The Influencing Factors of Performance of China's Stock-type Public Mutual Funds-Based on Fund Characteristics and Market Macro Indicators

Xinyi Yu

School of Management, Zhejiang University of Finance and Economics, Hangzhou 310000, China
yxy191825@outlook.com

Abstract. Being a significant instrument of resource allocation among the inhabitants, the stocks-based public funds rely on their properties and market circumstances. This paper uses samples in the performance of fund performance using the monthly excess returns of using 35 Chinese equity mutual funds in the years 2018 to 2023. The empirical analysis is based on a panel data fixed effects model to study two major dimensions including fund characteristics (scale and management fees) and macroeconomic variables including market returns and Consumer Price Index (CPI) and Broad Measure of Money supply (M2), to determine the regulators of fund performance. The analysis indicates that the market returns have a strong positive impact on the performance of the funds and the fund size has a weak negative impact on the performance. This proves the partial hypothesis of diseconomies of scale. The statistical significance of the effects of the management fees, CPI and M2, on performance is insignificant. The ending of this paper is a practical example of the reference of investors to select funds and fund companies rationally in order to manage operating issues and enhance the efficiency of fund distribution in the capital markets, as well as theoretical contribution in making capital market resources allocation efficient.

Keywords: Equity Fund, Fund Performance, Fund Characteristics, Macro Index, Panel Data Fixed Effect Model.

1 Introduction

The multi-level capital market of China is in the process of continuous improvement, and the wealth management awareness of the residents has significantly increased. The public fund sector has developed into an inclusive finance and value investment vehicle. Then in 2024 alone the management scale of the industry was over 30 trillion yuan and stock funds had been over and above the performance directly affects the returns of investments and operating efficiency in allocation of resources in the market [1]. Nevertheless, the problem of performance disparities among funds and unsustainability has become more significant with the fast scale of industry growth. Analytic study of their underlying causes has a great theoretical and practical

© The Author(s) 2026
L. C. Yoong (ed.), *Proceedings of the 2026 2nd International Conference on Financial Innovation and Marketing Management (FIMM 2026)*, Advances in Economics, Business and Management Research 408,
https://doi.org/10.2991/978-94-6239-801-6_30

importance in terms of making rational investments to advance governance of the industry [2, 3].

The essence of scholarly studies on fund performance is digging its internal features and external environmental influences. At the internal characteristic level, the fund manager characteristics are determined as the fundamental driving forces. Studies reveal that managerial experience has a high degree of positive relationship with fund performance and the experienced professionals have excellent risk control and industry analysis skills. As for the features of the funds, researchers discover that scale has a threshold of diseconomies of scale- beyond this point diminished management efficiency and performance decline could be experienced. Other measures that become the key drivers of divergence in performance are operational variables including the concentration of the portfolio, and turnover rate [3-5]. Systemic risks constitute the basis of boundaries at the external environment level. There is a focus on research to find the relation between fund performance and market benchmarks to isolate market volatility effects. Researchers have established that the performance is mediated by macroeconomic cycle shifts, monetary policy modifications by way of meso-level variables which include corporate earnings expectation, liquidity channel shocks, market style changes, and investor sentiment changes [6-8]. Studies in the viewpoint of public funds of funds (FOFs) show that their performance is determined by the fund managers capacity to make major allocations of the different asset classes and sub-funds, thus widening the multi-tiered performance attribution paradigm [9].

The study of connections between institutional investor behaviour and fund performance is a new dimension. Megaravalli performed a systematic analysis of performance measurements in three major themes under 104 IPO-related studies published in management and entrepreneurship (92 of which were empirical studies). [10]

The research points out the lack of the long-term short-term performance linkage mechanism in the existing research and provides the analytic framework of cross markets to clarify the effect of the institutional investor behavior on asset prices [11]. The study conducted by Qian et al. on the Chinese Initial Public Offering (IPO)market also determined that combining IPO prices suppression with preliminary high returns exists due to stringent regulation. The investors are driven to see the IPOs as a short-term arbitrage and the mutual funds because of their information advantage are more likely to behave rationally in bidding. Their strategies are complexly affecting the process of price discovery in the market, which can involve institutional environmental information in the research of fund performance [12].

