Using Multi objective particle swarm optimization (MOPSO) algorithms to solve a multi-period Mean-Semivariance-Skewness stochastic optimization model

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Abstract
Financial optimization is one of the most attractive areas in decision-making under uncertainty. Portfolio selection problem is a classical financial problem but it relies on three restrictive assumptions. In this paper, we propose the multi-stage mean-semivariance-Skewness portfolio optimization problem under transaction cost. Solving the multi-stage portfolio optimization problem is very challenging due to nonlinearity of the problem. Having modeled the problem, both particle swarm optimization and multi objective particle swarm optimization (MOPSO) algorithm are utilized to solve the presented model. Finally, some numerical examples are given to illustrate the effectiveness of the proposed approach and the feasibility of the MOPSO algorithm.

Keywords: Multi-stage portfolio optimization, Mean-Semivariance-Skewness, Scenario tree, Transaction cost, Multi objective particle swarm optimization (MOPSO).

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Portfolio Selection Criteria Analysis Using Dematel

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Abstract
The main objective of this study is portfolio selection criteria analysis using Dematel of Criteria Decision Making Techniques. Society of the research is the finance and investment of manager belongs to the all stock companies. And instrument used questionnaires to a total of 15 questionnaires distributed among experts in capital markets, and finally 10 questionnaires were collected to answer research questions and data analysis methods were used Dematel. The analysis criteria using the techniques presented Dematel determined that the eight criteria for the selection of the portfolio, the measure of sales growth for the most affect on other criteria, and the biggest factor is the weight of the entire system. Also the price earnings ratio is more affected than other measures. Sales growth is a weighted measure of the total system. That is the most important criterion and has the greatest influence on the sorrow of the whole system.

The results of this study can be used for investment companies, financial manager’s banks and banking insurance agencies, researchers and general investors have implications.

Keywords: Portfolio Analysis, MCDM, Dematel.

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Linear programming for portfolio optimization with fuzzy return rates and risks

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Abstract
Portfolio selection is an important issue for researchers and practitioners. The portfolio must incorporate what the investor believes to be an acceptable balance between risk and reward. The classical Markowitz model uses the variance as the risk measure and is a quadratic programming problem, which is difficult to find the global optimal solution for those problems. Many attempts have been made to linearize the portfolio optimization problem. This paper presents a linear fuzzy portfolio selection model with fuzzy return rates and risks, where the objective is to minimize the downside risk constrained so that a given expected return should be achieved. Furthermore, the proposed approach is demonstrated and validated by a numerical example from real stocks dataset obtainable from Tehran stock exchange market.

Keywords: Portfolio selection problem, Fuzzy programming, linear programming problem, downside beta

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Predicting Stock Price Manipulation in Capital Market

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Abstract

The current article aims at developing econometric and network structure-based methods capable of detecting price manipulation in Tehran Stock Exchange (TSE). Through the sample separation method, a sample population of 415 companies accepted in TSE were singled out. The data on these companies’ price and trade volume between 2001 and 2012 was gathered. Performing runs test, skewness test, and duration correlative test the companies were divided into the groups of Manipulated Companies (MC) and Non-manipulated Companies (NC). In order to pinpoint the price manipulation initiation date, the cumulative return process and trade volumes of the MCs were closely investigated. In this way, the Logistic Regression Model (logit), Artificial Neural Network (ANN), Multiple Discriminant Analysis (MDA), Support Vector Machine (SVM) and Gaussian Mixture Model (GMM) were carried out. Using company size, information clarity, P/E ratio, stock liquidity in the year prior to the price manipulation, a predictive model of price manipulation of the TSE present companies was developed. Finally, the predictive power of the model was studied, using the data gathered from the sample companies. The predictive power of logit model for test set was 92.1%, for artificial neural network was 94.1%, and multiple discriminant analysis model was 90.2%; therefore, all of the 3 aforementioned models have a high power to forecast price manipulation and there is no considerable difference among forecasting power of these 3 models. It should be mentioned that the SVM has a margin of error in predicting and detecting price manipulation; in addition, GMM was incapable of detecting price manipulation in TSE and was hence decided as inappropriate for detecting MCs and NCs.

Keywords: Price Manipulation, Liquidity, Size of Company, Floating Stock, Information Clarity.

