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A Study of Securities Investment Fund Performance from a Multi-Horizon Perspective: A Comparative Analysis before and after Deducting Operating Expenses

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1. INTRODUCTION

In recent years, securities investment funds have become increasingly important in both domestic and international financial markets, serving as a major vehicle for household wealth management, institutional asset allocation, and capital market resource allocation. According to the Asset Management Association of China, by the end of December 2025, the net asset value of China's domestic public funds had reached USD 37.71 trillion. Globally, assets in regulated open-end funds reached USD 84.90 trillion by the end of the third quarter of 2025. The continued expansion of the fund industry has made the question of whether securities investment funds can create value for investors not only academically important but also highly relevant from a policy perspective.

There has long been disagreement in both domestic and international literature over whether funds can generate excess returns and whether fund managers possess persistent investment ability. Early studies mainly focused on risk-adjusted performance measurement. Jensen (1968), for example, proposed the CAPM-based alpha measure, which laid the foundation for subsequent research on fund performance. Some studies argue that securities investment funds are able to earn excess returns and create value for investors. Cohen (1970) and related studies suggest that mutual funds exhibited excess returns during 1944-1964. Grinblatt and Titman (1989), Fama and French (1993), Wurgler et al. (2000), and Chen et al. (2004) further argue that the fund industry not only creates value for investors directly, but also contributes positively to the market and the broader economy through indirect channels such as liquidity provision and risk diversification, especially during periods of high market volatility. By contrast, other studies contend that securities investment funds cannot consistently beat the market or generate excess returns, and therefore cannot create value for investors. Sharpe (1991), Ingersoll (2001), Carhart (1997), and Malkiel (1995) show that most mutual funds are unable to consistently outperform the market. Fund managers' performance is often difficult to sustain above market benchmarks, and excess returns tend to disappear after fees are deducted. These studies suggest that the overall performance of actively managed funds falls below the market average once fund expenses are taken into account.

Although the existing literature has extensively examined fund performance from the perspectives of risk-adjusted returns, stock-picking ability, market-timing ability, performance persistence, and the distinction between luck and skill, one important issue remains insufficiently explored. Most studies evaluate fund performance over a single horizon, while relatively few systematically compare the distribution of fund returns and their economic implications across different investment horizons. In practice, however, investors' holding periods vary substantially, ranging from one month to several decades. From the perspective of wealth accumulation, investors are concerned not only with average returns, but also with changes in wealth across holding periods, the distributional characteristics of compounded returns, and whether funds can continue to generate wealth appreciation after fees are deducted. In particular, as fees, turnover, and transaction costs accumulate through compounding, cost differences that seem limited in the short run may significantly affect terminal wealth over long holding periods. U.S. securities regulators have also emphasized that even small differences in expense ratios can substantially affect portfolio value when accumulated over time.

Against this background, this paper systematically examines fund performance and its statistical distribution across different holding horizons from the perspective of multi-horizon returns. It investigates whether the fund industry as a whole can deliver positive returns and excess returns to investors, as well as the proportion of funds that are able to create value at different horizons. It further discusses the implications of these findings for identifying fund managers' investment ability, regulating fund fees, and evaluating capital market efficiency. Compared with studies that focus on fixed points in time or a single investment horizon, this study helps reveal the divergence between the statistical significance of short-term returns and the ability to create wealth over the long run. Re-examining fund performance from the perspective of multi-horizon compounded returns and wealth effects therefore not only complements the existing literature, but also provides more targeted empirical evidence for investor protection and industry regulation.

Specifically, this paper first examines fund performance before operating expenses (pre-fee performance) and its statistical distribution across monthly, annual, five-year, and fifteen-year horizons. On this basis, it evaluates whether the securities investment fund industry as a whole is able to generate excess returns for investors, as well as the proportion of funds capable of delivering such returns, thereby providing evidence on whether fund managers possess investment ability. It then investigates fund performance after operating expenses (after-fee performance) and its statistical distribution over the same horizons, and re-examines whether the industry can still generate excess returns after deducting operating expenses, as well as the proportion of funds that continue to do so, in order to assess the impact of fund operating costs on long-term performance.

Nevertheless, this study still has some limitations. Although it examines fund performance across multiple horizons, its analysis of the heterogeneity in the return-generating mechanisms across different horizons remains limited. Fund performance over different horizons may be jointly influenced by various factors, such as market conditions, fund style, changes in fund size, and fund manager characteristics. The main focus of this paper is to compare fund performance and its distributional characteristics across horizons, rather than to identify in greater detail how these factors differ in their effects across horizons. Therefore, while this paper explains what fund performance looks like across different holding periods, it provides less in-depth explanation of the mechanisms underlying such performance.

In addition, this paper's identification of fund managers' investment ability is mainly based on differences between fund performance before and after operating expenses, as well as on the distribution of excess returns, and the distinction between "skill" and "luck" is not fully explored. Positive excess returns may reflect managers' genuine stock-picking ability, but they may also be influenced by market conditions or random factors. Although the multi-horizon framework improves the identification of performance persistence and stability, it does not employ more rigorous statistical methods to distinguish managerial skill from random variation more thoroughly. Therefore, the conclusions regarding fund managers' investment ability should be understood primarily as empirical evidence based on multi-horizon performance, rather than as a complete identification of the sources of managerial skill.

