P/E Ratio Effect on the Stock Returns in the Banking Industry – An Empirical Study in National Stock Exchange, India

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Abstract

Economists around the world have always tried to find out the presence of anomalies in the stock market. With a view to earn a quick buck in the market, investors always search for alternatives. An investment strategy based on purchasing low price-earning stocks is said to help in beating the index. This so called price-earning effect is such an anomaly. The purpose of this study is to verify the impact of price-earning ratio on the stock returns in the banking industry. This paper tries to find out answer to the question "Whether one can make abnormal returns by taking advantage of price-earning ratio effect in the banking industry? The stock returns are calculated and compared by using certain statistical tools. The stocks are divided into three categories based on price-earning ratio (i.e. Low = 0 to 10, Mid = 10 to 20 and High = More than 20). After this all the three portfolios are compared by using ANOVA and Correlation analysis to study the presences of the P/E ratio effect in the banking industry in Indian stock market (i.e. National Stock Exchange). However, the result of the study reveals the absence of P/E ratio effect on the stock returns in the banking industry.

Keywords: Bank, P/E ratio, Price, Return.

1. Introduction

During the last decade, the Indian stock market has shown metamorphic changes. This has motivated academicians and practitioners to find out ways to get more return from the market. Certain studies have shown the presence of anomalies in the stock market and it is also sometime found that there is an absence of any particular anomaly. The P/E ratio effect is one of the most popular effects in the market. One of the groups of researchers believes that price-earning ration are indicators of the future investment performance of a security. Proponents of this P/E ratio hypothesis claim that low P/E securities will tend to outperform high P/E stocks. In other words, prices of securities are biased, and the P/E ratio is an indicator of this bias. According the efficient market hypothesis stock market is efficient. This study questions the efficient market hypothesis and tries to find out whether the market is efficient or not by using P/E ratios of the companies in banking industry. One of the most enduring anomalies is the 'size effect', the apparent excess expected returns that accrue to stocks of small-capitalization companies – in excess of their risks – which was first discovered by Banz (1981). The 'firm size effect was documented by Banz (1981) and Reinganum (1981). According to their studies, small

firms have higher average returns than larger firms, even after adjusting for market risk beta. A massive body of literature has developed around estimating the CAPM for a sample of assets and testing for alpha by sorting assets into portfolios by various factors such as illiquidity, market value, beta, book to market value, price-earnings ratios, and many other parameters. (Amihud, 2002; Banz, 1981; Basu, 1977; Fama and French, 1992). Reinganum (1981), whose paper was published simultaneously with Banz (1981), challenges Ball's (1978) E/P effect by providing evidence of the superiority of the size effect over the E/P effect. The E/P effect, also called price/earnings ratio anomaly, states that stocks trading on a high E/P ratio (low price/earnings ratio) outperform the market averages. To answer the question as to whether the E/P and market value of a firm are related or independent, Reinganum classifies firms by both the market values of the common stock and E/P ratios. Twenty-five portfolios are formed, in ascending order, from the lowest MV and E/P to the highest. Then mean excess returns and betas for these portfolios are estimated. All E/P portfolios within the lowest MV quintile have positive excess returns. However, not all of the MV portfolios within the lowest E/P quintile

have positive excess returns. Thus, portfolios formed on MV are more powerful in explaining excess returns compared to those formed on the basis of E/P ratios. Therefore, Reinganum classifies the CAPM as mis-specified and defines the size, rather than E/P ratio, as more closely related to equilibrium pricing. Possible explanations emerged as soon as the size anomaly was documented. Reinganum (1981) has demonstrated that firm-size data can be used to create portfolios that earn 'abnormal' returns of up to 40 per cent annually. In particular, the smaller a firm's capitalization, the greater the apparent abnormal returns.

The relationship between stock prices and earnings per share is called a P/E ratio and is one of the most widely used key performance indicators by investors. Stocks that have low P/E ratios, also known as multiples, are considered to be cheap or undervalued and the opposite holds true for high ratios. The lower the multiple, the less one pays for every rupee of earnings. The price-earning effect is based on the principle of investing in undervalued stocks. This investment strategy consists of constructing a portfolio merely on stocks with low multiples in the belief of obtaining abnormal returns.

