

Investigating the Synchronization between the Return of Mutual Funds and Tehran Stock Exchange

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Abstract

Purpose: The purpose of this research is to examine the dynamics of conditional correlation between the returns of mutual investment funds (4 selected funds) and the return of the total index of the Tehran Stock Exchange during the period from the beginning of September 2013 to the end of Faroudin 1400.

Method: In order to achieve this goal, dynamic conditional correlation (DCC) and asymmetric dynamic conditional correlation (ADCC) econometric techniques, which are multivariate conditional heterogeneous variance (MGARCH) models, have been used.

Results: The results of the estimation of EGARCH models for conditional variances indicate that there is asymmetry in the conditional variance equation for all the return series (other than the output of the Export Development Fund), so that bad news more than well news cause to further increased the turbulence of returns. The results of the DCC and ADCC models showed that the asymmetric parameter is only significant between the total returns of the market and the return on the brokerage business, and in other models, in the conventional level of knowledge, there is evidence of asymmetry in conditional correlations Does not exist.

Conclusion: The results of the current research indicate that bad news has a greater impact than good news on the status of funds; In fact, funds are conservative in the face of good news and relatively passive in the face of bad news.

Contribution: The lack of sufficient strength in facing the market with bad news can be considered as the major problem of investment funds.


Keywords: Mutual Funds, Tehran Stock Exchange, Synchronization, Conditional Variance, Conditional Correlation.

Research Article

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Introduction

The role and importance of the financial system in the development process of countries is such that the difference between developed and developing economies can be found in the degree of efficiency and effectiveness of their financial system. The development of financial markets is a category that has received the attention of economists following the discussions of globalization and financial integration after the 1970s (Taibi et al., 2019). The stock exchange as one of the most important financial markets is very important in terms of development. As one of the financial markets where shares of companies and economic enterprises are bought and sold, the stock market has a high importance and role in the macro economy (Akbari Roshan and Shakri, 2013). Today, the stock market is considered as one of the most advanced capital development tools. The stock exchange is the place to convert real assets into paper wealth, because for the real assets (money, cash, non-cash contributions, property, etc.) that the shareholders present to buy shares, they are given a piece of paper that shows the giver of wealth is their shares. If we accept that the stock market is the place of capital and the investment and production capacities of a country, the volume of transactions, the amount of stock supply and the sum of profits and stock returns should reflect the full view of the country's economic situation (Fazli et al., 2019). In the securities markets, due to the complexity of the decision-making process for investing in securities and the significant increase in the volume and speed of information circulation and the specialization of activities, the acceptance of collective investments, especially in the form of investment funds, is growing day by day. Investment funds have been formed by taking into account the investors' preferences and their risk tolerance, in other words, to respond to the wishes of different investors with different structures and mechanisms. The main activity of these funds is investing in securities or physical assets, which are considered as the fund's basic asset. Therefore, the fund's performance depends on the type of fund's base asset (Moradzadeh Fard et al., 2014).

The purpose of this research is to investigate the dynamics of correlation between mutual investment funds and the return of the total index of the Tehran Stock Exchange during the period from the beginning of September 2013 to the end of Faroudin 1400. In order to achieve this goal, dynamic conditional correlation (DCC) and asymmetric dynamic conditional correlation (ADCC) econometric techniques, which are multivariate conditional heterogeneous variance (MGARCH) models, have been used. This article is organized in six sections. So that after the introduction, theoretical foundations are discussed in the second part and experimental studies are discussed in the third part. The fourth section introduces the model and the data used, and the fifth section is devoted to the experimental results. Finally, the summary and conclusion are presented in the sixth section.

Research Methodology

In this research, the asymmetry in the conditional variance as well as the asymmetry in the conditional correlations between the return of the total index of the Tehran Stock Exchange and the return of a number of joint investment funds are studied. Among the three general groups of types of mutual investment funds, which include mutual investment funds in shares, mutual investment funds with fixed income and mixed mutual investment funds, in this study, the number of 4 funds (based on the availability of information on need in the desired time period) is selected as described in table (1).

Table (1): List of variables used in the research

symbol	Definition
Rtepix (1)	Daily return of total index of Tehran Stock Exchange
Mtejarat (2)	Daily return of trading brokerage fund (mixed)
Skeshavarzi (3)	Daily return of agricultural fund (stocks)
Ssaderat (4)	Daily return of export development fund (shares)
Marmaghan (5)	Daily return of Armaghane 1st Nations Fund (mixed)

In this study, in order to check the asymmetry in the conditional variance of each of the studied variables, the autoregression model with exponential conditional variance heterogeneity (EGARCH) was used, and in order to check the asymmetry in the conditional correlations, the dynamic conditional correlation (DCC) model was used.) and asymmetric dynamic conditional correlation (ADCC) have been used. The time period of the current research was from the beginning of September 2013 to the end of Faroudin 1400 and the required data was extracted from the website of Iran's Financial Information Processing Center. The estimation of the mentioned models has also been done in OxMetrics7.2 software. For the sake of brevity, only DCC and ADCC models have been introduced in the following. Those interested in studying the EGARCH model can refer to Nelson (1991).

Results and Discussion

The coefficients show that there is a positive correlation between the returns of the total stock market index and mutual investment funds. The lowest value for the correlation between Armaghane 1st of Nations Fund (mixed fund) and Saderat Joint Investment Fund (equity fund) is estimated at 0.281, and the highest positive correlation is between the return of the total index and the agricultural fund (equity fund) with a value of 0.739. 0 is estimated.

Conclusion

According to the results of DCC model and ADCC model estimation, it can be seen that alpha and beta parameters are non-negative in all the second and second models and their sum is less than one and due to the positive and significant parameter Alpha (alpha) in all models (with the exception of the MGARCH model between the return of the total market and the return of the Armaghane First Nations Fund) it can be stated that in the event of a shock in the return series, it is expected that in the next period, the conditional correlation between the return of the stock market index And increase the yield of mutual investment funds. The

beta parameter also expresses the effect of the conditional correlation of the previous period on the conditional correlation of the current period. The value of the estimated beta parameter in all models was greater than 0.9. It should be noted that the larger this parameter is and the closer it is to 1, it indicates stability in the estimated conditional correlations and therefore it is expected that for each pair of calculated correlations, the conditional correlations of the current period will be close to the correlation. Provided it is the previous course.

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