2. LITERATURE REVIEW

Existing studies have not reached a consistent conclusion on whether fund managers possess the ability to create value for investors. One stream of the literature argues that fund managers, on average, do not exhibit stable and persistent investment skills that can generate positive excess returns after fees. Jensen (1968), in one of the earliest studies on mutual fund performance, found that funds on average did not demonstrate superior stock-picking or market-timing ability during the sample period. After management fees were taken into account, the overall performance of funds was insufficient to support the view that managers had the skill to beat the market. Subsequent studies by Malkiel (1995), Gruber (1996), and Carhart (1997) further showed that actively managed funds as a whole find it difficult to outperform the market on a sustained basis. In their view, the persistence observed in fund performance reflects, to a greater extent, fees, risk exposure, and the persistence of poor performance, rather than persistent stock-picking skill. Wermers (2000) found that some stock-picking ability can indeed be identified from fund holdings, but that such ability is, in most cases, offset by management fees and transaction costs. French (2008), from the perspective of the aggregate cost of active investing, argued that active management is a negative-sum game for investors after costs are deducted. Fama and French (2010), as well as Barras, Scaillet, and Wermers (2010), further distinguished between "luck" and "skill" and found that only a very small proportion of funds exhibit statistically significant skill, while the vast majority of funds do not display identifiable investment ability.

Another stream of the literature, however, provides evidence that at least some fund managers do possess investment ability. Grinblatt and Titman (1989) found that managers' portfolio choices themselves reflect positive risk-adjusted performance, especially among more aggressive funds, suggesting that stock-picking skill can be identified from holdings decisions. Grinblatt and Titman (1993) further argued that although traditional benchmarks may suffer from model misspecification, managerial ability can still be inferred from fund behavior. Daniel, Grinblatt, Titman, and Wermers (1997) showed that traditional factor models may underestimate managers' true ability, and that the use of characteristic-based benchmarks reveals positive stock-picking ability for some funds. Kacperczyk, Sialm, and Zheng (2005) found that actively managed funds with more concentrated industry allocations tend to perform better, implying that more capable managers concentrate investments in sectors where they enjoy stronger informational advantages. Kosowski, Timmermann, Wermers, and White (2006), using bootstrap methods to distinguish luck from skill, found that a small group of star funds in the right tail of the performance distribution are not merely lucky, but truly possess stock-picking ability. Kacperczyk and Seru (2007) showed that fund managers who rely less mechanically on public information tend to display stronger skill, indicating that managerial ability lies in the interpretation and transformation of information rather than simple information-following. Cohen, Frazzini, and Malloy (2008) found that managers invest more heavily in firms with which they have social connections, and that these connected holdings outperform other holdings, suggesting that network-based informational advantages can be translated into superior returns. Kacperczyk, Sialm, and Zheng (2008), through their "return gap" measure, further showed that some funds consistently create value through unobservable actions, whereas others consistently destroy value, implying that managerial ability may also reside in less visible dimensions such as trade execution and timing. Cremers and Petajisto (2009) proposed the Active Share measure and found that funds with higher Active Share perform better on average, while "closet indexing" funds tend to perform poorly. This result suggests that managers who are genuinely active and willing to deviate from the benchmark are more likely to demonstrate skill.

Some studies have further argued that the absence of persistent abnormal returns does not necessarily imply the absence of managerial ability. Berk and Green (2004) pointed out that if managers have skill, capital will flow into better-performing funds until diseconomies of scale eliminate excess returns. In this sense, the lack of persistent alpha should not be directly interpreted as evidence of no skill. Del Guercio and Reuter (2014) showed that whether managerial skill is reflected in observed performance depends partly on the distribution channel and investor clientele of the fund. Funds sold through brokers may not have strong incentives to engage in genuinely active management, whereas funds targeting more sophisticated investors are more likely to pursue alpha generation. Kacperczyk, Van Nieuwerburgh, and Veldkamp (2014) further argued that managerial skill is state-dependent rather than constant over time. They found that timing ability is more evident during recessions, whereas stock-picking ability is more evident during economic expansions, implying that static average performance measures may underestimate managers' true ability. Berk and van Binsbergen (2015) also criticized the use of alpha alone as a measure of skill, arguing that fund flows and decreasing returns to scale compress alpha even when managers create value. They therefore proposed "value added" and "gross value added" as alternative measures and found that the mutual fund industry as a whole generates significant value, suggesting that traditional alpha-based approaches may understate managerial skill.

The Chinese literature has also examined whether fund managers can create value, but the conclusions remain mixed. Shen Weitao and Huang Xingluan (2001) discussed whether Chinese securities investment funds were able to outperform market benchmarks and concluded that, on the whole, such value creation was not stable. Zhang Xin and Du Shuming (2002) similarly argued that fund managers in the early stage of China's fund market did not display strong value-creating ability. Li Hongquan and Ma Chaoqun (2004) reviewed fund performance evaluation theories and introduced classic methods such as Jensen's alpha, the Treynor–Mazuy model, and the Henriksson–Merton model into the Chinese fund evaluation framework. They emphasized that the question of whether funds create value should not be judged by raw returns alone, but rather by risk-adjusted performance, and that stock-picking ability, market-timing ability, and active management ability should all be assessed under a stricter risk-adjusted framework.

