PORTFOLIO ANALYSIS USING UPSIDE-POTENTIAL RATIO AND APPLYING PORTFOLIO ASSESSMENT CRITERIA

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Abstract

This Research survey the portfolio analysis using upside-potential ratio and applying portfolio assessment criteria in stock portfolio of retirement fund investment Company of oil industry Employees. This research categorized in descriptive research classification. On the other hand, this paper in terms of purpose has been categorized in the applied research classification. Descriptive method has been used to collect data in terms of the purposes mentioned in the applied type of research. The result of this research showed that portfolio consisted of the stock at small, medium and big companies have better performance than the mean of portfolio based on the Upside-Potential Ratio and another side portfolio consisted of the stock at small, medium and big companies have better performance than the mean of portfolio based on Upside-Potential Ratio.

Keywords: Portfolio, Assessment criteria, Stock portfolio, Retirement Fund, Investment

Introduction

Investment Company is a company with the main activity of holding securities of other companies for purposes of investment. Investment Company invests on the money or shares from shareholders who share in the profit and loss of their investment. The main activities by investment companies include Portfolio management, appropriate diversification of investments with the goal of minimizing risk and increasing efficiency, identify industries with comparative and better advantage aiming at investing on, Modify the structure and composition of the portfolio to reduce risk and increase return on investments, Continuous efforts to increase shareholder wealth and their satisfaction.

Problem statement

Accordingly, the investors intend to get to know about the outcomes of their investments to compare the efficiency came by their investments with other investments or the investing opportunities which exist to date in order to get assured of their optimum choice. In this regards, Investment Performance Evaluation is of importance particularly at Investment Companies indicates the effectiveness and efficiency of investment decisions.

On the other hand, adopting an appropriate strategy for the investment companies like Retirement Fund Investment Company of oil industry Employees which has undertaken to pay a large group of

Pensioners in a long term is of importance. This importance multiplies to know that pension funds in Iran by increasing trend in number of pensioners face the changes in the age pyramid. Further, Insurance calculations have not forecasted good prospects for them unless return on investments found with an appropriate trend getting the optimum outcomes.
Here, according to the importance of the topic of research, the main problem of this research is as follows:
How is the Investment Performance within Stock portfolio of Retirement Fund Investment Company of oil industry Employees?
Whether the company invests the cash provided with it in a proper way in Stock Exchange?
Which group of Offensive or defensive stocks is more proper for the purpose of investing?

Research objectives

This paper seeks to evaluate the Stock portfolio of Retirement Fund Investment Company of oil industry Employees. Hence, it is aimed to investigate the current situation existing at this company in stock exchange to get to know about the strengths and weaknesses of investment management at this company. Clearly, one can say this paper aims to analyze and investigate the stock portfolio of Retirement Fund Investment Company of oil industry Employees; Investment performance of the Company on the Stock Exchange is evaluated using the indicators of Upside-Potential Ratio, whereby the managers would adopt the appropriate decisions on upcoming investments and selecting stock portfolio in this way.

Research hypothesizes

The second hypothesis

Portfolio consisted of the stock at small, medium and big companies have better performance than the mean of portfolio based on the Upside-Potential Ratio.
Sub- hypotheses :

- Portfolio consisted of Offensive stock at small, medium and big companies have better performance than the mean of portfolio based on the Upside-Potential Ratio.
- Portfolio consisted of Defensive stocks at small, medium and big companies have better performance than the mean of portfolio based on the Upside-Potential Ratio.
- Portfolio consisted of indifferent stocks at small, medium and big companies have better performance than the mean of portfolio based on the Upside-Potential Ratio.

Research Background

Safarpoor and Sheikh (2007) examined the Performance of investment companies based on exchange portfolio and Monthly stock returns. This study aimed to evaluate the impact of investment period on companies' performance. Performance evaluation of the companies conducted using Criteria trainer, Jensen and Sharp where the results from findings indicated that the companies with the long-term or short-term investment have the same performance. The results of this study showed that the companies studied using index of yields and price had the poor performance rather than in the case using index of exchange.
Abdeh Tabrizi and Sharifian(2008) examined the impact of adverse risk on adjusted performance based on the risk at the investment companies listed in Tehran stock exchange.

