Dynamic Portfolio Optimization with Transaction Cost

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Abstract

The optimal selection of portfolio is one the most important decisions in managing investment funds. Several approaches have been proposed to determine what is the best trading strategy. Most of these common approaches are based on single period optimization, however, as investment is a long-term concept, such short term profit maximization cannot fully exploit the opportunities that an investor might get if he/she looks into a longer term. To this end, in this paper, we intend to extend the single-period optimization into a multi-period optimization and also, to make it more realistic, we will incorporate transaction cost in our model. To investigate the validity of the proposed scheme, we have analyzed several examples using which we have presented the steps of our approach and also statistically compared the performance of the single and multi- period optimization using Mann-Whitney U test. Based on the results of this paper, we can conclude that multi-period and single-period optimization might have similar performance if we look at short time span of the system. However the superiority of multi-period optimization becomes more evident as we extend the time span of the system which gives multi-period scheme more freedom to suggest better portfolio selections.

Key Words: Portfolio, Dynamic Optimization, Transaction Cost, Investment Strategy

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Designing a model for realizing the probability of closing price manipulation in Tehran Stock Exchange

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Abstract

The confidence to market health improves their liquidity and efficiency which is an important matter to capital market and stock exchange. The effect of public confidence to the market on investors' decision is as important as the risk within these markets. Higher risk leads to lower efficiency, dampens market improvement and finally actuates capital to parallel markets. The economic and political news and rumors will directly affect the changes of market index. The effect of information and rumors on investors is reflexed in price changes and trading volume. So stock price manipulators are motivated to propagate wrong information and get illicit profit.

In this research we study the concept of price manipulation, especially closing price, and introduce a model for realizing the probability of closing price manipulation. According to the results stock return, bid & ask price, trading frequency, trading volume and stock turnover determine the closing price manipulation. The relationship among these variables is investigated in econometric models. The Logistic Regression model is used to predict the probability of closing price manipulation. The sample is divided into two groups named manipulators and non-manipulators using run test and sign test. Then the logistic model is run on the basis of the results from these two tests. The estimated relationship confirms the research hypotheses.

Keywords: closing price, manipulation, logit model, bid-ask speard and ….

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The application of robust optimization for index tracking by using of single index model Based on fifty active company index of Tehran stock exchange

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Abstract

One advantage of constructing an equity index fund as a passive approach of investment that follows a predefined strategy is that, this method doesn't need forecasting of stock returns. This approach reduces the transaction costs too. By index tracking the portfolio is diversified and has low transactions. So an equity index fund has low management costs. In this paper we used robust optimization approach for mathematical model that tries to reproduce the performance of an index. Robust optimization method doesn't do any assumption about distribution of uncertain parameters of optimization problem. For this goal we considered fifty more active company index of Tehran stock exchange as target index from 1390/7/1 to 1392/10/1. The results of out of sample experiment shows that the tracking error of portfolio that constructed by robust model is lower than portfolio that constructed by non robust model. These results shows that using robust optimization approach to considering the uncertainty of parameters can improve the performance of model.

Keywords: index tracker portfolio, robust optimization, single factor model, tracking error

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Active portfolio management with bench marking : Adding a Value-at-Risk constraint

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Abstract

This research has been done for scientific purposes to determine portfolio model and practical purposes from testing TEV and VaR models in Iran Capital Market .To done research, variables EPS,NI,MV,BV,CFO and MTB for 77 companies in Tehran Stock Exchenge from 1386 to 1391.Have been used to estimate VaR with using VaR and CVaR and GARCH models, at first ,data loaded in software. By using these 3 models , VaR has been estimated for all 77 companies .The reason of estimation VaR by using CVaR shows that VaR in the certainty levels 1%,5%,10% are different with each other. By increase the certainly levels, VaR increase ,too. Also, the reason of Kupic testing shows that two models are reliable and attributable .At the end of study to ranking two models ,Lopez testing has been carried out based on which the number of errors for CVaR model is less than GARCH model.

