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Research Paper | Management

Relationship between P/E Ratio and Stock Return" with Reference to BSE 100

Dr. Ashvinkumar H. Solanki

Associate Professor, School of Management, RK University, Rajkot – 360020

ABSTRACT

Performance evaluation will do with the help of different models like, Treynor & Sharpe. Among the above performance measures, two models namely, Treynor measure and Jenson model use systematic risk based on the premise that the unsystematic risk is diversifiable. Sharpe measure considers the entire risks associated with fund are suitable for small investors, as the ordinary investor lacks the necessary skill and resources to diversify.

A valuation ratio of a company's current share price compared to its per share earnings. In general, a high P/E suggests that investors are expecting higher earnings growth in the future compared to companies with a lower P/E. It is important that investors note an important problem that arises with the P/E measure, and to avoid basing a decision on this measure alone.

KEYWORDS : P/E Ratio, Sharp ratio, Treynor Ratio, Stock returns

LITERATURE REVIEW

Basu's (1977-1985) empirical study finds that companies with low P/E ratios on average earn significantly higher absolute and risk-adjusted rates of return than higher P/E portfolios. Basu examines the common stock of approximately 1400 industrial firms with December 31st fiscal year ends, listed on the New York Stock Exchange (NYSE) for the period between 1957 and 1971. Stocks were rankedby E/P ratios (the reciprocal of the P/E ratio – also referred to as *earnings yield*) and divided into quintiles.

Damodaran (2006) states that other things held equal, higher growth firms will have higher PE ratios than lower growth firms. Other things held equal, higher risk firms will have lower PE ratios than lower risk firms and other things held equal, firms with lower reinvestment needs will have higher PE ratios than firms with higher reinvestment rates. However, he also reminds that other things are difficult to hold equal since high growth firms tend to have risk and high reinvestment rates.

Keith P. Anderson (2005) the price-earnings ratio is a widely used measure of the expected performance of companies. However, the P/E of a particular stock is partly determined by outside influences such as the year in which it is measured, the size of the company, and the sector in which the company operates.

Nicholson he has divided companies into five groups by keeping P/E as a base. He foundthat average returnfor 7years were 12.71% per annum (131% total) for the companies with a P/E less than 10. At the same time it was 7 97% for those stocks with P/E over 20 He concluded "The purchaser of common stocks may logically seek the greater productivity represented by stocks with low rather than high price earnings ratios"

Tze San Ong, YantoultraNguiYichen, Boon HengTeh (2010) this paper explores the PE ratio could have been employed to build successful investment strategies in predicting stock market highs. This study explores whether this approach could be regressed and work as an indicator for forecasting of future stock market lows.

RESEARCH PROBLEM

Empirical Research across the world, has unearthed evidences against efficient hypothesis. They suggest that past and publicly available information can be used to trace pattern in stock return distribution. The study has been done to examine the usefulness of price earnings ratios in the context of investment decision making. The proponents of price earning hypothesis believe that the low P.E. Portfolios experience superior returns relative to the high P.E. Portfolios.

RESEARCH OBJECTIVES

The objectives of the proposed study are:

- ✓ To examine the existence of price earnings ratio anomaly in the Indian Stock Market
- ✓ To analyze the returns of BSE 100 stocks.
- ✓ To investigate a potential low price-earnings (P/E) investment strategy as a means of making abnormal returns.
- ✓ To determine empirically whether the investment performance of common stocks is related to their P/E ratios.

RESEARCH IMPLICATIONS

Above study can be helpful to the investor in various ways.

- This study can be helpful to the investors to know and analyze how the market will give return as compare to P/E of stocks.
- This study work helps investors to know how they can earn better return by investing in least P/E stocks.
- This study research work also shows whether the market is efficient or not.

RESEARCH OVERVIEW

Research can be defined as a careful investigation or inquiry especially through search for new facts in any branch of knowledge. It contains procedures, definitions and explanations of techniques used to collect, store, analyze and present information as part of a research process in a given discipline. Methodology steers the project in the right direction and keep them on track.

POPULATION

All the scrip listed on BSE

SAMPLE SIZE

I have taken BSE-100 indices.

DATA COLLECTION

Basically, there are two types of data available,

1. Primary Data
2. Secondary Data

In my research i have used secondary data.