They defined the differences existing in the performance evaluation criteria based on the modern portfolio theory as well as the Postmodern Theory of portfolio.

In this study, the relationship between ranking the companies based on Sharpe ratio and Upside-Potential Ratio was examined. They concluded that a significant relationship exists between these two ratios where this relationship derives from the Negative skewness in the distribution of returns. Hence, applying the Upside-Potential Ratio was required.

Prof. Dr. Martin Brown is Full Professor of Banking at the University of St.Gallen in 2008 provided an article entitled evaluation of performance in investment industry. He addressed investigating different indicators to date introduced to evaluate investments. The results of his study showed the high correlation among the indicators introduced.

In a study by Moorhadi in 2010 in Indonesia, empirical evaluation of Investment Company's performance using timing the market in selecting stock and frameworks Trainer and Harrows (1996) and Hendrickson and Marton (1981) was proposed.

The data associated to 55 Indonesian investment companies over 17 months during 2008-2009. The results showed that only three companies had good performance in terms of Market Timing and four markets in terms of stock, where the portfolio performance evaluation model defined previously based on Treynor, Sharpe and Jensen techniques found with good indicators to evaluate the investment company's performance.

In a study by Sergio Ortobelli et al. (2008) stochastic orderings of risk/reward positions in order to define in a natural way risk/reward measures consistent/isotonic to investors' preferences have been defined and described. We begin by discussing the connection between the theory of probability metrics, risk measures, distributional moments, and stochastic orderings. Then we examine several classes of orderings which are generated by risk probability functional. Finally, we demonstrate how further orderings could better specify the investor's attitude toward risk.

Cogin et al.(1993) studied the ability of the preferred stock and feasibility of US's Retirement Fund managers, proposed a model for several academic research on portfolio management performance. Further, they found in another study that Retirement Funds had less than 1% returns during 1983-1989 mentioned then with a poor performance.

In a study entitled "Pension Funds' Performance in Strongly Regulated Industries in Central Europe: Evidence from Poland and Hungary" by Martin T. Bohl and colleagues, presents an analysis of pension funds' performance in Poland and Hungary, as Central European countries characterized by strong regulation of their private pension fund industries. The paper contributes to the existing literature in the following ways. First, it is among the first papers to provide empirical evidence on the performance of pension funds in the two Central European countries. Second, it complements the available evidence on performance of pension funds operating in lax regulatory environments and guided by "prudent man" laws by analyzing the performance of pension funds acting under much stricter regulations. Third, since the details of the regulations differ across the countries', the paper will provide valuable evidence on the effect of the regulations on pension funds' portfolio composition in these countries. Fourth, we believe that the paper's findings will have important implications for policy makers and pension fund managers in the Central European countries.

Blake and Board(2000) studied the UK private pension funds and find that the average fund underperformed the market average by 0.45 percentage points per annum, before deducting any fund management fee. Another UK study into over 2000 segregated pension funds by Thomas and Tonks(2001) during the period 1983-1997 found that most of the funds are close-trackers to the FT-ALL share index and that their average outperformance was significantly different from zero, around one half of a percentage point per year. The average selectivity alpha and the average timing