2. Research Methodology

In this paper last five year returns from the 50 banking stocks have been considered. The price-earning ratios of all the 50 banking companies have been grouped in the following way:

P1 = Low = P/E ratio between 0 to 10
P2 = Mid = P/E ratio between 10 to 20
P3 = High = P/E ratio = More than 20

The portfolio's returns are calculated on a monthly basis for the period of April 2010 to Nov 2015. The returns of these stocks are compared by using statistical tools like ANOVA and Correlation analysis. The ANOVA tries to explain differences in the behaviour of the different stocks. Correlation analysis is used to find the relationship among the different groups of stocks.

3. Data Analysis and Interpretation:

Table-1:

Descriptive Statistics of the Stock Returns of the Various Portfolios

Portfolios	N	Mean	Std. Deviation	Std. Error
P/E = 0 to 10	70	-.8872744942	9.91348728840	1.18488836254
P/E = 10 to 20	70	-.5075532805	8.10601013455	.96885352204
P/E = More than 20	70	.1781831738	9.39695006354	1.12315035564
Total	210	-.4055482003	9.13708681715	.63051889252

Table-1 above shows the descriptive statistics of the stock returns of the various portfolios. Here we can see that the monthly mean return of the category P3 stocks have shown more positive return as opposed to the literature that advocates that the stocks having low P/E ratio normally gives better return. In the banking industry this shows a mild difference between the stocks. However the risks of every category of stocks are same and this proves that the behaviour of the stocks of each and every category is similar. The following table makes a more elaborative study that shows the ANOVA between the different kinds of stocks. This table tries to find out the presence of difference in the stock returns.

Fig-1: Means Plots
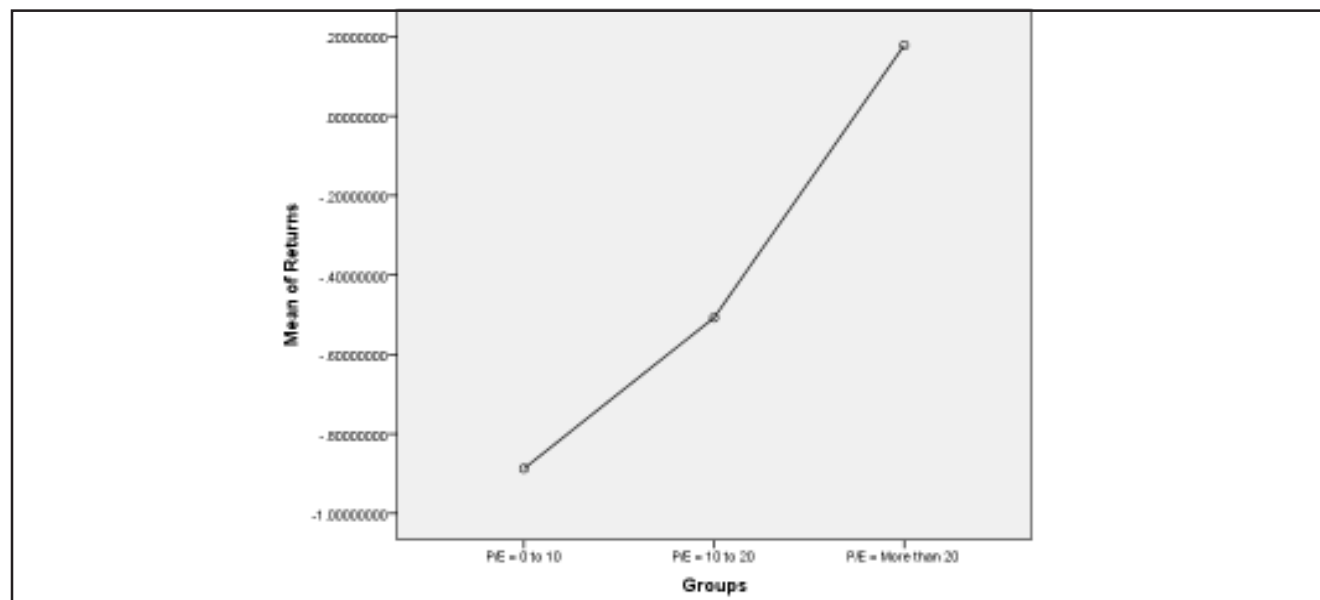
Tabel-2: ANOVA of the Different Kinds of Stocks

Groups of Stocks	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	40.825	2	20.412	.243	.785
Within Groups	1407.824	207	84.096		
Total	1448.648	209			

Table – 2 above displays the ANOVA of the different kinds of stocks. We can see that the significance level is 0.785 which is much above the p-value 0.05. This proves that there is no significant difference among the behaviour of monthly return across companies belonging to different P/E ratio groups of companies. We can conclude that the behaviour of the banking stocks in National Stock Exchange is not affected by their Price-Earning ratios. In other words we can say that the stock price behaviour is independent of its price-earning ratios.