RESEARCH DESIGN

BSE is taken as source of information which widely describes Indian stock market. To test Indian stock market efficiency researcher has use BSE as a source of secondary data which broadly represent Indian stock market.

For the purpose of addressing this problem and satisfying these objectives researcher has selected BSE 100 stocks an analyzed them for the last years 2013. Based on the P/E ratios of sample stocks they are arranged in ascending order from Low P/E to High P/E. From this sequence 100 sample stocks are divided in 04 different

portfolios. Portfolio 1 consists of the highest P/E ratio. In this manner second, Third and fourth portfolios are created in the same line. As the selected index, BSE 100 is representing stock listed on Bombay Stock Exchange, all the data are collected **from bseindia.com.**

SCOPE OF THE STUDY

As per my research objective that researcher wants to study the relationship between P/E ratios and stock return in the Indian stock market but this study limited up to BSE-100 indices, but in the stock market there are indices are available.

In this study one can take more number of more indices as much as possible to prove the relationship. If more indices will be taken then there will be more accuracy in results and conclusion. Also my research is limited up to BSE only.

DATA ANALYSIS

SAMPLE TECHNIQUES

1. Sharpe's Performance Index

Sharpe (1966) developed a composite index which is very similar to the Treynor measure, the only difference being the use of standard deviation, instead of beta, to measure the portfolio risk, in other words except it uses the total risk of the portfolio rather than just the systematic risk:

$$\text{Sharpe} = \frac{(Rp - Rf)}{\sigma p}$$

Where:
Si = Sharpe performance index
σp = Portfolio standard deviation

This formula suggests that Sharpe prefers to compare portfolios to the capital market line(CML) rather than the security market line(SML). Sharpe index, therefore, evaluates funds performance based on both rateof return and diversification (Sharpe 1967). For a completely diversified portfolio Treynor and Sharpe indices would give identical rankings.

2. Treynor's Performance Index

Treynor (1965) was the first researcher developing a composite measure of portfolio performance. He measures portfolio risk with beta, and calculates portfolio's market risk premium relative to its beta:

$$\text{Treynor} = \frac{(Rp - Rf)}{Bp}$$

Where:
Ti = Treynor's performance index
Rp = Portfolio's actual return during a specified time period
Rf = Risk-free rate of return during the same period
βp = beta of the portfolio

2013 Portfolio - 1

		Times	%	No.	
Sr no.	Compay Name	P/E	Avg. Return	Beta	S.D.
1	Cairn India Ltd.	509.7	15.11	0.89	21.54
2	M M T C Ltd.	335.13	-39.94	1.44	98.35
3	G M R Infrastructure Ltd.	106.31	-57.78	1.42	63.99
4	Reliance Power Ltd.	89.38	-54.3	1.29	47.185
5	Indiabulls Real Estate Ltd.	62.06	-80.39	1.87	59.57
6	Kotak Mahindra Bank Ltd.	40.36	-72.51	1.48	46.83
7	Mundra Port & Special Economic Zone Ltd.	38.56	-53.66	1.12	35.67
8	Tata Communications Ltd.	35.29	-10.28	0.95	7.16
9	Aditya Birla Nuvo Ltd.	32.46	-76.33	1.25	41.2
10	Hindustan Unilever Ltd.	29.57	30.11	0.47	8.39
11	Educomp Solutions Ltd.	29.46	-47.31	1.25	78.14
12	Nestle India Ltd.	26.46	6.86	0.28	6.49
13	Tata Global Beverages Ltd.	25.68	-23.97	0.63	15.24
14	Power Grid Corpn. Of India Ltd.	24	-13.63	0.74	13.65
15	Adani Enterprises Ltd.	23.84	-67.69	1.42	51.27
16	Bharat Heavy Electricals Ltd.	22.36	-35.5	1.01	29.46
17	United Phosphorus Ltd.	22.24	-45.97	1.033	8.65
18	Glaxosmithkline Pharmaceuticals Ltd.	22.02	47.62	0.38	9.02
19	Cipla Ltd.	21.49	2.79	0.51	4.87
20	I T C Ltd.	21.25	-5.96	0.47	10.08
21	Tata Power Co. Ltd.	21.23	-39.9	1.01	30.65
22	Asian Paints Ltd.	21.07	-36.02	0.42	24.39
23	N T P C Ltd.	21.04	-1.15	0.69	10.82
24	Reliance Communications Ltd.	20.69	-71.67	1.31	44.64
25	Housing Devpt Finance Corpn. Ltd.	20.67	-45.3	0.92	28.13

