

the year 2009, it makes an empirical analysis on the effects of fund performance, interaction between fund performance and characteristics of fund manager on fund manager turnover in 2010 year. The data sample is composed of 222 funds, including 75 fund manager turnover samples and 147 not turnover samples. All the data originate from CSMAR database and Genius database in China.

Previous papers have employed a variety of methodologies to measure the fund performance. In order to fully reflect the fund performance, this paper from several perspectives to measure it, such as fund return rate, fund excess return rate (beyond the index return rate over the same period), risk-adjusted fund performance (Sharpe index, Treynor index, Jensen index), and the capability of the market-timing and stock-selection of fund managers.

### Assumption

Fund performance is the direct indicator of the operating capability of fund manager, and the fund companies always make career plan and adjustment for fund manager according to his fund performance. Currently, closed-end fund promulgates net assets value, net worth growth ratio and rank, etc. Usually, the fund whose performance ranking in the top can often be noticed by the investors and brings the continuous injection of new capital; while the fund whose rank is lagged is incapable of attracting investment or even leads to a large area of redemption. Therefore, under the pressure of short-term performance ranking, the fund companies have to make adjustment of fund manager according to fund performance, especially when the fund performance declines. And they have to make adjustment of fund manager so as to retrieve the trust of their investors.

1) *Assumption 1: Fund performance makes negative effect on fund manager turnover.*

The character of fund manager will impact the relationship between the fund performance and fund manager turnover. This paper mainly considers three aspects including fund manager age, securities working time and the working time on one fund. In addition, we assume that the older the fund manager is and the longer the securities working time is, the more plentiful the practical experiences are and the more calmly the fund manager copes with the market, and his adjustment is less sensitive to his performance, even though his short-term performance is poor, the fund company is relatively unlikely to adjust him. Galaxy Securities researcher Yongan Ma declaims that juvenility is not a good thing for investment since this is after all a kind of activity that one can upgrade through long-term exercise. Thus, the interaction between fund manager age, securities working time and fund performance will mitigate the inflection of fund performance to manager turnover, likewise, when the working time on one fund is longer, the fund manager has built long-term cooperating relationship with the fund company, and the fund company is more likely to indulge the fund manager whose securities working time is longer especially facing the current condition of serious lack of fund manager talents, thus the interaction between the working time on one fund and fund performance decreases the inflection of fund performance to manager turnover.

2) *Assumption 2: Fund manager age, securities working time and the working on one fund will mitigate the negative correlation between fund performance and fund manager turnover.*

### Data Statistics and Analysis

In this study, we estimate the probability of management turnover using a logistic regression framework using SPSS17.0. The regression equation is:

$$\ln \frac{p}{1-p} = \alpha + \beta_0 X + \sum_{i=1}^3 \beta_i XZ_i$$

$P$  is the probability of fund manager turnover,  $x$  is fund performance indicator,  $Z_i$  represents the character of fund manager which consists of fund manager age, securities working time and the working time on one fund.

In order to avoid the impact of crucial independent variable (performance) and high correlation between interactive variables on the result of regression analysis, this paper makes centralization process for interactive variables, and then we have

$$XZ = (X - \bar{X})(Z - \bar{Z})$$

1) *The analysis of the effect of fund returns on fund manager turnover*

Firstly, based on fund returns and fund excess returns, this paper makes an empirical research on the effects of fund performance on fund manager turnover by SPSS17.0 software. The results are shown in Table 1 and Table 2.

Table 1.  
Fund manager turnover Logistic Regression Analysis based on fund returns rate.

Variable	Regression Coefficient	Regression Coefficient Standard Error	Wald	Sig.
Constant	0.273	0.605	0.204	0.652
Returns rate	-4.768	2.783	2.934	0.087
Returns rate * Age	3.002	1.241	5.852	.016
Returns rate * Securities working time	-0.187	0.829	0.051	0.822
Returns rate * The working time on one fund	-0.071	0.202	0.123	0.726
Model degree of fitting	Chi-square = 11.259		Sig = 0.024	

Table 2.  
Fund manager turnover Logistic Regression Analysis based on fund excess returns rate.

Variable	Regression Coefficient	Regression Coefficient Standard Error	Wald	Sig.
Constant	-0.945	0.194	23.818	0.000
Excess returns rate	-4.759	2.783	2.924	0.087
Excess returns rate * Age	3.005	1.242	5.852	0.016
Excess returns rate * Securities working time	-0.177	0.829	0.046	0.831
Excess returns rate * The working time on one fund	-0.067	0.202	0.111	0.739
Model degree of fitting	Chi-square = 11.251		Sig = 0.044	