The weaknesses of the current studies are the unilateralistic nature of its research that leaves the lack of incorporation of the human-fund-market into a singular model. Initial assumptions should be confirmed by the recent statistics. The research develops a broad framework against which the interplay between fund manager qualities, operating factors effectively as well as macro-economic measures are investigated in relation to performance, which give implications to market actors.

2 Methodology

Data obtained at the micro-level and at macro-level of the current study was obtained through the iFinD Financial Data Terminal, which guarantees their authority and accuracy. This study used the iFinD fund screening module and narrowed down on actively managed equity funds. This study chose those funds that are still operating within the years between January 2018 and December 2023. This study also left out mini funds whose net asset value per month fall less than 50 million yuan to make the samples representative with regard to the diversity and size distribution of the fund companies. Following these screenings, this study selected 35 eligible sample funds relating to the time frame between January 2018 and December 2023, which compose a balanced panel dataset.

iFinD was used as a source of the chosen macroeconomic indicators (year-on-year CPI and M2 growth) and market benchmark index (ShanghaiShenzhen 300) closing prices. Besides, the implementation of a 1 percent quantile Winsorization of continuous variables reduces the effects of outliers. This study used the average yield of the same maturity government bonds to fill in the risks below the 0.5% mark in the risk-free rate. The values of all variables used are below 1.5, which is much lower than the criterion of 10 which shows that there is no substantial multicollinearity.

The main variables of this study are defined as the fund performance, the fund size, the management fee, the market yield, the inflation rate and the liquidity level.

To examine the impact of fund characteristics and macroeconomic indicators on fund performance, this paper constructs a panel data fixed effects model for regression analysis.

$$\text{Performance}_{it}=\alpha+\beta_1*\text{Ln(Size)}_{it}+\beta_2*\text{Fee}_{it}+\gamma_1*\text{Market}_t +\gamma_2*\text{CPI}_t+\gamma_3*\text{M}_{2t}+\mu_1+\lambda_t+\varepsilon_{it} \quad (1)$$

Here, i denotes the individual fund, and t represents the time (in months). $\mu_i$is the individual fixed effect, controlling for time-invariant fund characteristics; λ_t is the time fixed effect, controlling for common macroeconomic shocks; and ε_{it} is the random error term.

This study employed the least squares method to estimate the model parameters.

To eliminate individual fixed effects, panel data can be centrally processed. This method involves averaging the data for each individual and then subtracting this meaning from the original values to adjust for specific individual fixed effects. Using cluster robust standard error method to calculate the standard error of coefficients, effectively addressing heteroscedasticity and serial correlation issues to ensure the reliability of statistical analysis.

Model type determination via the Hausman test: The null hypothesis was "the random effects model is superior." The test results showed a χ^2 statistic of 28.35 with a p-value of 0.002 (<0.05), rejecting the null hypothesis. The fixed effects model was selected to control individual heterogeneity bias.

3 Empirical Results and Analysis

3.1 Descriptive Statistics

Table 1. Descriptive statistics of primary variables

variable	observed number	mean value	standard deviation	minimum	maximum
excess return of fund A	72	0.012	0.085	-0.201	0.224
market return	72	0.008	0.065	-0.138	0.169
CPI on year-on-year basis	72	2.1	0.8	0.5	3.5
Year-on-year M2	72	8.5	1.2	7.0	12.5

As shown in Table 1, the fund's performance exhibited significant fluctuations, demonstrating marked variations. The fund sizes are distributed within a specific range, facilitating comparison. Macroeconomic indicators, such as market returns, also exhibit significant volatility.

3.2 Correlation Analysis

Table 2. Pearson correlation coefficient matrix of primary variables

variable	(1)	(2)	(3)	(4)	(5)
excess return of fund A	1.000				
market return	0.752	1.000			
LN (fund size)	-0.085	0.021	1.000		
CPI on year-on-year basis	-0.032	0.104	0.045	1.000	
Year-on-year M2	0.118	0.215	0.012	0.310	1.000

As shown in Table 2, the fund's performance shows a strong positive correlation (~0.75) with the market return, confirming the core impact of systemic market risk.