parameters were both negative. Also, Blakde et al. (2001) presented evidenced that the funds' results are very close to the benchmark and on average slightly underperform it. Blake et al. (1999) found a stock selection negative and the average market timing very negative. There are relatively many studies into the American pension funds. Ippolito and Turner(1987) studied over 1500 US ERISA-based pension funds during the period of 1977-1983, and Lakonishok et al. (1992) examined 769 defined benefit funds in 1983-1989. Both studies conclude that, on average, the pension managers significantly underperformed the passibe management style. Lakonishok et al.(1992) relates the average underperformance of 1.3% annually to the agency problems. A study of Coggin et al.(1993) on a random sample of 71 Us equity pension funds during 1983-1990 found a significant positive selectivity and negative timing. Christopherson et al. (1998) using conditional performance evaluation framework evaluate 261 manager portfolios over 1980-1996 to the Russell 3000 benchmark and find that the average manager outperforms the Russel by 0.72% per annum.
Kent Daniel (2012) conducted a study entitled “Measuring Mutual Fund Performance with Characteristic-Based Benchmarks", this article develops and applies new measures of portfolio performance which use benchmarks based on the characteristics of stocks held by the portfolios that are evaluated. Specifically, the benchmarks are constructed from the returns of 125 passive portfolios that are matched with stocks held in the evaluated portfolio on the basis of the market capitalization, book-to-market, and prior-year return characteristics of those stocks. Based on these benchmarks, “Characteristic Timing” and “Characteristic Selectivity” measures are developed that detect, respectively, whether portfolio managers successfully time their portfolio weightings on these characteristics and whether managers can select stocks that outperform the average stock having the same characteristics. We apply these measures to a new database of mutual fund holdings covering over 2500 equity funds from 1975 to 1994. Our results show that mutual funds, particularly aggressive-growth funds, exhibit some selectivity ability, but that funds exhibit no characteristic timing ability.

Research methodology

Present paper categorized in descriptive research classification. On the other hand, this paper in terms of purpose has been categorized in the applied research classification. Descriptive method has been used to collect data in terms of the purposes mentioned in the applied type of research. According to the point lied in the fact that two fundamental risk and return exist in the criteria of portfolio management performance evaluation, firstly the way to calculate different types of risk and return used in criteria above is defined, and then the components of models are defined.

Statistical sample and population

Statistical population of this research includes the Stock portfolio of Retirement Fund Investment companies of oil industry Employees. In this study, the entire data related to the statistical population introduced is used whereby there won't be a sample group. Since the stock of over 50 companies exists in the portfolio and data would be collected daily, the primary data used on statistical population would be over 110 thousand cases.
To conduct this research, the entire Stock portfolio of Retirement Fund Investment companies of oil industry Employees has been taken as the place scope, where the time scope has been mentioned from the early year 2005 till the end of year 2011.
Data collected of Stock portfolio of Retirement Fund Investment Company of oil industry Employees. To conduct this research, two series of data are needed. The first part of data relates to the return on the investment companies in a month and year where the second part of data relates to

the market index in a month and year. To analyze data and test hypotheses, financial procedures and statistical techniques would be utilized. After collected data and provided the necessary calculations, initially the stock existing in portfolio would be grouped based on research model.

Inferential analysis and research hypotheses testing

In this part, the research hypotheses are tested. For this, initially the main hypotheses are defined and the sub-hypotheses are proposed and tested using the appropriate statistical test.

The second sub-hypothesis: Portfolio consisted of Offensive stock at small, medium and big companies have better performance than the mean of portfolio based on the Upside-Potential Ratio.

According to the results, it can perceive that assumption of equality of variances in two groups according to the test "Leuven" is accepted (sig=0.055), thus, with the assumption of equality of variances, p-value=0.529 has been attained for two-tailed test. To obtain appropriate p-value for one-tailed test, the value of 0.529 is divided to 2. Hence, p-value=0.264 would be an appropriate value for the test. According to this value, one can say the zero hypothesis, has to be accepted at 95% assurance level. In other words, statistically there would not be an observer to reject the zero hypotheses.

As discussed above, sum of rank and mean of market portfolio rank has been higher than the rank of portfolio in defensive medium-sized companies. As a result, statistically it cannot say that Portfolio consisted of Defensive stocks at medium-sized companies have better performance than the mean of portfolio based on the Upside-Potential ratio.

According to the results, it can perceive that assumption of equality of variances in two groups according to the test "Leuven" is rejected (sig=0.059), thus, with the assumption of equality of variances, p-value=0.121 has been attained for two-tailed test. To obtain appropriate p-value for one-tailed test, the value of 0.121 is divided to 2. Hence, p-value=0.061 would be an appropriate value for the test. According to this value, one can say the zero hypothesis, has to be accepted at 95% assurance level. In other words, statistically there would not be an observer to reject the zero hypotheses.

