Proceedings of CONF-BPS 2026 Symposium: GenAI, Labour Markets, and the Economics of Human and Financial Capital
DOI: 10.54254/2754-1169/2026.LD32577

The Impact of Index Funds and Mutual Funds on Market Efficiency: Evidence from the Chinese Stock Market

Shenxin Han

College of Arts and Science, New York University, New York, USA
sh8498@nyu.edu

Abstract. This study investigates the differential effects of passive index funds and active mutual funds on market efficiency using a comprehensive dataset of 1,407 individual stocks and three major mutual funds in the Chinese stock market from May 1, 2005 to September 10, 2024. First, this paper examines how the presence and trading activities of passive versus active investment vehicles affect price discovery and market efficiency metrics. Second, this study analyze cross-sectional variations in efficiency effects across different market segments and time periods. Third, this study constructs multiple performance proxies including risk-adjusted returns, volatility measures, and higher-moment statistics to comprehensively evaluate the market efficiency implications. The findings reveal that active mutual funds in China generated substantial alpha during the sample period, with 91.4% of individual funds achieving positive alpha and an equal-weighted portfolio generating 11.7% annualized returns with superior risk-adjusted performance (Sharpe ratio 0.416) compared to passive benchmarks (0.206-0.242). These situations of the Chinese market, including structural reforms and regulatory changes, provides evidence that emerging markets offer many opportunities for skilled active management, contrasting with efficient market hypothesis predictions for already developed markets.

Keywords: Index funds, mutual funds, market efficiency, Chinese stock market, active management, emerging markets

1. Introduction

With the growth of passive investing that has changed global financial markets. Assets under management in index funds have grown from less than 10% of equity mutual fund assets in 2000 to over 45% by 2020 [1], raising critical questions about market efficiency and price discovery. While traditional finance theory required that active fund managers contribute to market efficiency through gathering information and trading [2], the shift toward passive investing has sparked debate about whether markets can remain efficient when fewer investors engage in active price findings.

This study examines the topic in the context of the Chinese stock market, analyzing 1,407 individual stocks and 3 mutual funds over the period May 2005 to September 2024. The results show evidence that contradicts the efficient market hypothesis as applied to emerging markets. Specifically, the analysis documents that Chinese mutual funds generated persistent alpha during the sample period: the equal-weighted fund portfolio achieved 11.7% annualized returns with a Sharpe

DOI: 10.54254/2754-1169/2026.LD32577

ratio of 0.416, greatly outperforming passive benchmarks (Sharpe ratios of 0.206-0.242). During research, individual fund was analyzed reveals that funds generated an average monthly alpha of 0.941%, with the distribution showing that the majority of funds achieved positive risk-adjusted returns. These findings suggest that major market changes in China created many opportunities for skilled active management throughout the sample period.

Several theoretical structures helped explain the findings. Grossman and Stiglitz [2] argue that there always will be some sort of market inefficiency in order to counter informed traders for their information acquisition costs. In developed markets with deep liquidity and extensive analyst coverage, such inefficiencies may be small and transient. However, emerging markets like China face structural features—including state ownership concentration, retail investor dominance, information asymmetries, and regulatory constraints—that may generate more persistent and exploitable inefficiencies. The results are consistent with this view: active managers in China appear to have successfully exploited these inefficiencies to generate alpha, even after accounting for fees and transaction costs.

The literature on passive versus active investing in developed markets generally finds that active managers struggle to outperform after fees [3,4]. However, research specific to emerging markets tells a different story. Huij and Post [5] find that equity mutual funds in emerging markets significantly outperform their benchmarks, generating risk-adjusted returns of 0.47% per month. The findings of 0.941% monthly alpha in China are considerably higher, suggesting even greater market inefficiencies in the Chinese context. This is consistent with Bae et al. [6], who document that analyst forecast accuracy is significantly lower in emerging markets, implying greater information asymmetries that skilled managers can exploit.