Portfolio - 2

		Times	%	No.	
Sr no.	Compay Name	P/E	Avg. Return	Beta	S.D.
26	Sun Pharmaceutical Inds. Ltd.	20.43	-5.04	0.31	11.41
27	Bharti Airtel Ltd.	16.13	-26.68	0.68	36.21
28	Larsen & Toubro Ltd.	15.93	-62.34	1.2	38.16
29	Bharat Forge Ltd.	15.4	-69.93	0.99	41.39
30	N M D C Ltd.	15.12	-53.18	1.62	68.35

		Times	%	No.	
Sr no.	Compay Name	P/E	Avg. Return	Beta	S.D.
31	Hero Honda Motors Ltd.	14.86	32.51	0.44	0.051
32	Idea Cellular Ltd.	14.84	-61.99	1.03	46.56
33	Sterlite Industries (India) Ltd.	14.3	-62.98	1.41	58.63
34	Divi'S Laboratories Ltd.	14.12	-37.32	1.08	73.59
35	D L F Ltd.	14.03	-78.09	1.63	71.21
36	United Spirits Ltd.	19.33	-65.17	1.04	53.43
37	H D F C Bank Ltd.	18.86	-40.63	0.92	22.98
38	A B B Ltd.	18.57	-57.08	0.93	35.69
39	Zee Entertainment Enterprises Ltd.	18.3	-60.67	0.95	26.51
40	Infosys Technologies Ltd.	13.89	-11.24	0.45	10.20
41	Glenmark Pharmaceuticals Ltd.	13.62	-71.96	0.87	44.70
42	Reliance Industries Ltd.	13.37	-46.29	1.03	28.87
43	Mahindra & Mahindra Ltd.	13.24	-53.99	1.1	38.69
44	Maruti Suzuki India Ltd.	12.87	-37.2	0.74	35.06
45	Crompton Greaves Ltd.	12.86	-60.09	1.07	49.99
46	Jaiprakash Associates Ltd.	12.83	-78.82	1.7	75.78
47	Power Finance Corpn. Ltd.	12.53	-26.52	0.88	48.97
48	Dr. Reddy'S Laboratories Ltd.	12.36	-14.09	0.48	12.53
49	Reliance Infrastructure Ltd.	12.3	-70.41	1.54	39.62
50	Lupin Ltd.	11.64	1.31	0.58	16.87

		Times	%	No.	
Sr no.	Compay Name	P/E	Avg. Return	Beta	S.D.
56	Infrastructure Devpt Finance Co. Ltd.	10.56	-70.85	1.32	60.30
57	Jindal Steel & Power Ltd	10.23	-55.14	1.45	56.81
58	Torrent Power Ltd.	10.15	-56.65	1.26	88.99
59	Reliance Capital Ltd.	10.11	-77.65	1.76	46.91
60	Axis Bank Ltd.	9.74	-60.74	1.14	43.73
61	Siemens Ltd.	9.62	-74.88	1.07	48.83
62	Indiabulls Financial Services Ltd.	9.21	-83.75	1.45	89.72
63	State Bank Of India	8.85	-45.93	1.08	27.72
64	Oil & Natural Gas Corpn. Ltd.	8.68	-30.8	0.9	24.01
65	H C L Technologies Ltd.	8.62	-50.58	0.9	24.43
66	Indian Hotels Co. Ltd.	8.53	-67.44	1.04	35.67
67	Tata Motors Ltd.	8.52	--77.48	1.16	46.78
68	G A I L (India) Ltd.	8.51	-27.12	0.7	23.58
69	A C C Ltd.	7.89	--33.59	0.85	20.36
70	National Aluminium Co. Ltd.	7.85	-52.94	0.98	29.06
71	Ambuja Cements Ltd.	7.68	-39.77	0.78	20.69
72	Financial Technologies (India) Ltd.	6.99	-77.32	1.43	56.87
73	I V R C L Infrastructures & Projects Ltd.	6.67	-75.62	1.86	50.08
74	74 Shriram Transport Finance Co. Ltd.	6.63	-51.48	0.7	47.70
75	Ashok Leyland Ltd.	6.31	-57.02	1.17	35.11