The fund performance shows a slight negative correlation with fund size and management fee rate, which preliminarily supports the hypothesis of "scale diseconomy" and "fee rate eroding returns", but it needs to be confirmed after controlling other variables through regression.

The correlation coefficients among the independent variables were all low (<0.7), indicating no significant multicollinearity issues.

3.3 Regression Analysis Results

Using panel data fixed effect model, this study empirically examine the relationship between fund characteristics, macroeconomic indicators and fund performance. The regression results are presented on table 3.

Table 3. Regression results

Variable name	coefficient	standard error	t value	P value
intercept term	-0.019	0.014	-1.357	0.175
fund size	-0.004	0.002	-2.000	0.046
management fee rate	-0.010	0.004	-2.500	0.046
Market	0.805	0.062	13.000	0.000
CPI	-0.001	0.002	-0.500	0.617
M_2	0.002	0.001	1.967	0.050
individual fixed effect	control	-	-	-
time fixed effect	control	-	-	-
R^2	0.678	-	-	-
adjustR^2	0.665	-	-	-
F value	51.380	-	-	0.000
observed number	2520	-	-	

The regression findings are discussed in the following manner, the coefficient of fund size (LnSize) (as illustrated in Table 3) is-0.004 which is significant at the 5% level (p=0.046). This shows that, other things held constant, an increment in fund scale of 1 per cent affects the average monthly excess return by 0.4 percentage points, which proves the presence of the diseconomies of scale effect. These happen to be mainly due to; an increased amount of funds will make portfolio changes more difficult, increase transaction costs, and will further deteriorate the lack of quality investment targets to invest in, leading to diminishing returns to scale.

The coefficient of management fee (-0.010) has a significant value of less than 1% level (p=0.012), which implies that an increase in the management fee of 1 percent decreases the monthly fund excesses on average by 1.0 percentage points. Being a direct operational expense, the management fee has a direct effect on the net returns of the fund. Increased fees sweep away investment returns of investors, which is consistent with a study of the research on the concept of fund fee erosion of returns conducted by Wang Xiangming and Zhan Hao [3].

The market coefficient (Market) has the value of 0.805, a very important value at 1% (p=0.000). It is found to be largest among all the explanatory factors, which validates the conclusion of research by Zhang Beier that the performance of stock funds is very much subjected to the overall market conditions and systematic risk is the central driver of the fund performance [7].

The coefficient of the liquidity level (M2) is 0.002, which is statistically significant at the 5% level (p= 0.050). This implies that an increase in the year-on-year growth rate of M2 by 1 percent will cause on average 0.2 percentage-point increase in the monthly excess returns of funds. The facility of weak liquidity in the markets decreases the funding expenses promoting the elevations of capital markets, thereby increasing returns in equity funds, which is affirmative to the discoveries of Liu Yingyun [2].

The Consumer Price Index (CPI) coefficient is-0.001 and it is not statistically significant (p=0.617) and this means that short-term changes in the CPI have a small effect on fund performance. This could be due to the fact that fund managers protect against inflation risks through modifying their portfolio structures, e.g., allocating more resources to resourceful assets that are sensitive to inflation, so the performance of the portfolio is not affected directly by the fluctuations in inflation.

This model has R2 = 0.678 and adjusted R2 = 0.665 which means that a combination of fund characteristics and macroeconomic indicators can explain the variation in fund performance 66.5 in the model, which means that the model fits well. The model is statistically significant, an aspect that supports the validity of the variables that are chosen since they are able to explain the dependent variable, with an F-value of 51.380 and a p-value of 0.000.

4 Discussion

These findings of the paper prove the hypothesis that the combined presence of fund characteristics and macro index influences the stock funds performance, and the main conclusion of this paper is tremendously consistent with the truth in the market.

The characteristics of funds provide an affirmation of the diseconomies of scale effect with fund size and performance being found to have a strong negative correlation. Above some reasonable limits, high quality asset allocation becomes further less variable, transaction costs increase, and the flexibility of portfolio adjustment declines. Equally, there is a high negative correlation between management fees and performance because when brokerage is high as a transaction cost, it cuts directly to performances.

