?

ii) The extentto which the company-specific factors affect the market price of shares?

iii) What extent the prediction on fundamental analysis conforms to the actual price?

4. Objectives of the Study

1. To ascertain the intrinsic value of selected companies based on the financial performance of the company.
2. To identify the determinants of the Market price of share.
3. To examine the extent to which future market price conform to the predicted intrinsic price

4. Research Hypothesis

H_a1: Financial performance of companies differ significantly

H_a2: In the long run, market value do not equate with the intrinsic value

5. Research Methodology

The study is based on secondary data from the database of Prowess and NSE, annual reports of companies and press release. Out of the IT companies listed in NSE, three companies were selected on the basis of market capitalization as on December 10th,2018. Using judgment sampling, TCS (market capitalisation Rs.814811 crores), INFOSYS (Rs.324458 crores) and WIPRO (Rs.141140 crores) were selected for the study. Financial data and market price of these companies for the last five years were used for the study.

The tools used for analysing the financial performance of the company includes Earnings per share (EPS),Dividend per share (DPS),Return on equity (ROE),Price earnings ratio (P/E),Dividend pay-out ratio (DPR) and Book value (BV). The one way analysis of variance (ANOVA) is used to determine whether there are any statistically significant differences between the financial performance among selected companies. One sample t-test is used to ascertain whether the difference in predicted intrinsic value and future market price differ significantly.

6. Results and Discussions

Financial indicators of selected companies areanalyzed in order to examine to what extent the market price is predicted by these factors.

Table 1: Net Profit Available to Equity Shareholders (Rs in crores)

YEAR	TCS	Trend	INFOSYS	Trend	WIPRO	Trend
2012-13	21912	100	12373	100	8193.1	100
2013-14	24292	110.86	13492	107.14	8200.5	102.79
2014-15	26357	120.28	14383	106.6	8161.7	95.1
2015-16	25880	118.1	16100	111.94	7722.8	93.94
2016-17	31562	144.04	15404	95.71	7614	112.75
Average	26000		14350		7978	
Std.Deviation	3560		1484		286	

Source: Annual reports of respective companies

Over the years, Net profit shows an increasing trend in all companiesexcept a short fall in profit during 2015-16(except INFOSYS). This is because the company missed market expectations on account of the stronger Rupee and wage hikes.

The one-wayanalysis of variance (ANOVA) is used to determine whether there are any statistically significant differences in the net profit between the companies.

Table 1.1: Results of ANOVA

Source of variation	Sum of squares	Df	Mean square	F	P value
Between groups	835207240	2	417603620	83.723	.000
Within groups	59854880	12	4987906		
Total	895062120	14			

Since the p value<0.005, it is concluded that the net profit of selected companies differs significantly.

Table 2: Earnings per Share (EPS)

YEAR	TCS	Trend	INFOSYS	Trend	WIPRO	Trend
2012-13	98.31	100	105.91	100	33.38	100
2013-14	117.11	119.12	55.26	52.18	33.38	100
2014-15	120.04	102.5	60.16	108.87	33.61	100.69
2015-16	131.15	109.26	71.28	118.48	16.26	48.38
2016-17	79.34	60.5	33.66	47.22	12.67	77.92
Average	109.19		65.25		25.86	
Std.Deviation	20.44		26.52		10.48	
CAGR	-4.2		-20.49		-17.61	

Source: Annual reports of respective companies

From the above table it is clear that CAGR of all companies is negative which shows a decrease in EPS over years. We can observe a sharp decline in EPS during the year 2016-17. This is because of the FPO made by all companies. During the year 2015-16, TCS made an additional issue of 184 crore shares, while INFOSYS and WIPRO made an additional issue of 217crore shares and 151 crore shares respectively.