At the same time, some Chinese studies have provided supportive evidence for the existence of managerial ability. Luo Ronghua, Lan Wei, and Yang Yunhong (2011) argued that if a higher degree of active management is associated with better fund performance, then managers' active decisions can be understood as contributing to value creation; otherwise, active management may not necessarily be effective. Liu Shasha, Liu Yuzhen, and Tang Ya (2013) suggested that fund managers' informational advantages are an important source of risk-adjusted value creation. Xu Longbing and Gu Lihui (2019) found that fund performance during market downturns significantly predicts future performance, and that this "adversity return" retains incremental explanatory power even after controlling for arbitrage ability, timing ability, stock-picking ability, and hidden trading. Luo Ronghua, Tian Zhenglei, and Fang Hongyan (2020) argued that the informational advantages generated through managers' use of network information constitute an important channel through which Chinese public funds create excess value. Chen Shenglan and Li Jing (2021) similarly supported the view that network information and relationship resources can improve fund performance and generate value. Li Bin (2022) also argued that fund managers are able to create excess value through information discovery and exploitation.

Overall, the existing literature has accumulated rich evidence on fund performance from the perspectives of stock-picking ability, market-timing ability, active management, information advantage, and the distinction between luck and skill. However, most of these studies focus on whether funds can generate abnormal returns under a given evaluation framework, while relatively less attention has been paid to how fund performance differs across holding horizons and how the distribution of returns evolves over different investment periods. In particular, relatively few studies systematically examine whether funds can create value for investors from the perspective of multi-horizon compounded returns and wealth accumulation before and after expenses. This is precisely the gap that this paper seeks to address.

3. DATA AND VARIABLES

The data used in this study are primarily drawn from the RESSET database, the CSMAR database, and the *China Securities and Futures Statistical Yearbook*. The sample consists of Chinese open-end equity funds and hybrid funds over the period from 2005 to 2024. Special types of funds, such as structured funds and QDII funds, are excluded from the sample. In addition, given that China's fund industry is still in a stage of development and new funds continue to enter the market, this paper further excludes funds with a history of less than two years and funds with assets under management below RMB 10 million, in order to reduce the potential influence of "supportive funds." The final sample includes 5,178 funds and 103,892 quarterly observations.

Part of the transaction cost data used in this paper is collected from the semi-annual and annual reports released by fund management companies. These reports are obtained from the China Securities Regulatory Commission's electronic information disclosure platform. Through manual collection, a total of 26,889 semi-annual and annual reports of the target funds from 2022 to 2024 are obtained. After acquiring the PDF reports, Python programs are written to extract the text and amounts related to transaction costs from the reports for further processing.

To convert weekly returns into quarterly returns, this paper applies the buy-and-hold return formula to aggregate weekly data into quarterly frequency, thereby obtaining quarterly fund returns, quarterly market returns, and quarterly T-bill returns. Based on quarterly returns, returns over longer horizons can then be further constructed, including annual returns and ten-year returns.

4. EMPIRICAL ANALYSIS

4.1 Fund Performance across Investment Horizons before Operating Expenses

4.1.1 Monthly Fund Performance before Operating Expenses

Table 1: Monthly Fund Performance before Operating Expenses

pannel A: Month	Mean	N	SD	Min	Max	Skewness
RetNAVGr	0.0072	326661	0.0587	-0.3475	0.4185	0.2464
monthl~f	0.0011	326661	0.0004	0.0009	0.0026	2.7246
mkt2	0.0035	326661	0.0540	-0.2494	0.1867	-0.0239
HS300R	0.0018	326661	0.0540	-0.2304	0.2405	0.2901
WRatioGr_mkt2	1.0045	326661	0.0444	0.7333	1.4710	0.7215
WRatioGr_HS300	1.0063	326661	0.0472	0.6807	1.4457	0.5518
WRatioGr_rf	1.0061	326661	0.0586	0.6519	1.4163	0.2438
indicator2_Orf	0.5708	326661	0.4950	0	1	-0.2860
indicator2_OMK	0.5501	326661	0.4975	0	1	-0.2013
indicator2_OHS	0.5676	326661	0.4954	0	1	-0.2729

From the monthly results reported in Panel A of the table, the mean monthly NAV return of funds before operating expenses is 0.0072, which is positive. This indicates that, at the overall average level, funds are able to generate positive returns for investors on a monthly basis. At the monthly frequency, the mean risk-free rate is 0.0011, while the mean market return and the mean CSI 300 return are 0.0035 and 0.0018, respectively. It can be seen that the average monthly fund return is higher than the risk-free rate, and also higher than both the market return and the CSI 300 return. This suggests that, without considering fund operating expenses, funds already exhibit a certain return advantage in the short run.

Looking further at the wealth ratios, the mean wealth ratios of funds relative to the market, the CSI 300, and the risk-free rate are 1.0045, 1.0063, and 1.0061, respectively, all of which are greater than 1. This indicates that, from the perspective of cumulative wealth, fund monthly returns are on average able to slightly outperform the corresponding benchmarks. However, this advantage is not particularly large and is reflected only as a modest lead.