Keywords: GARCH , TEV , VaR

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The Capability of comparison of nonparametric models and Nero net in calculation of value at risk of portfolio of investment companies for determining the optimum portfolio in capital market of Iran

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Abstract

Risk is not separable from the life of human in the whole history. So noticing to the risk was always existing. Evaluating risk were existing in different ways. In today's world which is so complicated understanding and calculating of the risk has become so difficult. This calculation has become so difficult in financial market more. So there are many ways for this calculation from the simplest to the easiest. With regard to development in each country without investment there would be no develop. So ever investor for investment will need to item one is return and the other one is risk. . calculating return is not so much difficult, but the calculation of risk is so difficult and is a qualitative variable. So for answering the need of investors many ways emerged to solve and explain the risk. Between existing models two kind of models nonparametric and Nero net are investigated in this research in order to predict the value at risk of 21 investment companies in capital market of Iran. Then the best model is presented.

Keywords: Risk, Return, Portfolio, Value at Risk, Investment Companies, Nonparametric Method, Nero networke.

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Designing a Comprehensive Model for Venture Capital

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Abstract

Since the uncertainty in venture capital structure, there are so many challenges with banks and financial institute's decisions about their portfolio. According to literature, the most important challenges in this area are business management, supervision on facility expenditure and appropriate Islamic contract. It is clear that the proposing a new approach for venture decisions needs to consider these challenges in an acceptable method. This paper at first tries to specify the Iranian bank challenges in venture capital decisions and then introduces a novel comprehensive model to cover them. Finally the results of using this model in financial institutes are outlined at the end of the paper.

Keywords: Venture Capital, Finance, Islamic Contract, Exit Strategy.

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Higher moment portfolio optimization under fuzzy environment

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Abstract

Uncertainty of Return of assets is one of the challenges for the investors. Researchers have used different approaches for return modeling including fuzzy logic. On the other hand, many studies are shown that assets return is abnormal and asymmetric and besides mean and variance investor prefer to consider skewness and kurtosis. This paper has presented a model based on higher moments (skewness and kurtosis) for portfolio optimization problem. Credibility theory has been used for parameter calculation. In addition, economic performance measurement has been applied in order to compare this model with mean-variance model. Making use of Tehran Stock Exchange data, it is concluded that considering higher moment leads to higher efficiency in portfolio.

Keywords: Fuzzy portfolio optimization; mean-entropy-skewness; credibility theory; economic performance measurement.

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Application of Dematel , ANP and Topsis in portfolio prioritizing

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Abstract

The purpose of this paper is to provide a comprehensive approach that can Show dependencies between financial ratios and Selecting Best Portfolio and Helping investors. This study seeks to answer these questions which are important criteria, correlation and association between preference criteria and what is the criteria for selecting the most appropriate investment portfolio? For answering to the above questions at first step we are making causality between five financial ratio with using the DEMATEL, and then making internal relationship between the set of criterion. We are using the ANP for getting the financial ratio. at the final step we are using TOPSIS for ranking the exchange companies. Required data is Include financial indicators of investment company and Holding accepted in Tehran Stock Exchange for the period 1384-1389. The results show three criteria: return on total assets, net profit margin and gross profit margin of profitability are owned by their highest degree of importance.

Keywords: MCDM, DEMATEL , ANP , Topsis , Financial Ratios

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Compare the Return of Technical Indicator Using Fuzzy and Hybrid Fuzzy, Genetic Algorithm

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Abstract

Gain more return is the main purposes of investors in financial markets. Base on Tehran stock Exchange is non-efficient market, technical analysis is one the useful tools and techniques to buy and sell. In this research trading based on technical indicators are used with fuzzy logic decision making and optimization and decision making by hybrid fuzzy genetic modelThe period of research is between Mar 2009 to Feb 2013 and 4 years for learning and 1 year for test. Samples are 50 most active trading stocks in TSE select by optimization. final sample is the symbol that the rank of technical indicator return have no significant differences in learning during learning phase .the best indicator for trading are selected based on historical data and learning phase. Trading done by powerfulness of signals. The results shown that fuzzy and fuzzy genetic have more and significant return in compare of buy and hold.

Keywords: Technical Indicator , Fuzzy Logic , Genetic Algorithm , Hybrid Algorithm , Buy and Hold

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