Table 2.1: Results of ANOVA

Source of variation	Sum of squares	Df	Mean square	F	P value
Between groups	17376	2	8688	21.171	.000
Within groups	4924	12	410		
Total	22301	14			

From the result, it can be inferred that EPS of selected companies differ significantly

Table 3: Dividend Pay-out Ratio (DPR)

YEAR	TCS	Trend	INFOSYS	Trend	WIPRO	Trend
2012-13	80.35	100	42.01	100	36.17	100
2013-14	34.63	43.10	24.25	57.72	43.49	120.24
2014-15	38.73	111.84	25.75	106.19	10.75	24.72
2015-16	36.78	94.97	43.5	168.93	7.05	65.58
2016-17	33.54	91.19	21.5	49.43	7.16	101.56
Average	44.8		31.4		20.92	
Std.Deviation	19.96		10.48		17.51	
CAGR	-16.03		-12.54		-27.67	

Source: Annual reports published by the companies

The DPR measures what a company‘s pay out to investors in the form of dividends. It is calculated by dividing the annual dividends per share by the Earnings per share. A range of 35% to 55% is considered healthy and appropriate from a dividend investor's point of view. So DPR of TCS is satisfactory and for WIPRO, it is not upto the benchmark. TCS has distributed roughly half of its earnings as dividends means that the company is well established and a leader in its industry. We can also observe a decrease in the pay-out ratio over the years which can be attributed to decline in profit over the years. In Case of Infosys they retain their earnings that the company is expecting future growth.

In general, if the firm is paying low dividends, it is resorting to high retentions to take care of the growth factor. Low dividends may affect the price of the share of the firm. On the other hand, a high pay-out ratio may lead to a rise in the market price of the share but it affects the future financing programme from internal sources.

Table 3.1: Results of ANOVA

Source of variation	Sum of squares	Df	Mean square	F	P value
Between groups	1433	2	716	2.636	.113
Within groups	3262	12	271		
Total	4695	14			

It is seen from table 3.1 that there is no significant difference in the DPR of selected companies.

Table 4:PriceEarnings Ratio (P/E)

YEAR	TCS	Trend	INFOSYS	Trend	WIPRO	Trend
2012-13	28.101	100	17.2	100	26.57	100
2013-14	23.011	81.89	18.12	105.35	30.14	113.44
2014-15	21.84	94.91	14.82	81.79	25.46	84.47
2015-16	30.489	139.60	17.36	117.14	24.44	95.99
2016-17	19.731	64.72	20.95	120.68	19.24	78.72
Average BV	24.63		17.69		25.17	
Std.Deviation	4.49		2.2		3.95	
CAGR	-6.83		4.02		-6.25	

Source: Annual reports of respective companies)

The P/E Ratio is a measure of the price paid for a share relative to income or profit earned by the firm per share. A higher P/E ratio means that investors are paying more for a unit of income. Here WIPRO shows the highest average P/E ratio followed by TCS and INFOSYS.

Over the years, P/E ratio of Infosys shows a positive CAGR which indicates aconstant growth followed by WIPRO and TCS.

Table 4.1: Results of ANOVA

Source of variation	Sum of squares	Df	Mean square	F	P value
Between groups	1741	2	87.052	6.424	.013
Within groups	162	12	13.552		
Total	336	14			

It is vivid from table 4.1 that a significant difference exists in the P/E ratio of selected companies.

Table 5: Book Value (BV) Per Share

YEAR	TCS	Trend	INFOSYS	Trend	WIPRO	Trend
2012-13	231.87	100	418.71	100	140.25	100
2013-14	330.02	142.33	266.04	63.54	166.87	118.98
2014-15	396.05	120.01	296.24	111.35	192.16	115.16
2015-16	397.2	100.29	290.76	98.15	93.42	48.62
2016-17	210.39	52.97	143.96	49.51	81.86	87.63
Average BV	313.1		283.14		134.91	
Std.Deviation	88.58		97.81		47.07	
Average Market value	2435.58		1480.38		454.64	
CAGR	-1.93		-19.23		-10.21	

Source: Annual reports of respective companies

This ratio shows the value of shareholder equity and can be used by investors to gauge whether a stock price is undervalued, by comparing it to the firm's market value per share. A higher ratio indicates the good position of the company.

During the year 2017-18, the shares of TCS, INFOSYS and WIPRO having face value 1,5and 2 respectively were traded at an average market price of 2123.098, 741.884 and 254.2522 which is 2123.09, 148.37 and 127 times more than the face value.It shows the trust of the investors towards the companies.

Out of the three companies compared, TCS made the highest peak during the study period indicating highest growth rateeach in 2014-15 was Rs.231.87, which has increased continuously. In 2016-17, Book value of share is Rs.210.39. Though the price shows a decline, the highest price over a period of 5 years is 396.05 whichshows the significant growth rate within the time period.