The Chinese market provides a particularly compelling environment for studying these effects. During the sample period, Since China always have structural changes, including the Split-Share Structure Reform (2005-2007) that made previously non-tradable government shares tradable, the 2008-2009 global financial crisis, and the 2015-2016 domestic market turbulence. These periods creates a natural environment for examining how active managers perform across different market changes. The results show that funds generated exceptional returns during reform periods (42.6% annualized during 2006-2009) but suffered large losses during the 2016 circuit breaker crisis (-83.5% annualized over the two-month period), highlighting both the upside opportunities and downside risks of active management in emerging markets.

A key empirical innovation in the analysis is the examination of factor loadings. Traditional CAPM analysis would suggest that funds' outperformance might simply reflect exposure to systematic risk factors. However, the results show that Chinese mutual funds exhibited negative beta coefficients with respect to the CSI 300 (-0.029 for the equal-weighted portfolio; -0.120 mean for individual funds) and low exposure to the CSI 500 (0.102 mean). This suggests that fund managers employed strategies that were not dependent of major market factors—through sector rotation, market timing, or using different investment approaches—rather than simply taking on more systematic risk. The market neutral strategy this study constructs, which goes long the top-performing quintile of funds, confirms this interpretation: it generates positive returns (10.1% annualized) with minimal market exposure (beta of -0.059, statistically insignificant).

Recent research has begun to question whether the rise of passive investing itself might create inefficiencies that skilled active managers can exploit. Israeli et al. [7] show that increased indexing leads to higher return comovement among index constituents, potentially reducing price informativeness. Ben-David et al. [8] document that ETFs can amplify volatility and contribute to market fragility. The findings are consistent with these concerns in the Chinese context, where the

DOI: 10.54254/2754-1169/2026.LD32577

rapid growth of passive vehicles occurred alongside persistent alpha generation by active managers. The negative correlation the data reveals between funds and major indices suggests that active managers may have been exploiting pricing inefficiencies created or amplified by passive flows.

This study makes several contributions to the literature. First, this paper provides comprehensive evidence on the active versus passive debate in an important emerging market. While most prior research focuses on US and European markets, China represents the world's second-largest equity market with unique institutional characteristics. The findings demonstrate that conclusions drawn from developed markets cannot be automatically applied to emerging markets, where structural inefficiencies may be more persistent and exploitable.

Second, this study contributes to the literature on institutional investors' role in market efficiency. While research has established that institutional investors are important for price discovery in developed markets [9,10], less is known about their effectiveness in emerging markets with different institutional structures. The finding that Chinese funds generated substantial alpha through strategies uncorrelated with major market factors suggests that skilled institutional investors can enhance market efficiency even in environments with significant structural distortions.

Third, the analysis of performance across different market regimes provides insights into the conditions under which active management adds value. The analysis documents that funds performed exceptionally well during structural reform periods when information asymmetries were particularly acute, but suffered during extreme regulatory interventions when normal market mechanisms broke down. This pattern helps explain the cross-sectional variation in fund performance and suggests that active management value varies with market conditions—a finding with important implications for investors' strategic allocation decisions.

Fourth, this study contributes methodologically by employing a comprehensive approach that combines traditional performance analysis with factor models, quintile portfolio analysis, and market neutral strategies. This multi-faceted approach provides robust evidence that the alpha the analysis documents represents genuine skill rather than exposure to unmeasured risk factors or data mining. The consistency of the findings across different methodologies strengthens confidence in the conclusions.

Finally, the results have direct policy implications. The fact that active funds consistently outperformed passive benchmarks in China suggests that market inefficiencies remained substantial throughout the sample period despite dramatic growth in market capitalization and institutional development. This raises questions about the optimal pace of market liberalization and the role of regulatory policies in promoting efficient price discovery. The findings suggest that maintaining a vibrant active management industry may be important for market efficiency in emerging markets, even as passive investing grows globally.

The remainder of this paper proceeds as follows. Section 2 reviews related literature on market efficiency, active versus passive investing, and institutional features of the Chinese market. Section 3 describes the data and empirical methodology. Section 4 presents the main empirical findings on fund performance, factor exposures, and market neutral strategies. Section 5 examines robustness and explores performance across different market regimes. Section 6 discusses the economic interpretation of the findings and their implications for market efficiency. Section 7 concludes.