In terms of the proportion of outperforming funds, the percentages of funds that outperform the risk-free rate, the market, and the CSI 300 are 57.08%, 55.01%, and 56.76%, respectively, all above 50%. This shows that, at the monthly horizon, more than half of the funds are able to outperform the corresponding benchmarks. In particular, funds perform relatively better against the risk-free rate and the CSI 300. This suggests that, before deducting costs, funds exhibit a cross-sectional advantage at the monthly frequency.

From the perspective of volatility and distributional characteristics, the standard deviation of monthly NAV returns is 0.0587, indicating that short-term fund returns still display a certain degree of volatility. The skewness is 0.2464, suggesting that the return distribution is slightly right-skewed, with a small number of high-return funds raising the mean to some extent. Overall, the monthly results show that, before deducting fund operating expenses, funds as a whole exhibit positive short-term performance and maintain a certain advantage relative to the benchmarks, although this advantage is not particularly strong.

4.1.2 Annual Fund Performance before Operating Expenses

Table 2: Annual Fund Performance before Operating Expenses

pannel B: Annual	Mean	N	SD	Min	Max	Skewness
RetNAVGr	0.1713	28603	0.4794	-0.6746	3.1156	1.7047
monthl~f	0.0225	28603	0.0107	0.0018	0.0587	1.3946
mkt2	0.0905	28603	0.3115	-0.2918	1.0934	1.1982
HS300R	0.0648	28603	0.3137	-0.3177	0.9197	0.9246
WRatioGr_mkt2	1.0661	28603	0.2507	0.3982	3.0706	1.1757
WRatioGr_HS300	1.0955	28603	0.2556	0.4450	3.3827	1.2885
WRatioGr_rf	1.1451	28603	0.4672	0.3183	4.0261	1.7107
indicator2_Orf	0.5578	28603	0.4967	0	1	-0.2329
indicator2_OMK	0.5991	28603	0.4901	0	1	-0.4043
indicator2_OHS	0.5577	28603	0.4967	0	1	-0.2322

From the annual results reported in Panel B of the table, the mean annual NAV return of funds before operating expenses is 0.1713, which is clearly higher than the monthly mean. This indicates that, as the observation horizon becomes longer, the cumulative effect of fund returns becomes more evident. At the annual frequency, the mean risk-free rate, mean market return, and mean CSI 300 return are 0.0225, 0.0905, and 0.0648, respectively. Fund annual returns remain higher than all of these benchmarks, suggesting that, at the annual level, funds as a whole still exhibit relatively strong return performance.

From the perspective of wealth ratios, the mean wealth ratio of funds relative to the market is 1.0661, the mean wealth ratio relative to the CSI 300 is 1.0955, and the mean wealth ratio relative to the risk-free rate is 1.1451. Among them, the wealth ratio relative to the risk-free rate is the highest, indicating that at the annual horizon, funds have a relatively strong cumulative return advantage over low-risk assets. In addition, the wealth ratios relative to both the CSI 300 and the market are greater than 1, showing that funds not only achieve positive returns in absolute terms, but also generate excess performance in relative terms.

In terms of the proportion of funds outperforming the benchmarks, 55.78% of funds outperform the market, while 59.91% and 55.77% outperform the CSI 300 and the risk-free rate, respectively. This shows that at the annual horizon, the proportion of funds beating the benchmarks is clearly above one-half, and nearly 60% of funds are able to outperform the CSI 300. Compared with shorter holding periods, this suggests that the relative advantage of funds becomes easier to observe over longer investment horizons.

As for the distributional characteristics of fund returns, the standard deviation of annual NAV returns is 0.4794 and the skewness is 1.7047, both of which are significantly higher than the corresponding monthly figures. This indicates that as the observation horizon lengthens, the degree of dispersion in fund returns increases, and the upward pull of a small number of high-return funds on the mean becomes more pronounced. Although the average annual return is relatively strong, the performance gap across funds is also quite substantial.

Overall, the annual results indicate that, before deducting operating expenses, funds possess a relatively clear ability to create value. However, this ability is unevenly distributed across funds.

4.1.3 Five-Year Fund Performance before Operating Expenses

Table 3: Five-Year Fund Performance before Operating Expenses

pannel C: Five-Year	Mean	N	SD	Min	Max	Skewness
RetNAVGr5Y	0.3651	7559	0.5946	-0.6602	3.5110	1.1800
monthlyrf5Y	0.0474	7559	0.0254	0.0022	0.1247	0.9377
mkt25Y	0.1226	7559	0.2847	-0.4410	0.7355	-0.0474
HS300R5Y	0.0395	7559	0.2350	-0.3457	0.7283	0.1027
WRatioGr_mkt25Y	1.2018	7559	0.3501	0.3827	3.1805	1.0165
WRatioGr_HS3005Y	1.2926	7559	0.4064	0.4186	3.7347	1.3791
WRatioGr_rf5Y	1.2974	7559	0.5510	0.3250	4.2697	1.2263
indicator2_Orf5Y	0.6468	7559	0.4780	0	1	-0.6142
indicator2_OMK5Y	0.7142	7559	0.4518	0	1	-0.9485
indicator2_OHS5Y	0.7758	7559	0.4171	0	1	-1.3224

From the five-year results reported in Panel C of the table, the mean five-year NAV return of funds before operating expenses is 0.3651, which remains positive and is clearly higher than the annual average. This indicates that over a longer observation horizon, fund returns exhibit a stronger cumulative effect. The mean five-year risk-free rate is 0.0474, the mean market return is 0.1226, and the mean CSI 300 return is 0.0395. The average five-year fund return is higher than all of these benchmarks, suggesting that over a five-year horizon, funds as a whole continue to show a clear return advantage.