Table 5.1: Results of ANOVA

Source of variation	Sum of squares	Df	Mean square	F	P value
Between groups	91038	2	45519	6.956	.010
Within groups	78523	12	6543		
Total	169561	14			

The result of ANOVA, shows a significant difference in the Book value per share of selected companies.

Table 6: Returnon Equity (ROE)

YEAR	TCS	Trend	INFOSYS	Trend	WIPRO	Trend
2012-13	42.4	100	25.3	100	23.6	100
2013-14	35.49	83.70	20.78	82.13	19.89	84.28
2014-15	30.31	85.40	26.31	126.61	17.47	87.83
2015-16	33.27	109.77	25.44	96.69	18.27	104.58
2016-17	38.1	114.52	23.44	92.14	15.41	84.35
Average	35.91		24.25		18.92	
Std.Deviation	4.62		2.20		3.06	
CAGR	-2.12		-1.52		-8.17	

Source: Annual reports of respective companies

Return on equity is a measure of profitability of company that reveals how profit is generated by the company with the money shareholders have invested. It is computed by dividing profit after tax with net worth. From the above data it is clear that all the giants are showing a negative CAGR.

Table 6.1: Results of ANOVA

Source of variation	Sum of squares	Df	Mean square	F	P value
Between groups Within groups Total	754 142 897	2 12 14	377.37 11.81	31.763	.000

It is seen from table 6.1 that there is a significant difference in the ROEof selected companies.

Table 7: Dividend per share (DPS)

YEAR	TCS	Trend	INFOSYS	Trend	WIPRO	Trend
2012-13	79	100	59.5	100	12	100
2013-14	43	54.43	43.88	73.75	6	50
2014-15	47	109.3	50.51	115.11	2	33.33
2015-16	50	106.38	46.42	91.90	1	50
2016-17	30	60	93.64	201.72	1	100
CAGR	-17.61		9.49		-39.16	

Source: Annual reports published by the companies

Dividend per share is the sum of dividends paid by the company for every ordinary share outstanding. It is calculated by dividing the total dividends paid out by a business, including interim dividends over a period of time by the number of outstanding ordinary shares issued. From the above figure it is clear that Infosys is having a positive CAGR over a period of years.

Table 7.1: Results of ANOVA

Source of variation	Sum of squares	Df	Mean square	F	P value
Between groups	8500	2	4250.21	16.739	.000
Within groups	3046	12	253.92		
Total	11547	14			

It can be concluded from table 7.1 that there is a significant difference in the DPS of selected companies.

Tenability of Hypothesis

$H_0$1**:** Financial performance of companies does notdiffer significantly.

From ANOVA test (Table 1.1 to 7.1), it is clear that the financial performance of companies differs significantly. Hence, $H_0$1 is rejected.

Calculation of Intrinsic value

Based on the above financial indicators of companies, intrinsic value of shares of respective companies as on 31st March 2017are calculated (on four yearsdata of 2012-17)as follows:

Table 8: Computation of Intrinsic value of TCS

Average DPR [Σ DPR/ No of years]	0.3592
Average Retention Ratio [1-DPR]	0.64
Average ROE [Σ ROE/ No of years]	0.342925
Growth in equity	0.2197

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[Average Retention Ratio* Average ROE]	
Normalized Average P/E ratio [Σ P/E /No of years]	23.76775
Projected EPS [Current EPS *(1+Growth in equity)]	96.77467
Intrinsic Value [Projected EPS *Normalized Average P/E Ratio]	2300.12

The market price of TCS as on March 31,2017 is 2001.65. Since the intrinsic value is above the market price the share is under- priced and hence it is recommended to buy the share.