At the macroeconomic level, the variables that have the strongest impact on the performance are market returns (correlation coefficient 0.756). Equity funds returns are simultaneously changing with the market trends and thus it is imprudent to assess fund performance without considering the market trends. This year-on-year increase in M2 having a positive influence on performance with a marginal value is obvious: loose liquidity lowers the cost of funds and increases the rates of assets.

5 Conclusion

This study uses the fixed effects model that empirically analyses the 35-sample common stock mutual funds of 2018-2023 to provide the following defining results.

They turn out to be the market systemic risk, and the yield of the CSI 300 Index has the most positive correlation with those of funds (r=0.805, p=0.001), which means that the performance of a fund is very much determined by the market situation. Significant peculiarities of the fund include negative dependence between its size and performance (coefficient-0.004, p-value <0.05), which confirms the fact of so-called diseconomies of scale. And as of October 2023, the data analysis indicates that there is a negative relationship between the ratio of the management fee and the performance (correlation coefficient-0.010, p-value <0.05). An increase in the management fees diminishes the returns on investments.

Positive support is given by macro liquidity: marginally, the annual growth rate of M2 has statistically significant effect on performance (coefficient 0.002, p=0.05), indicating that loose liquidity has a positive influence on performance. Nevertheless, the effects of the CPI each year are minimal because of the sample used in the study (20182023) with an average increase in CPI of 2.1 percent (0.5 -3.5 percent), and nothing high inflationary pressures were reported which nullifies the direct effect of CPI on performance.

In the academic domain, the paper develops a holistic framework between fund characteristics and macro indicators to overcome the shortcomings of the present one-dimensional studies, which confirms the relevance of the traditional findings using the current evidence. As a matter of fact, it assists investors, fund management organizations and regulatory authorities in decision-making support. Only 35 traditional equity funds were included in a sample leaving out other fund groups. Other factors that were not used in the study were the personality of fund managers and portfolio distribution in the industry. Bull and bear markets effects on the market were not analyzed. The possibility of matching fund manager-fund panel data, increasing the membership of the sample, introducing variable dimensions, and making heterogeneous analysis under market cycles may lead to future improvements.

References

1. Wu, T.: Research on the Impact of Fund Manager Experience on the Performance of China's Publicly Offered Funds. New Finance, (09), 70-80 (2025)
2. Liu, Y.: Research on Factors Influencing the Performance of China's Equity Public Funds. Hunan University (2023)
3. Wang, X., Zhan, H.: Analysis of Factors Affecting the Performance of Equity Funds. Journal of Central South University for Nationalities (Humanities and Social Sciences Edition), **44**(01), 155-162+187 (2024)
4. Zhang, C.: Research on Performance Influencing Factors of China's Publicly Offered FOF Funds. University of International Business and Economics (2023)
5. Gao, B.: Research on Performance Forecasting and Selection of Publicly Offered Funds. Southwestern University of Finance and Economics (2023)
6. Yu, C.: Research on the Sustainability of Public and Private Fund Performance and Its Influencing Factors. Zhejiang University (2022)
7. Zhang, B.: Research on Performance Evaluation of China Public Funds. Nanjing University (2019)
8. Zhu, Y.: Research on the Correlation of China Open-end Public Fund Performance Impact. Shanghai Jiao Tong University (2015)
9. Yang, X.: Research on the Impact of China Open-end Fund Scale on Its Performance. University of International Business and Economics (2014)
10. Megaravalli, A.V.: Initial public offering: a critical review of literature. Qualitative Research in Financial Markets, 15(2), 385-411 (2023)
11. Liu, W.: Research on the main factors affecting the scale of China's public securities fund industry. Fudan University (2009)
12. Qian, J., Zhao, H., & Wu, W. Underwriters and IPO underpricing: Evidence from China. Journal of Banking & Finance, 32(10), 2206-22213 (2008)

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (http://creativecommons.org/licenses/by-nc/4.0/), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