From the perspective of wealth ratios, the mean wealth ratio of funds relative to the market is 1.2018, the mean wealth ratio relative to the CSI 300 is 1.2926, and the mean wealth ratio relative to the risk-free rate is 1.2974. All of these values are significantly greater than 1 and are further improved compared with the annual results. This suggests that when the observation horizon is extended from one year to five years, the cumulative advantage of funds relative to the benchmarks becomes more clearly visible. In particular, the wealth ratios relative to the CSI 300 and the risk-free rate are close to 1.3, indicating that under long-term accumulation, the relative performance of funds is quite prominent.

In terms of the proportion of outperforming funds, the shares of funds that outperform the risk-free rate, the market, and the CSI 300 are 64.68%, 71.42%, and 77.58%, respectively. Among them, the proportion of funds outperforming the CSI 300 is already close to 80%, indicating that at the five-year horizon, most funds are able to outperform the CSI 300. At the same time, the proportions of funds outperforming the market and the risk-free rate are also clearly above one-half, further suggesting that funds have stronger relative return-generating ability in the long run.

From the perspective of volatility and distributional characteristics, the standard deviation of five-year NAV returns is 0.5946, and the skewness is 1.18. Compared with the annual figures, the volatility of five-year returns is clearly higher, while the skewness declines slightly. This suggests that although there are still some funds with relatively strong performance in the five-year sample, the contribution of extremely high-return funds to the mean is somewhat less pronounced than in the annual results.

Overall, the five-year results indicate that, before deducting operating expenses, the long-term value-creating ability of funds becomes more evident, and the proportion of funds outperforming the benchmarks also rises significantly.

4.1.4 Fifteen-Year Fund Performance before Operating Expenses

Table 4: Fifteen-Year Fund Performance before Operating Expenses

pannel D: Fifteen-Year	Mean	N	SD	Min	Max	Skewness
RetNAVGr15Y	0.7978	4578	1.4366	-0.6130	12.0833	2.6311
monthlyrf15Y	0.0803	4578	0.0717	0.0028	0.2821	1.7561
mkt215Y	0.2362	4578	0.5421	-0.3924	2.4333	2.3265
HS300R15Y	0.0881	4578	0.4053	-0.3118	1.6333	1.6098
WRatioGr_mkt215Y	1.3714	4578	0.6293	0.4278	6.5441	1.8224
WRatioGr_HS30015Y	1.5394	4578	0.7191	0.5150	7.6428	2.1545
WRatioGr_rf15Y	1.6064	4578	1.1316	0.3765	10.2046	2.4620
indicator2_Orf15Y	0.6767	4578	0.4678	0	1	-0.7556
indicator2_OMK15Y	0.6951	4578	0.4604	0	1	-0.8474
indicator2_OHS15Y	0.8028	4578	0.3980	0	1	-1.5217

From the fifteen-year (lifetime) results reported in Panel D of the table, the mean lifetime NAV return of funds before operating expenses is 0.7978, which is the highest among all the horizons presented. This indicates that, when viewed over the entire life cycle of the fund, funds as a whole are able to achieve relatively high cumulative returns. Over the same horizon, the mean risk-free rate is 0.0803, the mean market return is 0.2362, and the mean CSI 300 return is 0.0881. The lifetime fund return remains clearly higher than all of these benchmarks, suggesting that over the full life cycle, funds as a whole possess strong return-generating ability.

From the perspective of wealth ratios, the mean wealth ratios of funds relative to the market, the CSI 300, and the risk-free rate are 1.3714, 1.5394, and 1.6064, respectively. All of these values are significantly greater than 1 and are further improved compared with the corresponding five-year results. This suggests that, from the perspective of lifetime holding, funds have a relatively clear advantage in cumulative wealth growth over all types of benchmarks. In particular, their advantage is more pronounced relative to the CSI 300 and the risk-free rate.

In terms of the proportion of outperforming funds, the percentages of funds that outperform the risk-free rate, the market, and the CSI 300 are 67.67%, 69.51%, and 80.28%, respectively. This shows that at the lifetime horizon, the probability of funds outperforming the benchmarks is already relatively high. In particular, more than 80% of funds outperform the CSI 300, indicating that long-lived funds have a clear advantage over the CSI 300 over their full life cycle. Compared with the monthly and annual results, this long-term advantage is even more evident.

As for the distributional characteristics of fund returns, the standard deviation of lifetime NAV returns is 1.4366, which is relatively high among all the horizons, and the skewness is 2.6311, which is also clearly higher than that observed over the shorter horizons. This indicates that the distribution of lifetime returns is strongly right-skewed, and that a small number of funds with exceptionally strong long-term performance significantly raise the overall mean. Therefore, although the lifetime average return and relative performance both appear strong, it should also be noted that there are substantial performance differences across funds, and the industry average is influenced to some extent by the strong performance of top funds.