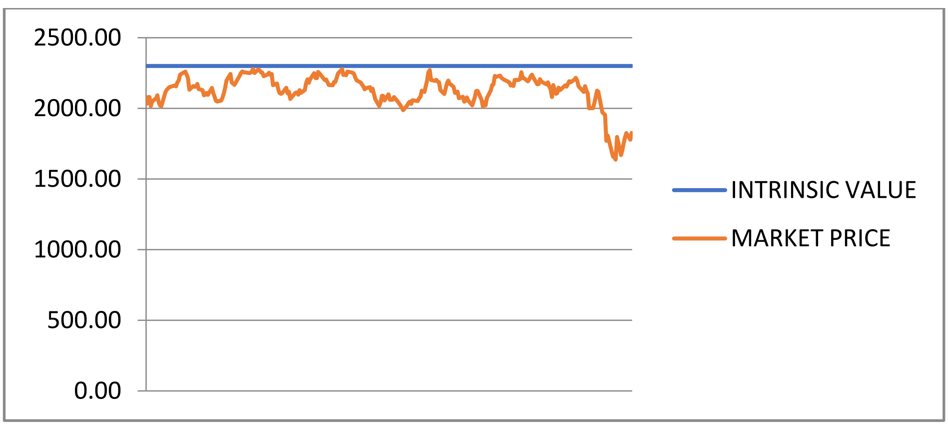

Figure 8:Intrinsic value vs Market price (TCS)-2017-18

Note: Monthly average market price is taken for comparison.

From the above figure it is evident that the market price of TCS never crosses the intrinsic value during the financial year 2017-18. However, the market price equates with intrinsic value four times during the year. The average market price of TCS during 2017-18 is Rs.2150.29. The test result of one sample t test (t= - 30.85,p=.000) also reveals a significant difference between the predicted intrinsic value and actual market price. It is clear that the decision based on fundamental analysis did not help investors to beat the market.

Table 9: Computation of Intrinsic value of INFOSYS

Average DPR [Σ DPR/ No of years]	0.2875
Average Retention Ratio [1-DPR]	0.71
Average ROE [Σ ROE/ No of years]	0.239925
Growth in equity [Average Retention Ratio* Average ROE]	0.1709
Normalized Average P/E ratio [Σ P/E /No of years]	17.8125
Projected EPS [Current EPS *(1+Growth in equity)]	39.41406
Intrinsic Value [Projected EPS *Normalized Average P/E Ratio]	702.06

The market price of INFOSYS as on March 31,2017 is 748.25. Since the intrinsic value is below the market price the share is overpriced and hence it is recommended to sell the share.

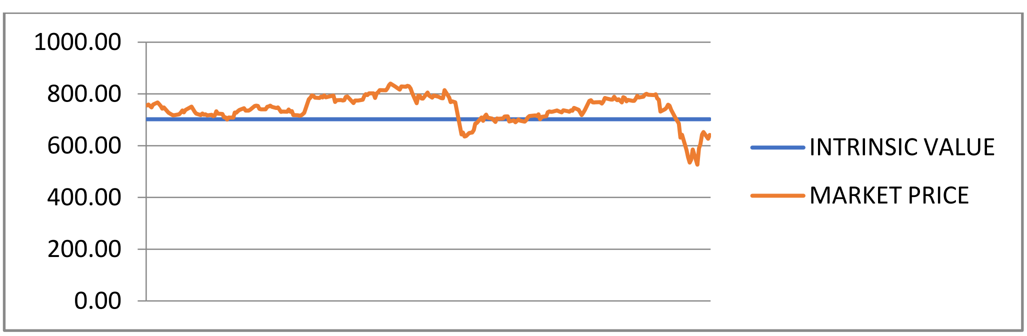

Figure9: Intrinsic value vs Market price(INFOSYS)-2017-18

From the above figure it is evident that the market price of INFOSYScrosses the intrinsic value during 2017-18. Out of 192 trading days,163 days shares were traded higher than the intrinsic value. The average market price during 2017-18 is Rs.750.02 which is significantly higher than predicted intrinsic value(t= 17.50, p=.000). Here also the decision based on fundamental analysis went wrong.

Table 10: Computation of Intrinsic value of WIPRO

Average DPR [Σ DPR/ No of years]	0.1711
Average Retention Ratio [1-DPR]	0.83
Average ROE [Σ ROE/ No of years]	0.1776
Growth in equity [Average Retention Ratio* Average ROE]	0.1472
Normalized Average P/E ratio [Σ P/E /No of years]	24.82
Projected EPS [Current EPS *(1+Growth in equity)]	14.53513
Intrinsic Value [Projected EPS *Normalized Average P/E Ratio]	360.76

The market price of WIPRO as on March31,2017 is 261.65. Since the intrinsic value is above the market price, the share is under -priced and hence it is recommended to buy the share.

