STOCKS SELECTION FOR PORTFOLIO OPTIMAL WITH LEXICOGRAPHIC GOAL PROGRAMMING

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Abstract

Portfolio is a combination of several stocks. Problems in the portfolio is with so many types of stocks how to select and allocate a number of assets owned in order to obtain optimal results, namely maximizing expected return and minimize risk. Risk in the portfolio divided by two is unsystematic risk and systematic risk. Systematic risk or market risk is what needs to be considered in stock investment because the risk is still there even though diversification made. This risk is measured by a risk coefficient beta (β) stating sensitivity of a stock to market changes. The greater the beta of a stock (more than 1), these stocks will be increasingly at risk. Based on the problems mentioned above, in this final project apply optimization techniques with lexicographic goal programming or preemptive goal programming to help the determination of the optimal portfolio by considering the following criteria: amount of the assets owned, maximizing expected return while minimizing market risk (coefficient risk beta), where all three criteria are assumed to have a priority or a different profit level.

Data used in this final project is all the data listed in Indonesia Stock Exchange (IDX) and the actively traded since January 2009-September 2010. To obtain stocks of the most actively traded, selected stock ratings compiled by IDX based on "50 Most Active Stocks by Trading Volume", which later after selected with due regard to the value of the correlation between stock returns obtained 18 stock portfolio of superior candidates.
Portfolio optimization model that formed solved by LINGO 12, of the 18 stocks 12 stocks selected that form the optimal portfolio with an optimal result that is expected portfolio return of 0.060980 or 6.0980%, variance and standard deviation of the portfolio amounted to 0.005984 or 0.5984% and 0.077355 or 7.7355% and beta risk coefficient for portfolio 1 ($\beta_p = 1$).

Key word: Portfolio selection, Optimal portfolio, Multi-objective Programming, Lexicographic Goal Programming.