Overall, the lifetime results provide stronger evidence of long-term value creation than the short-term and medium-term results. In other words, before deducting operating expenses, funds as a whole show a relatively clear performance advantage when evaluated over their entire life cycle.

4.2 Fund Performance Across Investment Horizons after Deducting Operating Expenses

4.2.1 Monthly Fund Performance after Deducting Operating Expenses

Table 5: Monthly Fund Performance after Deducting Operating Expenses

pannel A: Month	Mean	N	SD	Min	Max	Skewness
Ret~nNAV	0.0049	326661	0.0583	-0.3483	0.4118	0.2387
monthl~f	0.0011	326661	0.0004	0.0009	0.0026	2.7246
mkt2	0.0035	326661	0.0540	-0.2494	0.1867	-0.0239
HS300R	0.0018	326661	0.0540	-0.2304	0.2405	0.2901
Wealth~t(Wealth ratio w.r.t. market)	1.0021	326661	0.0447	0.7283	1.6602	0.7323
Weal~300(Wealth ratio w.r.t. HS300)	1.0039	326661	0.0474	0.6761	1.6279	0.5416
Wealth~f(Wealth ratio w.r.t. rate of risk)	1.0038	326661	0.0582	0.6511	1.4105	0.2361

indicator_OMK(Outperform market)	0.5066	326661	0.5000	0	1	-0.0266
indicator_OHS(Outperform HS300)	0.5256	326661	0.4993	0	1	-0.1024
indicator_Orf(Outperform rate of risk free)	0.5284	326661	0.4992	0	1	-0.1137

From the monthly results reported in Panel A of the table, the mean monthly NAV return of funds after deducting operating expenses is 0.0049, indicating that the sample funds are still able to generate positive returns at the monthly horizon. Over the same period, the mean risk-free rate is 0.0011, the mean market return is 0.0035, and the mean CSI 300 return is 0.0018. Comparing fund returns with these benchmarks shows that the average monthly fund return remains higher than the risk-free rate, the market return, and the CSI 300 return, suggesting that at the monthly frequency, funds as a whole still retain a certain return advantage.

The mean wealth ratios of funds relative to the market, the CSI 300, and the risk-free rate are 1.0021, 1.0039, and 1.0038, respectively, all slightly greater than 1. This indicates that, from the perspective of wealth accumulation, funds are on average still able to marginally outperform the corresponding benchmarks on a monthly basis. However, this advantage is not particularly pronounced.

In terms of the proportion of outperforming funds, the percentages of funds that outperform the market, the CSI 300, and the risk-free rate at the monthly frequency are 50.66%, 52.55%, and 52.83%, respectively. This shows that the proportion of funds outperforming the benchmarks is only slightly above one-half. In particular, funds perform somewhat better relative to the CSI 300 and the risk-free rate, but the proportions are not especially high, indicating that monthly fund performance remains quite volatile and that differences across funds are relatively noticeable.

From the perspective of distributional characteristics, the standard deviation of monthly NAV returns is 0.0583, suggesting that short-term returns still exhibit a certain degree of volatility. At the same time, the skewness of NAV returns is 0.2387, indicating a slight right-skew in the return distribution, with a portion of high-return funds pulling up the average. Overall, the monthly results show that funds are still able to earn positive returns after deducting operating expenses, but their advantage is limited, and short-term performance remains relatively unstable.

4.2.2 Annual Fund Performance after Deducting Operating Expenses

Table 6: Annual Fund Performance after Deducting Operating Expenses

pannel B: Annual	Mean	N	SD	Min	Max	Skewness
Ret~nNAV	0.1713	28603	0.4794	-0.6746	3.1156	1.7047
monthl~f	0.0225	28603	0.0107	0.0018	0.0587	1.3946
mkt2	0.0905	28603	0.3115	-0.2918	1.0934	1.1982
HS300R	0.0648	28603	0.3137	-0.3177	0.9197	0.9246
Wealth~t(Wealth ratio w.r.t. market)	1.0661	28603	0.2507	0.3982	3.0706	1.1757
Weal~300(Wealth ratio w.r.t. HS300)	1.0955	28603	0.2556	0.4450	3.3827	1.2885
Wealth~f(Wealth ratio w.r.t. rate of risk)	1.1451	28603	0.4672	0.3183	4.0261	1.7107
indicator_OMK(Outperform market)	0.5578	28603	0.4967	0	1	-0.2329
indicator_OHS(Outperform HS300)	0.5991	28603	0.4901	0	1	-0.4043
indicator_Orf(Outperform rate of risk free)	0.5577	28603	0.4967	0	1	-0.2322

From the annual results reported in Panel B of the table, the mean annual NAV return of funds after deducting operating expenses is 0.1713, which is clearly higher than that at the short- and medium-term horizons. This indicates that when the observation horizon is extended to one year, the cumulative effect of fund returns becomes more evident. Over the same period, the mean risk-free rate, mean market return, and mean CSI 300 return are 0.0225, 0.0905, and 0.0648, respectively. Fund annual returns remain higher than all of these benchmarks, suggesting that at the annual horizon, funds as a whole are still able to obtain relatively clear excess returns.