Tabel-3: Correlations

Portfolios		Low P/E=0 to 10	Mid P/E=10 to 20	High P/E= More than 20
Low P/E=0 to 10	Pearson Correlation	1	.863**	.643**
	Sig. (2-tailed)		.000	.000
	N	70	70	70
Mid P/E=10 to 20	Pearson Correlation	.863**	1	.604**
	Sig. (2-tailed)	.000		.000
	N	70	70	70
High P/E=More than 20	Pearson Correlation	.643**	.604**	1
	Sig. (2-tailed)	.000	.000	
	N	70	70	70

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

The co-efficient of correlation between the Low P/E and Mid P/E ratio is 0.863, between Low and High P/E is 0.643 and between High P/E and Mid P/E ratio is 0.604. This shows that the correlations among the groups of stocks is high and shows that during this period the performance of the banking industry did not show any kind of anomalies related to P/E ratio. However the mean return of the High P/E ratio stocks related to banking companies have shown higher return as compared to the other ratios. The risks of all the three categories of stocks are similar with standard deviation of 9.91, 8.10 and 9.39 respectively. This shows that the performance of the banking industry is uniform and is not affected by the P/E ratios. Though all the categories of stocks have shown similar risk but it is slightly low in Mid P/E ratios so one can think of investing in these categories of banking stocks. If we look at the return part the High P/E ratio firms have shown highest return. Aggressive investors can go for investing in the stocks belonging to this category because the difference in the risk is not very high.

4. Conclusion

Researchers often proved that a great deal of anomalies exist in the stock market. P/E ratio is one of them. However during this study we have found the absence of P/E ratio effect on the stock returns in the banking industry.. The stock price behaviour is independent of the P/E ratio of the stocks. However the correlation of the High P/E ratio stocks with other types of stocks is lower as compared to the other correlations. Here we can conclude that during the period of the study there is absence of P/E ratio effect in the banking industry in the National Stock Exchange. This shows that the banking stocks in the National Stock Exchange are efficient. However further research is required to prove the presence of abnormal return in this industry. The same can also be proved by taking other industries into consideration to find out the market efficiency. Here we can conclude that getting more return by designing portfolios with stocks from the banking Industry based on P/E ratio may not give better result.

References

1. Aswath, Damodaran. Investment Valuation. New York: Wiley Finance, 2002, pp. 69

2. Basu, S. (1977). "Investment Performance of Common Stocks in Relation to The Price-Earnings Ratios: A Test of the Efficient Market Hypothesis", The Journal of Finance, 32(3), pp. 663-682.

3. Banz R.W, and Breen, "Sample-Dependent Results Using Accounting and Market Data: Some Evidence." Journal of Finance. (1986), pp 779-93.

4. Fisher Black, "Capital Market Equilibrium with Restricted Borrowing". Journal of Business (July 1972), pp. 444-455.

5. Fischer Black, Michael C. Jensen and Myron Scholes, "The Capital Asset Pricing Model: Some Empirical Tests", in Studies in the Theory of Capital Markets, Michael C. Jensen, ed. (New York: Paareger, 1972), pp. 79-121.

6. Kennon, Joshua. "Price to Earnings Ratio (P/E Ratio)." About.com n. pag. Web. 16 Dec 2015. <http://beginnersinvest.about.com/cs/glossary1/g/defperatio.htm>.

7. Ray Ball and Phillip Brow, "An Empirical Evaluation of Accounting Income Numners", Journal of Accounting Research (Autumn 1968), pp. 159-178.

8. Reinganum, Marc R., (1981), "Misspecification of capital asset pricing: Empirical anomalies based on earnings' yields and market values", Journal of Financial Economics- 9, March, 1981 pp. 19-46