Czech University of Life Sciences Prague

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Bachelor Thesis Abstract

Creation of an optimal stock portfolio

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Summary:

This work is devoted to the creation of an optimal portfolio of securities. In the theoretical part, the methods of creating a portfolio of securities were considered, the schemes for analyzing these methods, their advantages and disadvantages, and the application of these schemes to the securities market were indicated.

The central part of the work will be devoted to the main methods of forming the optimal structure of the investment portfolio: the models of Fama French, the Sharpe index model.

In the practical part Sharpe model and Fama French model were evaluated.
We defined which asset-pricing model best explains the variation in stock returns on the stock market.

Key words: stock, portfolio investment, investment, CAPM model, Fama French

Introduction

The two most important decisions that a private investor has to take care how much money to invest and where to invest, financial consultants like to repeat. The primary factor that determines the profitability of investments is usually considered the distribution of assets in the portfolio: how much money is invested in stocks, bonds, bank deposits, as well as in real estate, precious metals, etc.

Current practice shows that a portfolio that is uniform in content does not provide a stable return to the portfolio holder. That is why the diversified portfolio, a portfolio of the most various securities is more widespread.

The current state of the financial market makes it necessary to react quickly and adequately to its changes. Therefore the role of investment portfolio management sharply increases and lies in finding the boundary between liquidity, profitability and risk that would allow choosing the optimal portfolio structure. Various strategic models serve this purpose. In this paper, an attempt will be made toanalyse the primary methods of formation of an

optimal portfolio of securities, which are currently popular with investors and financial market analysts.

The scheme of analysis of these methods, their advantages and disadvantages will be indicated, as well as the application of these schemes to the securities market.

Objectives

The purpose of the course is to study the specifics of Creation of an Optimal Stock Portfolio.
Determination of the structure of the Stock Portfolio.
Use of the models of Fama French, the Sharpe index model in practice, to determine the effectiveness of this approach.

Methodology

In the course of the work, I will try to consider what the stock portfolio is and what their species exist. Consider the classification of risks, taking into account their risk models. And the main part of the work will be devoted to the main methods of formation of the optimal structure of the investment portfolio: model Markowitz, Sharpe's index model and a model for valuing long-term assets. We give practical application of some models.

In thesis work, an attempt will be made to analyze the main methods of forming an optimal portfolio of securities, which are currently popular with investors and financial market analysts. The scheme of analysis of these methods, their advantages and disadvantages will be indicated, as well as the application of these schemes to the securities market

Conclusion

In the course of the work, the main portfolio theories were analyzed and evaluated within the framework of existing economic conditions. Using the provisions of the Markowitz theories, diversified and optimal portfolios dramatically improves the quality of the portfolio. Thus, the inclusion in the portfolio of assets with the lowest correlation reduces the overall portfolio risk, as well as diversification by sectors of the economy, investing in

more assets.

The result of the research is also an analysis of the process of formation and management of the securities portfolio in practice. The advantages and disadvantages of the principal investment strategies in the formation of the portfolio were identified. However, the choice of the most suitable for the market in the post-crisis period remains a debatable issue.

In this thesis was the assessment of the reliability of the CAPM, the Fama and French Model. The sample covers 120 monthly observations for the sample period January 2004 to January 2014. In this study it is found that, contrary to what Fama and French (1993) found, big firms outperform small firms. In other words, investors holding large cap stocks seem to enjoy higher returns than investors holding small cap stocks.

As the results showed, in neither of the long-term periods (economic decline and recovery), neither CAPM nor Fama-French showed close to real results. The coefficient of the Alpha coefficient in all cases was significantly above zero.
Furthermore, there appears to be a positive value effect. Firms with a high (BE/ME) perform better than firms with a low (BE/ME).

The findings about the risk premium appear to suggest that there is time-period bias or a data-fishing bias in the data. Data-fishing may be caused by the use of multiple factors in the model. A possibility is that there is no true causal relation in the series, which makes the regression illegitimate. Moreover, the big market effect contradicts previous literature, which implies that on average, small firms do better. The above contradictions and inverse risk-return relationship seem to distort the robustness of the models in explaining excess stock returns. Therefore, further testing in different sub periods is necessary. It is also recommended to use a larger sample size in order to prevent time-period bias. Lastly, it is worth mentioning that these models were tested on the U.S. stock market, which is significantly larger. The relative small size of the Dutch stock market in terms of firms compared to the U.S. stock market is also likely to distort the results.

The Fama and French Three-Factor model does slightly a better job in explaining the

excess stock returns than the CAPM does. The intercept estimates across all portfolios are lower than those found using the CAPM. Furthermore, Fama and French argue there are not many portfolios for which the t-statistic is larger than when using the Fama model compared to the CAPM.

The distortion of results is mainly caused by the inverse relationship of firm size and excess stock returns.

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