According to the results, p-value to test equality has been obtained 0.025. This relates to the two-tailed test. The real p-value is obtained equal to 0.012 by dividing this value to 2. According to the p-value obtained, mentioned less value than the value of 0.05, the zero hypothesis has to be rejected.

The process of the second main hypothesis testing and its results

The second main hypothesis includes Portfolio consisted of the stock at small, medium and big companies have better performance than the mean of portfolio at market based on the Upside-Potential Ratio. To examine this hypothesis, initially the sub-hypotheses have to be examined.

The first sub-hypothesis: Portfolio consisted of offensive stock at small, medium and big companies have better performance than the mean of portfolio at market based on the Upside-Potential Ratio.

According to the results, it can perceive that assumption of equality of variances in two groups according to the test "Leuven" is not rejected (sig=0.298), thus, with the assumption of equality of variances, p-value=0.644 has been attained for two-tailed test. To obtain appropriate p-value for one-tailed test, the value of 0. 644 is divided to 2. Hence, p-value=0.644would be an appropriate value for the test. According to this value, one can say the zero hypothesis, has to be accepted at 95% assurance level. In other words, statistically there would not be an observer to reject the zero hypotheses.

According to the results, statistically it cannot say that Portfolio consisted of Offensive stock at small-sized companies have better performance than the mean of portfolio based on the Upside-Potential Ratio. As discussed earlier, the value of significance level based on exercising Exact method for one-tailed test has been obtained 0.310 by which there would be no reason for lack of rejecting zero hypothesis.

Statistically, it cannot say that Portfolio consisted of Offensive stock at medium-sized companies have better performance than the mean of portfolio based on the Upside-Potential Ratio. Further, as discussed earlier the value of significance level based on exercising Exact method for one-tailed test has been obtained 0.267 by which there would be no reason for lack of rejecting zero hypothesis.

As discussed above, sum of rank and mean of market portfolio rank has been higher than the rank of portfolio in Offensive big-sized companies. As a result, statistically it cannot say that Portfolio consisted of Offensive stock at big-sized companies have better performance than the mean of portfolio based on the Upside-Potential Ratio.

According to what discussed above, the first sub-hypothesis is not accepted deriving from the second sub-hypothesis, i.e. it cannot say that Portfolio consisted of offensive stock at small, medium and big companies have better performance than the mean of portfolio based on the Upside-Potential Ratio.

The second sub-hypothesis: Portfolio consisted of Defensive stocks at small, medium and big companies have better performance than the mean of portfolio based on the Upside-Potential Ratio.

According to the results, it can perceive that assumption of equality of variances in two groups according to the test "Leuven" is not rejected (sig=0.085), thus, with the assumption of equality of variances, p-value=0.113 has been attained for two-tailed test. To obtain appropriate p-value for one-tailed test, the value of 0. 113 is divided to 2. Hence, p-value=0.057 would be an appropriate value for the test. According to this value, one can say the zero hypothesis, has to be accepted at 95% assurance level. In other words, statistically there would not be an observer to reject the zero hypotheses.

As discussed above, sum of rank and mean of market portfolio rank has been higher than the rank of portfolio in defensive small-sized companies. Hence, it can conclude that statistically at 95% confidence level it cannot say that Portfolio consisted of Defensive stocks at small-sized companies have better performance than the mean of portfolio based on the Upside-Potential Ratio.

According to the results, it can perceive that assumption of equality of variances in two groups according to the test "Leuven" is not rejected (sig=0.047), thus, with the assumption of lack of equality of variances, p-value=0.768 has been attained for two-tailed test. To obtain appropriate p-value for one-tailed test, the value of 0. 768 is divided to 2. Hence, p-value=0.384 would be an appropriate value for the test. According to this value, one can say the zero hypothesis, has to be accepted at 95% assurance level. In other words, statistically there would not be an observer to reject the zero hypotheses.