From the perspective of wealth ratios, the mean wealth ratios of funds relative to the market, the CSI 300, and the risk-free rate are 1.0661, 1.0955, and 1.1451, respectively, all significantly greater than 1. In particular, the wealth ratio relative to the risk-free rate reaches 1.1451, indicating that at the annual frequency, funds have a more pronounced return advantage over low-risk benchmarks. At the same time, the wealth ratio relative to the CSI 300 is close to 1.1, suggesting that funds not only generate positive returns in absolute terms, but also exhibit a certain degree of relative outperformance.

In terms of the proportion of outperforming funds, the percentages of funds that outperform the market, the CSI 300, and the risk-free rate are 55.78%, 59.91%, and 55.77%, respectively. Compared with the semiannual horizon, these proportions increase markedly. In particular, the proportion of funds outperforming the CSI 300 is close to 60%, indicating that at the annual frequency, the overall relative performance of funds is better than that over shorter horizons, and that a larger number of funds are able to outperform the major benchmarks.

From the perspective of volatility and distributional characteristics, the standard deviation of annual NAV returns is 0.4794 and the skewness is 1.704, both of which are significantly higher than the corresponding short-term results. This indicates that at the annual horizon, the dispersion of fund returns becomes larger: some funds are able to achieve very high returns, while others perform quite poorly. Therefore, although the annual results suggest that funds as a whole still possess a certain value-creating ability, this ability is not evenly distributed across all funds, but instead exhibits a strong pattern of differentiation.

4.2.3 Five-Year Fund Performance after Deducting Operating Expenses

Table 7: Five-Year Fund Performance after Deducting Operating Expenses

pannel C: Five-Year	Mean	N	SD	Min	Max	Skewness
Ret~nNAV	0.2320	7559	0.4934	-0.6870	3.0576	1.1849
monthl~f	0.0474	7559	0.0254	0.0022	0.1247	0.9377
mkt2	0.1226	7559	0.2847	-0.4410	0.7355	-0.0474
HS300R	0.0395	7559	0.2350	-0.3457	0.7283	0.1027
Wealth~t(Wealth ratio w.r.t. market)	1.0960	7559	0.3057	0.2986	2.8608	0.8848
Weal~300(Wealth ratio w.r.t. HS300)	1.1769	7559	0.3459	0.3506	3.3593	1.1975
Wealth~f(Wealth ratio w.r.t. rate of risk)	1.1718	7559	0.4573	0.2994	3.8405	1.2247
indicator_OMK(Outperform market)	0.5970	7559	0.4905	0	1	-0.3957
indicator_OHS(Outperform HS300)	0.6777	7559	0.4674	0	1	-0.7606
indicator_Orf(Outperform rate of risk free)	0.5786	7559	0.4938	0	1	-0.3186

From the five-year results reported in Panel F of the table, the mean five-year NAV return of funds after deducting operating expenses is 0.232, which is lower than the corresponding two-year mean. This suggests that fund returns do not increase monotonically as the investment horizon lengthens; instead, long-term returns may also be affected by factors such as market cycles, sample coverage, and differences in terminal years. Nevertheless, the average five-year return remains positive and is still higher than the contemporaneous risk-free rate, market return, and CSI 300 return, indicating that funds continue to maintain a certain return advantage over the five-year horizon.

From the perspective of wealth ratios, the mean wealth ratios of funds relative to the market, the CSI 300, and the risk-free rate are 1.096, 1.1769, and 1.1718, respectively, all greater than 1. This indicates that although the average five-year NAV return is lower than the two-year figure, from the perspective of wealth accumulation, funds are still able to outperform the market and the CSI 300 by a relatively clear margin. In particular, their advantage is more pronounced relative to the CSI 300.

In terms of the proportion of outperforming funds, the percentages of funds that outperform the market, the CSI 300, and the risk-free rate are 59.7%, 67.77%, and 57.86%, respectively. Among them, the proportion of funds outperforming the CSI 300 reaches 67.77%, indicating that over the five-year horizon, most funds still maintain a relatively strong advantage over the CSI 300. However, the proportion of funds outperforming the risk-free rate is actually lower than that over the two-year horizon, suggesting that the comparison results are not entirely consistent across different benchmarks and that long-term fund performance is more complex in nature.

From the perspective of distributional characteristics, the standard deviation of five-year NAV returns is 0.4934 and the skewness is 1.1849. Compared with the two-year results, both the standard deviation and the skewness decline somewhat. This suggests that in the five-year sample, the effect of extremely high-return funds in pulling up the mean is relatively weaker, although return dispersion across funds still remains.

Overall, the results indicate that funds still possess a certain degree of value-creating ability over the five-year horizon after deducting operating expenses. However, this performance does not improve in a simple linear manner with the extension of the investment horizon, but instead shows clear stage-dependent characteristics.