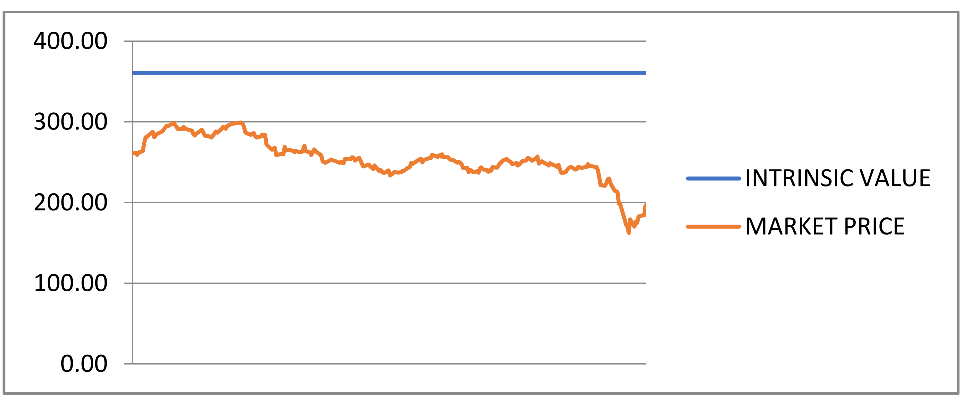

Figure 10: Intrinsic value vs Market price (INFOSYS)-2017-18

From the above figure it is evident that the market price of Wipro never touches the intrinsic value during the financial year 2017-18. The result of one sample t test reveals a significant difference between the predicted value and actual market price (t= -78.90, p=.000)

Tenability of Hypothesis

H_o2: In the long run, market value equates with the intrinsic value

From the result of one sample t-test shows a significant difference between the average market price and predicted intrinsic value. Out of the three companies, the market price of only one company (INFOSYS) is higher than the intrinsic value. So the Ho2 is rejected and inferred that market price of a share is determined by many factors and the factors other than company specific factors have significant influence in the market price of share. To confirm this and to identify the determinants of share prices, the following Multiple regression analysis (OLS) model is used:

$$MPS=\alpha+\beta_1 NP+\beta_2 ROE+\beta_3 BV$$

Where:

MPS= Market price of share *NP= Net Profit* *ROE=Return on Equity*

BV= Book value per share

The value of adjusted R^2 (0.593) shows that independent variables can explain 59.3 per cent of the variability in the dependent variable (market price of share) and 40.7 per cent of the variation is caused by factors other than the predictors included in this model.

Table 11: Model summary of OLS

R	R^2	Adjusted R^2	Std. Error of the estimate
0.877	0.798	0.593	382.75

The ANOVA (Table 11.1) depicts the model fit.

Table 11.1: Results of ANOVA

Model	Sum of squares	Df	Mean square	F	Sig.
Regression	11445054	3	3815018	26.040	.000
Residual	1611547	11	146504		
Total	13056602	14			

The table shows that the independent variables are statistically significantly and can predict the dependent variable, F (3, 11) = 26.040, p (.000) < .05 (i.e., the regression model is a good fit of the data).

The test results are appended in table 6.5

Table 11.2: Summary of Results-Regression Analysis

Independent Variables	Unstandardised Coefficient(b)	Std. Error	t value	P value
Net Profit	0.002	.028	0.060	.953
Return on Equity	59.99	26.20	2.289	.043
Book value per share	1.124	0.416	2.701	.008
Constant	5.035	1.124	4.481	.001

From Table 6.5, it is seen that among the explanatory variables, Return on Equity (ROE) and Book Value per Share(BV) are individually significant and at the same time, Net Profit together with ROE and BV can influence moderately the market price of share.

Concluding Remarks

Financial health of the economy and earning capacity of company like company's earnings, ROE, EPSand indicators of dividend distribution like DPR, DPS etc. are really just drivers of supply and demand. That means even if through fundamental analysis an investors finds a stock as undervalued, and makes a purchase decision, it is not always ensured he will book a profit.

The Indian capital market is semi -strong form efficient since majority of the investors consider historic as well as publically available information for taking investment in shares of companies. So there is always a possibility for insiders to earn superior return by using sensitive information of companies. Here also the technique of fundamental analysis can't give the investor an assured return as anticipated.

Hence the investor should continuously monitor the changes that happen in economy, industry and within the company and should revise the intrinsic value of individual scrips which in turn leads to revision of his portfolio. The study concludes that investment decisions based only on fundamentals of company and traditional financial theories won't help investor to beat the market. So along with fundamental analysis theories of behavioural finance should also be applied for making investment decisions in shares.

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