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The Investigation of Asymmetry in Speed of Capital Structure Adjustment: Dynamic Panel Threshold Models

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Abstract
Usually firms have deviated from their target leverage. They may adjust to target leverage only occasionally, when the benefits of this adjustment exceed the costs. According to dynamic trade-off theory can be argued that firms faced different adjustment costs due to their specific characteristics, so they move toward their target leverage with different speeds. Hence, in this paper asymmetry in speed of capital structure adjustment in the listed companies in Tehran Stock Exchange, has been studied. In this paper, information related to 115 firms over the period 2003-2012 was collected and threshold partial adjustment model and generalized methods of moments estimator, were used. The results show that firms with large financing deficit, large investment, low profitability and low earnings volatility adjust their capital structure faster than those with the opposite characteristics. In fact, these firms have more motivation for adjusting their capital structure because of encountering higher financial distress costs or lower costs of adjustment. Generally, the research results indicate that studies firms move to their target leverage with different speeds.

Keyword: Target Leverage, Speed of Adjustment, Dynamic Panel Threshold Model, Dynamic Trade-off Theory, Adjustment Costs.

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Study of Relationship between liquidity risk and market risk using returns of growth and value stocks with AHP model approach in Tehran Stock Exchange

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Abstract

Identify suitable Criteria for selecting stocks that have higher returns with lower risk of major issues facing investors and investment management by the principal subjects. Paradigm have been studied in the present study of various aspects about value and growth investment have been studied. This research field of study consisted of listed companies in Tehran Stock Exchange, the sample is of the 131 firms for the period 2007 to 2011. In the first sample by Overall weight each of the seven measure (hagen six Factor measure plus P/E measure). Through the AHP model, then the breakdown and ranked stocks in each of the years of the study was to analyze the SAW model. Furthermore the importance of the relationship between risk and return, the impact of systemic risk and illiquidity risk on stock returns has been studied.

The results show that there is an inverse linear relationship between the market risk (beta) and the real return on growth stocks. This relationship is strong and meaningful. On the other hand there is a direct linear relationship between market risk (beta) and real return on value stocks. Also, results of this research show that there is a positive linear relationship between the real returns, liquidity risk and growth stocks and value (both). But the amount and intensity of the relationship between liquidity risk and real return in the growth companies is much greater than the company value.

Keyword: Illiquidity risk, Systemic risk, value investment, growth investment, Return per share

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The predictive power of quarterly earnings per share based on time series and Multilayer Perceptron (MLP) Models

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Abstract
Anticipated earnings per share and evaluate the usefulness of past earnings for forecast, has long been of interest. And for this purpose the different methods and models to predict future corporate profits are used. In this regard, the present study, Autoregressive Integrated Moving Average (ARIMA) and Artificial Neural Network (Multilayer Perceptron MLP) has been used to predict quarterly earnings of companies listed on the stock market and bonds Tehran Stock, based on quarterly data for the years 1386 to 1391 was performed. Results showed that Multilayer Perceptron has a lower error in forecasting the quarterly earnings per share and also it significantly was more accurate than ARIMA model.

Keywords: quarterly earnings per share, Multilayer Perceptron (MLP), Autoregressive Integrated Moving Average (ARIMA)

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Examines the impacts of the factors affecting on the subscription warrant use of housing facilities by using Auto regressive Distributed Lag

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Abstract
This paper applies examines the direct and indirect impacts of the factors affecting on the subscription warrant use of housing facilities price for the period of 2006-2012 by using Auto regressive Distributed Lag (ARDL) Banerjee, Dolado & Master Testing approach. The empirical results reveal at estimated direct impact variables, Land prices and deposits interest rates privileged, Exchange rate other than inflation is cointegrated and They have a long term relationship. Land prices and the exchange rate has a significant negative impact and inflation rate has insignificant impact on the the subscription warrant use of housing facilities price In Iran. Also at estimate the indirect effects of variables, Land prices vary because the key variables to be considered as the dependent variable Represents the conclusion that variable the inflation rate Exchange rates other than variable deposits interest rates privileged is cointegrated and They have a long term relationship. Inflation rate Exchange rates has a significant positive impact and deposits interest rates privileged rate has insignificant impact on the the subscription warrant use of housing facilities price In Iran. These variables influence the market price of the land price variable subscription warrant will fluctuate as indirectly.

Keywords: subscription warrant, Privileged Account Holders Interest Rate, Banerjee, Dolado & Master Testing, cointegrated, Auto regressive Distributed Lag

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