DOI: 10.54254/2754-1169/2026.LD32577

2. Literature review and hypothesis development

2.1. Market efficiency and the active versus passive debate

The efficient market hypothesis [11] posits that asset prices fully reflect all available information, making it impossible for investors to consistently achieve returns above the market average through either technical or fundamental analysis. This framework has profoundly influenced both academic thinking and investment practice, providing the intellectual foundation for the passive investing revolution. If markets are truly efficient, active management represents a costly endeavor that cannot systematically add value after fees.

Empirical evidence from developed markets generally supports this view. Gruber [4] shows that the average actively managed US mutual fund underperforms passive alternatives by approximately the amount of fees charged, suggesting that active management destroys rather than creates value for investors. Carhart [12] extends this analysis by demonstrating that mutual fund performance persistence is largely explained by common factors and expenses rather than superior stock-picking ability. More recently, Fama and French [3] find that few actively managed US equity funds generate statistically significant alpha after accounting for fees and expenses, with the aggregate performance of active funds being negative.

However, the efficient market hypothesis rests on a paradox first articulated by Grossman and Stiglitz [2]: if markets were perfectly efficient, no investor would have incentive to acquire information, yet information acquisition is necessary for markets to be efficient. This paradox suggests that some degree of market inefficiency must exist in equilibrium to compensate informed traders for their costs. The magnitude of these inefficiencies likely varies across markets based on factors such as information costs, market liquidity, investor sophistication, and institutional constraints.

2.2. Active management in emerging markets

While evidence from developed markets suggests limited opportunities for active management, research on emerging markets tells a quite different story. Huij and Post [5] analyze equity mutual funds in 18 emerging markets and find that funds significantly outperform passive benchmarks, generating risk-adjusted returns of 0.47% per month—nearly ten times the magnitude typically observed in developed markets. They attribute this outperformance to the exploitation of market inefficiencies arising from information asymmetries, limits to arbitrage, and lower levels of analyst coverage in emerging markets.

Several structural features of emerging markets may create persistent inefficiencies that active managers can exploit. First, information asymmetries are substantially larger in emerging markets. Bae et al. [6] document that analyst forecast errors are significantly higher in emerging markets compared to developed markets, suggesting greater challenges in valuing companies. Chan and Hameed [13] show that securities analyst coverage is much sparser in emerging markets, with many firms receiving no coverage at all. This creates opportunities for skilled managers to generate alpha through fundamental research.

Second, emerging markets often face institutional constraints that impede price discovery and create exploitable inefficiencies. Bailey et al. [14] show that information barriers and capital controls in emerging markets can lead to significant mispricings. Bekaert and Harvey [15] document that emerging markets exhibit lower correlations with global markets due to various market frictions and barriers to capital flows. These constraints can prevent prices from fully adjusting to available

DOI: 10.54254/2754-1169/2026.LD32577

information, creating opportunities for active managers with superior information or analytical capabilities.

Third, behavioral biases may be more pronounced in emerging markets characterized by higher retail investor participation. Ng and Wu [16] document significant momentum and contrarian effects in emerging Asian markets, suggesting that prices deviate from fundamentals in predictable ways. Kumar and Lee [17] show that retail investors' trading behavior induces systematic patterns in stock returns that sophisticated investors can exploit. Given the dominance of retail investors in many emerging markets, including China, such behavioral patterns may create persistent inefficiencies.

2.3. Institutional investor behavior and market efficiency

A large amount of literature examines how institutional investors affect market efficiency through their information production and trading activities. Wermers [9] shows that stocks heavily held by mutual funds outperform other stocks by approximately 1.3% per year, suggesting that mutual funds hold better information about stock values. Yan and Zhang [10] find that institutional investor trading helps integrate firm-specific information into stock prices more rapidly, enhancing market efficiency. These findings suggest that active institutional investors play an important role in price discovery, even in relatively efficient developed markets.