4.2.4 Fifteen-Year Fund Performance after Deducting Operating Expenses

Table 8: Fifteen-Year Fund Performance after Deducting Operating Expenses

pannel D: Fifteen-Year	Mean	N	SD	Min	Max	Skewness
Ret~nNAV	0.4564	4578	0.9337	-0.6577	8.6804	2.4429
monthl~f	0.0803	4578	0.0717	0.0028	0.2821	1.7561
mkt2	0.2362	4578	0.5421	-0.3924	2.4333	2.3265
HS300R	0.0881	4578	0.4053	-0.3118	1.6333	1.6098
indicator_OMK(Outperform market)	1.1582	4578	0.4407	0.3368	4.1106	1.5186
indicator_OHS(Outperform HS300)	1.2968	4578	0.4819	0.4077	4.6448	1.6923
indicator_Orf(Outperform rate of risk free)	1.3145	4578	0.7375	0.3330	7.5504	2.2273
Wealth~t(Wealth ratio w.r.t. market)	0.5979	4578	0.4904	0	1	-0.3992
Weal~300(Wealth ratio w.r.t. HS300)	0.7093	4578	0.4542	0	1	-0.9216
Wealth~f(Wealth ratio w.r.t. rate of risk)	0.6022	4578	0.4895	0	1	-0.4177

From the fifteen-year results reported in Panel D of the table, the mean lifetime NAV return of funds after deducting operating expenses is 0.4564, which is relatively high among the horizons considered. This indicates that when the entire life of a fund is taken as the observation window, funds as a whole are still able to generate fairly considerable positive returns for investors. Over the same period, the mean risk-free rate, mean market return, and mean CSI 300 return are 0.0803, 0.2362, and 0.0881, respectively. The fifteen-year fund return remains higher than all of these benchmarks, suggesting that from the perspective of the full life cycle, funds as a whole still maintain relatively strong return performance.

From the perspective of wealth ratios, the mean wealth ratios of funds relative to the market, the CSI 300, and the risk-free rate are 1.1582, 1.2968, and 1.3145, respectively, all clearly greater than 1. These values are also higher than those observed over the previous horizons, indicating that over the fifteen-year horizon, the cumulative advantage of funds relative to the market, the CSI 300, and the risk-free rate becomes more evident. In particular, funds perform more strongly relative to the CSI 300 and the risk-free rate.

In terms of the proportion of outperforming funds, the percentages of funds that outperform the market, the CSI 300, and the risk-free rate are 59.79%, 70.93%, and 60.22%, respectively. This shows that over the fifteen-year horizon, more than 70% of funds outperform the CSI 300, while the proportions of funds outperforming the market and the risk-free rate are also close to 60%. Compared with the monthly and annual results, the relative advantage of funds becomes more apparent over the long run, indicating that fund performance is more likely to exhibit persistence at longer horizons.

From the perspective of distributional characteristics, the standard deviation of fifteen-year fund returns is 0.9337, the highest among the horizons discussed above, while the skewness is 2.4429, which is also the most pronounced. This suggests that the distribution of lifetime returns is strongly right-skewed, and that a small number of funds with exceptionally strong long-term performance significantly raise the overall mean. Therefore, although the average fifteen-year return and the proportion of outperforming funds are both relatively high, the long-term performance differences across funds are also very substantial, and the overall industry results are influenced to some extent by the strong performance of top funds.

5. CONCLUSION

Before deducting operating expenses, the mean NAV returns of funds are positive across all investment horizons, and in most cases are higher than the risk-free rate, the market return, and the CSI 300 return. This suggests that, on the whole, the fund industry possesses relatively strong return-generating ability before operating costs are taken into account. As the investment horizon extends from monthly to annual, five-year, and fifteen-year (lifetime) periods, the wealth ratios of funds relative to the market, the CSI 300, and the risk-free rate generally show an upward trend, and the proportion of funds outperforming the benchmarks also increases gradually. In particular, over the five-year and lifetime horizons, the proportion of funds outperforming the CSI 300 reaches a relatively high level, indicating that the relative advantage of funds becomes more evident in the long run.

At the same time, the results in the table also show that as the horizon lengthens, both the dispersion and the right-skewness of fund return distributions increase. This indicates that although long-term performance is better on average, the differences across funds also become larger. A small number of exceptionally well-performing funds significantly raise the overall mean. Therefore, when evaluating whether funds truly create value, it is not sufficient to consider only the mean return; rather, it is also necessary to take into account the distribution of returns and the proportion of funds outperforming the benchmarks.

After deducting operating expenses, the mean NAV returns of funds remain positive across all horizons, and in most cases are still higher than the contemporaneous risk-free rate, the market return, and the CSI 300 return. This indicates that funds do not completely lose their value-creating ability after operating costs are taken into account. On the contrary, funds as a whole are still able to provide investors with a certain level of positive returns. As the investment horizon extends from monthly to annual, five-year, and fifteen-year (lifetime) periods, the wealth ratios of funds relative to the market, the CSI 300, and the risk-free rate generally continue to rise, and the proportion of funds outperforming the benchmarks also increases overall. This further suggests that the relative advantage of funds becomes more evident over longer horizons, and that long-term holding is more conducive to the realization of fund performance.

However, as the horizon lengthens, the standard deviation and skewness of fund returns generally increase, indicating that performance dispersion across funds becomes more pronounced in the long run, and that a small number of high-return funds exert a strong upward influence on the overall mean. Therefore, in judging whether funds create value, it is not enough to look only at average returns; the proportion of outperforming funds and the distribution of returns should also be considered jointly. In sum, fund performance after deducting operating expenses still exhibits a certain long-term advantage, but this advantage is not evenly distributed across all funds; rather, it is more concentrated among a subset of better-performing funds.

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