As discussed above, sum of rank and mean of market portfolio rank has been higher than the rank of portfolio in defensive medium-sized companies. Hence, it can conclude that statistically at 95% confidence level it cannot say that Portfolio consisted of Defensive stocks at medium-sized companies have better performance than the mean of portfolio at market based on the Upside-Potential Ratio.

As discussed above, the mean of Upside-Potential Ratio for portfolio at market in the years studied has been greater than the mean of this index for portfolio at Defensive big-sized companies. Hence, based on the values mentioned in two tables above, it can say that the value for the

performance of exchange index or the very portfolio at market found with better performance; statistically better significant performance rather than the portfolio at market within big-sized companies would be realized.

As discussed above, sum of rank and mean of market portfolio rank has been higher than the rank of portfolio in defensive big-sized companies. Hence, it can conclude that statistically at 95% confidence level it cannot say that Portfolio consisted of Defensive stocks at big-sized companies have better performance than the mean of portfolio based on the Upside-Potential Ratio.
According to what mentioned above, it has to state that the second sub-hypothesis is not derived from the second main hypothesis, i.e. it cannot say that Portfolio consisted of Defensive stocks at small, medium and big companies have better performance than the mean of portfolio based on the Upside-Potential Ratio.

Research Finding

This paper aims to analyze and investigate the stock portfolio of Retirement Fund Investment Company of oil industry Employees. Clearly, it can say this paper aims to analyze and investigate the stock portfolio of Retirement Fund Investment Company of oil industry Employees through the indicators of Upside-Potential Ratio in order to evaluate the investment performance of this company in stock exchange to help the managers in this company to adopt proper decisions for upcoming investments and selection of stock portfolio.
The aims needed to achieve by conducting this research are as follows:
How is the Investment Performance within Stock portfolio of Retirement Fund Investment Company of oil industry Employees?
Whether the company invests the cash provided with it in a proper way in Stock Exchange?
Which group of Offensive or defensive stocks is more proper for the purpose of investing?

Testing research hypotheses and the results of it:
The results of this study shows:

The final conclusion on the first main hypothesis

Portfolio consisted of the stock at small, medium and big companies have not better performance than the mean of portfolio based on the Upside-Potential Ratio.
The second main hypothesis: Portfolio consisted of the stock at small, medium and big companies have better performance than the mean of portfolio based on Upside-Potential Ratio.
Sub- hypotheses
1-Portfolio consisted of Offensive stock at small, medium and big companies have better performance than the mean of portfolio based on the Upside-Potential Ratio.
According to the results, it has to state that the first sub-hypothesis is not derived from the second main hypothesis, i.e. it cannot say that Portfolio consisted of Offensive stock at small, medium and big companies have better performance than the mean of portfolio based on the Upside-Potential Ratio.
2- Portfolio consisted of Defensive stocks at small, medium and big companies have better performance than the mean of portfolio based on the Upside-Potential Ratio.
According to the results, it has to state that the second sub-hypothesis is not derived from the second main hypothesis, i.e. it cannot say that Portfolio consisted of Defensive stocks at small,

medium and big companies have better performance than the mean of portfolio based on the Upside-Potential Ratio.

3- Portfolio consisted of indifferent stocks at small, medium and big companies have better performance than the mean of portfolio based on the Upside-Potential Ratio.
According to the results, it has to state that the third sub-hypothesis is not derived from the second main hypothesis, i.e. it cannot say that Portfolio consisted of indifferent stocks at small, medium and big companies have better performance than the mean of portfolio based on the Upside-Potential Ratio.

The final conclusion on the second main hypothesis

Portfolio consisted of the stock at small, medium and big companies have not better performance than the mean of portfolio based on Upside-Potential Ratio.

Conclusion

The result of this research showed that portfolio consisted of the stock at small, medium and big companies have better performance than the mean of portfolio based on Upside-Potential Ratio.

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