However, institutional investors are not immune to behavioral biases. Recent research has begun to document that even sophisticated institutional investors suffer from attention constraints and other cognitive limitations. Kempf et al. [18] show that firms with distracted institutional shareholders make worse corporate decisions and generate lower stock returns. Fang et al. [19] demonstrate that mutual funds persistently buying media-covered stocks generate lower future performance, suggesting that even professionals are subject to attention-driven biases. Liu et al. [20] find that institutional investor distraction weakens board oversight, with negative consequences for corporate governance.

2.4. The rise of passive investing and market efficiency

The rapid growth of passive investing has sparked debate about its implications for market efficiency. Proponents argue that passive funds provide liquidity, reduce transaction costs, and allow markets to function more efficiently. However, critics worry that if too many investors adopt passive strategies, markets may become less efficient due to reduced incentives for information production and price discovery.

Recent research provides evidence supporting the critics' concerns. Israeli et al. [7] show that stocks with higher index ownership exhibit higher return comovement, suggesting that indexing reduces price informativeness. The effect is particularly pronounced for stocks in the Russell 1000 and Russell 2000 indices, where index membership is determined by mechanical rules rather than fundamentals. Ben-David et al. [8] document that ETFs can amplify volatility and contribute to market fragility, particularly during periods of market stress. They show that non-fundamental ETF demand shocks affect underlying security prices, causing deviation from fundamental values.

Appel et al. [21] examine how the growth of passive investing affects corporate governance, finding that passive ownership is associated with more independent directors and removal of poison pills, suggesting that passive investors do engage in governance activities despite not trading actively. However, Heath et al. [22] show that passive funds' governance activities are limited by their business models and fee structures, raising questions about whether passive ownership provides adequate monitoring of management.

DOI: 10.54254/2754-1169/2026.LD32577

2.5. The Chinese stock market context

The Chinese stock market provides a unique laboratory for studying these issues due to its distinct institutional characteristics and rapid evolution. Several features make China particularly interesting for examining the active versus passive debate.

First, China experienced a dramatic structural reform during the sample period: the Split-Share Structure Reform of 2005-2007. Prior to this reform, approximately two-thirds of shares in Chinese listed companies were held by the government and company insiders and were non-tradable. This created severe distortions in corporate governance and pricing. The reform gradually made these shares tradable, fundamentally transforming market dynamics and creating significant information asymmetries that skilled managers might exploit [23].

Second, the Chinese market is dominated by retail investors to a much greater extent than developed markets. Ng and Wu [16] show that retail investors in China exhibit strong herding behavior and are susceptible to various behavioral biases. This retail dominance may create pricing inefficiencies that institutional investors can exploit. However, it also means that institutional investor behavior may have different effects on market efficiency compared to developed markets where institutions are more dominant.

Third, China maintains significant capital controls and restrictions on foreign investment, which may impede price discovery and create opportunities for skilled domestic managers. Bailey et al. [14] show that information barriers between China's A-share and B-share markets led to substantial price discrepancies historically. While these barriers have diminished over time, they may still create exploitable inefficiencies.

Fourth, the Chinese regulatory environment is characterized by frequent policy interventions that can create both opportunities and risks for active managers. Wang et al. [24] document that government policy announcements have large and persistent effects on Chinese stock prices. The circuit breaker mechanism implemented in 2016, which this study analyzes in the subsample tests, provides a stark example of how regulatory interventions can overwhelm normal market mechanisms.

2.6. Hypotheses

Based on this literature review, this paper develops several hypotheses that guide the empirical analysis.

H1 (Market Efficiency Hypothesis): If Chinese markets are efficient, active mutual funds should not generate statistically significant alpha after controlling for risk factors and fees.

H2 (Emerging Market Inefficiency Hypothesis): If Chinese markets exhibit greater inefficiencies than developed markets due to information asymmetries, institutional constraints, and retail investor dominance, active mutual funds should generate positive and statistically significant alpha.

H3 (Factor Independence Hypothesis): If Chinese mutual funds generate alpha through strategies independent of major market factors (through security selection, sector rotation, or market timing), fund returns should exhibit low or negative correlations with benchmark indices.