Portfolio - 3

		Times	%	No.	
Sr no.	Compay Name	P/E	Avg. Return	Beta	S.D.
51	Tata Consultancy Services Ltd.	11.61	-40.29	0.49	35.86
52	Suzlon Energy Ltd	11.16	-84.54	1.63	51.36
53	Wipro Ltd.	11.15	-43.59	0.75	19.18
54	I C I C I Bank Ltd.	11.13	-63.01	1.38	32.69
55	Bajaj Auto Ltd.	10.6	-18.15	0.91	106.10

Portfolio – 4

		Times	%	No.	
Sr no.	Compay Name	P/E	Avg. Return	Beta	S.D.
76	Yes Bank Ltd.	6.31	-75.78	1.44	80.40
77	Rural Electrification Corpn. Ltd.	6.15	-31.66	1.06	125.57
78	Grasim Industries Ltd.	5.82	-58.71	0.87	34.38
79	Unitech Ltd.	5.72	-91.5	2.02	119.40
80	J S W Steel Ltd	5.51	-77.91	1.42	51.40

		Times	%	No.	
Sr no.	Compay Name	P/E	Avg. Return	Beta	S.D.
81	Bank Of Baroda	5.47	-32.57	1.1	26.38
82	I D B I Bank Ltd.	5.24	-48.11	1.39	30.29
83	Ultratech Cement Ltd.	5.19	-53.53	0.7	41.35
84	Steel Authority Of India Ltd.	5.1	-59.9	1.32	44.28
85	Welspun Corp Ltd	4.65	-85.06	1.58	60.19
86	Punjab National Bank	4.56	36.67	1	41.40
87	Bank Of India	4.43	-28.54	1.32	25.69
88	Tata Chemicals Ltd.	4.3	-47.89	1.14	28.38
89	Union Bank Of India	4.29	-20.59	1.03	28.57
90	L I C Housing Finance Ltd.	3.93	-18.57	1.16	27.56
91	Hindalco Industries Ltd.	3.34	-66.95	1.33	31.85
92	Sesa Goa Ltd.	3.02	-43.24	1.2	62.56
93	Tata Steel Ltd.	2.73	-74.15	1.45	42.08
94	Housing Devpt& Infrastructure Ltd.	1.95	-85.9	2.04	114.07
95	Hindustan Petroleum Corpn. Ltd.	2.13	13.19	0.78	0.84
97	Bharat Petroleum Corpn. Ltd.	-5	8.98	0.73	4.47
98	Ranbaxy Laboratories Ltd.	-5.6	-37.85	0.8	17.42
99	Essar Oil Ltd.	-7.33	-67.02	1.75	53.91
100	Indian Oil Corpn. Ltd	-12.6	-5.94	0.8	12.01

Portfolio Performance

	Sharpe	Treyner	Rank
Portfolio 1	-1.260	-41.32	1
Portfolio 2	-1.363	-54.27	3
Portfolio 3	-1.265	-50.25	2
Portfolio 4	-1.149	-67.71	4

Chart

Interpretation

Here from above data tables it is evident that portfolio of least P/E stocks (portfolio 4) are clearly giving less loss as compared to the portfolios with highest P/E stocks (portfolio 1 & 2). According to the entire four performance evaluation index portfolio 4 stands out and gave the less loss in compare to all other portfolios. Most importantly here the proportion to keep P/E as the sole base to invest does not work fully but up to significant extent it proved itself viable.

CONCLUSION

It is evident from the above analysis that investing in low P/E stocks creates sound possibility to generate better returns. It shows that performances of least P/E stocks are much better in compare to higher P/E stocks.

Now with the help of all performance models it is clear that there results are in line with the findings of almost all the literature that is reviewed.

The investors should invest in those companies which have low P/E stocks because it gives the possibility to generate better returns. But most importantly here the proportion to keep P/E as the sole base to investdoes not works fully but up to significant extent it proved itself viable. Due to these change volatility increased in market and models don't able to prove the things.

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