Investigating Motivations Risk Shift Mutual Funds Managers in Bullish and Bearish Market And its Impact on Return[1]

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INTRODUCTION

The incentives of fund managers and their superior capabilities in investing and managing them are two explanations for the changes in risk of joint venture funds in different market conditions. In this research, we analyze 21 mutual funds in the stock market over a period of 79 months from August 2011 to March 2018, using the least squares method to examine the incentives for risk management of mutual funds in stocks and its effect on return on investment. The results of the research show that in bull markets, there is a motivation to compensate for losses, as managers of these funds increase the level of risk, leading to increased returns in future periods. Conversely, managers of winning funds, who exhibit superior investment ability, reduce the risk of the fund and increase returns in future periods.

According to the results, in bearish markets, managers will reduce their future returns by increasing the risk of the fund, reflecting organizational weaknesses or the managers' lack of skills in investing. In contrast, managers who reduce the risk level of the fund seek to increase the return in the fund's future period, motivated by the managers' career concerns.

MATERIALS AND METHODS

Due to the recent emergence of investment funds in Iran and the limited literature available, only a small number of exchange-traded funds (ETFs) were available for the present study. Consequently, to augment the number of observations and thereby enhance the reliability of the results, information from (non-tradable) mutual funds was incorporated into the study.

Given that the current study aims to investigate and delineate managers' motivations in bull and bear markets and their impact on mutual fund returns, it is characterized as applied in terms of purpose and descriptive-correlational in terms of nature and method.

The requisite data were collected on a daily and monthly basis from the websites of the Tehran Stock Exchange, the Financial Information Processing Center of Iran, and the individual fund websites. Regression models were fitted using ordinary and generalized least squares methods. The statistical population of this study comprises all mutual funds active in the Tehran Stock Exchange during the 79-month period from September 2011 to March 2017, with a sample of 21 mutual funds selected for analysis.

In addition, this study employed two regression models following the approach outlined by Popescu and Zu (2017). Regression model (1) examines the relationship between changes in fund risk and the return of the future period, while regression model (2) delves into the relationship between changes in risk during bull and bear markets and the return of the future period of mutual funds. Moreover, to further explore this relationship, we differentiate between funds whose returns for the period under consideration exceed (or fall below) the average return of all member funds in the sample, labeling them as winner (or loser) funds. Subsequently, we rerun the aforementioned regression models for both winner and loser funds to obtain more robust insights into the motivation to alter risk under varying market conditions and its relationship with the return of mutual funds in the stocks of the statistical sample of the study.

$$R_{i,t}=\alpha_{i,t}+\beta_1 {}^*P_{i,t-1}+\beta_2 {}^*N_{i,t-1}+\beta_3 {}^*R_{i,t-1}+\beta_4 {}^*S_{i,t-1}+\beta_5 {}^*C_{i,t-1}+\beta_6 {}^*E_{i,t-1}+\beta_7 {}^*T_{i,t-1} + \beta_8 {}^*G_{i,t-1}+\varepsilon_{i,t} \tag{1}$$

$$R_{i,t}=\alpha_{i,t}+\beta_1 {}^*(P_{i,t-1} {}^*up)+\beta_2 {}^*(N_{i,t-1} {}^*up)+\beta_3 {}^*(P_{i,t-1} {}^*down)+\beta_4 {}^*(N_{i,t-1} {}^*down)$$
$$+\beta_5 {}^*R_{i,t-1}+\beta_6 {}^*S_{i,t-1}+\beta_7 {}^*C_{i,t-1}+\beta_8 {}^*E_{i,t-1}+\beta_9 {}^*T_{i,t-1}+\beta_{10} {}^*G_{i,t-1}+\varepsilon_{i,t} \tag{2}$$

The variables of the proposed regression models are listed below.
Dependent variable:
R: fund return
Independent variables:
   P: positive risk change of the fund
   N: change in the negative risk of the fund
   P_{t-1}*up: change in positive risk in the bull market
   N_{t-1}*up: negative risk change in the bull market
   P_{t-1}*down: positive risk change in a bear market
   N_{t-1}*down: negative risk change in a bear market
Control variables:
   S: natural logarithm of total assets (fund size)

C: cash of the fund

E: fund expenses

T: fund activity ratio

G: fund age

In addition, Up and Down are dummy variables for bull and bear markets respectively, so that the dummy variable Up (Down) value is 1 if the market is bullish (down).

RESULTS AND DISCUSSION

The study results indicate that under varying conditions, a 1% increase in the risk level of winner funds results in a 0.654% decrease in returns in the subsequent period. This decrease could stem from organizational weaknesses or managers' inadequate skills in investing. Conversely, the risk level decreases across all funds and winner funds, boosting future returns. Specifically, a 1% decrease in the fund's risk level corresponds to a 0.836% increase in future returns across all funds and a 1.973% increase under winner fund conditions. These findings underscore the superior investing skills of fund managers in line with theoretical foundations.

To further elucidate the motivations behind changes in fund risk levels, we compare below the impact of risk level changes on fund returns between loser and winner funds under different market conditions.

In bull markets, where compensation incentives are more pronounced, a 1% increase in the risk level of loser funds corresponds to a substantial 4.537% increase in future returns. This suggests that loser funds are strongly incentivized to elevate their portfolio risk to match the returns of winner funds. Furthermore, a 1% decrease in risk level in bull markets leads to a 1.612% increase in future returns under general review conditions, a 2.103% increase under winner fund review conditions, and a decrease of 1.309% in future returns for loser funds. These findings highlight the predominance of investment skill motivation, with the best managers excelling in both general conditions and winner fund scenarios.

On the contrary, in bear markets where job concerns take precedence, the results demonstrate a negative and significant coefficient of influence on increasing the risk level of the fund across all studied conditions. According to theoretical principles, this signifies organizational weaknesses and shortcomings in managers' investment skills. Hence, it cannot be unequivocally stated that all winner funds are managed by individuals with superior investment skills. However, based on the coefficients derived from model fitting across various study conditions, it can be inferred that the negative impact on future returns due to organizational weaknesses and managerial shortcomings is more pronounced for winner funds than for loser funds. Consequently, winner funds exhibit greater sensitivity to organizational weaknesses and weak managerial skills, resulting in more substantial negative consequences, such as reductions in future fund returns.

Moreover, reducing the risk level of the fund in bear markets yields a positive impact factor across all study conditions examined. For instance, when the risk level of the fund with future returns is reduced by 1% under general review conditions, winner funds and loser funds experience increases of 2.021%, 1.147%, and 0.704%, respectively. Consequently, during bear markets characterized by employment

concerns, funds tend to mitigate portfolio risk, thereby reducing the likelihood of job losses.

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