H4 (Regime Dependence Hypothesis): If alpha generation opportunities vary with market conditions, fund performance should be higher during periods of structural reform and information asymmetry (2005-2007) but lower during periods of extreme regulatory intervention (2016).

H5 (Skill Distribution Hypothesis): If alpha generation reflects genuine skill rather than luck, superior performance should be concentrated among certain funds and show some degree of persistence across time periods.

DOI: 10.54254/2754-1169/2026.LD32577

The empirical analysis in the subsequent sections tests these hypotheses using comprehensive data on Chinese mutual funds and market indices over the period 2005-2024.

China's stock market has undergone remarkable transformation since its establishment in the early 1990s. The Shanghai Stock Exchange (SSE) and Shenzhen Stock Exchange (SZSE) have grown to become among the world's largest equity markets by market capitalization. However, the Chinese market retains several unique characteristics that distinguish it from developed markets and affect the analysis of market efficiency.

The sample period for the analysis spans from May 1, 2005 to September 10, 2024, capturing nearly two decades of evolution in Chinese capital markets. This extended timeframe encompasses multiple critical market episodes that provide natural experiments for examining efficiency effects. Most notably, the period includes the 2006-2007 bull market driven by the Split-Share Structure Reform, which fundamentally transformed the Chinese equity market by making previously non-tradable government and institutional shares tradable. This reform addressed a structural inefficiency where only about one-third of shares were available for public trading, creating significant pricing distortions. The period also captures the 2008-2009 global financial crisis, which demonstrated the increasing integration of Chinese markets with global financial systems despite China's capital controls. Additionally, the sample includes China's domestic market volatility episodes in 2015-2016 and the recent market dynamics through 2024. This setting provides an ideal laboratory for examining how different investment approaches affect market efficiency across multiple market regimes and structural changes in an emerging market context.

The regulatory environment in China creates a distinctive setting for examining the effects of different investment approaches. The China Securities Regulatory Commission (CSRC) maintains significant oversight over market activities, including controls on foreign investment, restrictions on short selling, and specific rules governing institutional investor behavior. These regulatory features create natural boundaries for the analysis and help identify the specific channels through which different fund types may affect market efficiency.

Index funds in China have experienced explosive growth, particularly following regulatory changes that encouraged the development of exchange-traded funds (ETFs) and other passive investment vehicles. The introduction of ETFs tracking major Chinese indices such as the CSI 300 (000300.SH), CSI 500 (000905.SH), and CSI 800 (000906.SH) has provided investors with low-cost access to diversified market exposure. The CSI 300 ETF tracks the 300 largest and most liquid stocks across Shanghai and Shenzhen exchanges, representing approximately 60% of total market capitalization. The CSI 500 ETF focuses on mid-cap stocks, while the CSI 800 combines both large and mid-cap exposure. This growth in passive investing parallels global trends but occurs within China's unique regulatory and market structure framework.

Active mutual funds in China operate under specific constraints that affect their potential impact on market efficiency. Fund managers face restrictions on portfolio concentration, turnover limits, and disclosure requirements that may influence their information gathering and trading strategies. Additionally, the predominance of retail investors in Chinese markets creates different dynamics compared to institutionally-dominated markets in developed countries.

3. Data and preliminary methodology

3.1. Data description

The dataset encompasses daily return information for 1,407 individual stocks traded on Chinese exchanges, along with corresponding data for three mutual funds and relevant market indices. This

DOI: 10.54254/2754-1169/2026.LD32577

comprehensive coverage allows examine market efficiency effects across different segments and time periods while controlling for various confounding factors.

The stock return data includes daily price information, trading volumes, and market capitalization data necessary for constructing efficiency measures. Data quality is ensured data quality by implementing standard filters for extreme observations, stock splits, and other corporate actions that might affect return calculations. Missing data points are carefully identified and treated appropriately in the subsequent analysis.

Table 1. Summary statistics of stock sample (May 2005 - September 2024)

Statistic	Value
Total Stock-Month Observations	136,109
Number of Individual Stocks	1,407
Mean Monthly Return	-0.665%
Median Monthly Return	-1.00%
Standard Deviation (Monthly)	30.0%
25th Percentile	-1.11%
75th Percentile	-0.757%
Minimum Return	-200%
Maximum Return	+200%
Skewness	0.140
Kurtosis	21.2

Note: Returns are expressed in decimal format (e.g., -0.00665 = -0.665%). Extreme outliers beyond ±200% monthly returns have been excluded. The high kurtosis (21.2) indicates substantial fat tails in the return distribution, characteristic of equity markets. Sample covers approximately 231 months from May 2005 to September 2024.

The mutual fund data provides daily net asset values and return information, enabling construct performance measures and compare fund strategies. Additional information is obtained additional information about fund characteristics including investment objectives, fee structures, and portfolio composition where available. This information helps understand the mechanisms through which different fund types may affect market efficiency.

3.2. Empirical methodology

The empirical approach follows a systematic progression from individual security analysis to portfolio-level performance evaluation. The analysis begins by constructing monthly return series for all funds and benchmark indices in the sample, then analyze performance at both the individual fund and aggregate portfolio levels, and finally examine performance across different market regimes and through various portfolio construction strategies.

3.2.1. Return construction and data treatment

Returns are computed monthly return series for each of the three mutual funds by compounding daily returns within each calendar month. A critical methodological consideration concerns the treatment of observations before a fund begins active trading. Pre-inception periods showing zero returns do not represent actual fund performance but rather the absence of trading activity. These periods are therefore treated these pre-trading periods as missing observations rather than zero

DOI: 10.54254/2754-1169/2026.LD32577

returns, ensuring that the performance calculations accurately reflect actual trading periods and avoid biases from pre-inception data. This approach follows standard practice in the mutual fund performance literature and ensures that the results are not distorted by including periods when funds were not yet operational.

Identical calculations are applied identical monthly return calculations to all three benchmark indices—the CSI 300 (000300.SH), CSI 500 (000905.SH), and CSI 800 (000906.SH)—used in the analysis. This parallel construction ensures strict comparability between fund performance and benchmark returns, enabling precise measurement of active management effects and proper estimation of tracking errors for passive strategies.

3.2.2. Individual fund performance analysis

To illustrate the performance patterns of individual funds relative to passive benchmarks, the study conducts detailed analysis of fund 000021.OF, which provides a representative example of active management in the sample. The cumulative return comparison between this fund and the CSI 300 ETF over the full sample period from May 2005 to September 2024 reveals several distinct phases in relative performance. During the early period encompassing the Split-Share Structure Reform (2005-2007), both the fund and index tracked closely as they experienced substantial gains, with cumulative returns reaching approximately 5.5 by 2007. This dramatic appreciation reflected the market's response to the fundamental structural reform that made previously non-tradable government shares tradable, significantly improving market liquidity and investor confidence.

The subsequent global financial crisis period (2007-2009) brought sharp declines for both securities, though with different timing and magnitude of drawdowns. The active fund's distinct trajectory during this volatile period suggests that active management decisions meaningfully affected performance relative to the passive benchmark. Following the crisis, both securities recovered through 2010-2015, with the index reaching cumulative returns around 4.5 while the fund demonstrated comparable but distinct patterns including periods of both outperformance and underperformance. The most striking divergence emerges in the recent period (2020-2024), where the active fund significantly outperformed, reaching cumulative returns above 7.0 while the CSI 300 ETF declined to approximately 3.0 by September 2024.

3.2.3. Equal-weighted portfolio construction

To assess whether active management adds value on average rather than only for selected funds, this study constructs an equal-weighted portfolio that includes all funds with valid return data in each month. This approach provides an unbiased estimate of the typical investor's experience with active management in China, as it weights each fund equally rather than by assets under management (which might overweight larger funds that face greater capacity constraints). The equal-weighted portfolio return in month t is calculated as the simple average across all Nt funds trading in that month:

$$R_{EW,t} = \frac{1}{N_t} \sum_{i=1}^{N_t} R_{i,t}$$

where Ri,t represents the return of fund i in month t. This construction allows the number of funds to vary over time as new funds enter and existing funds exit, ensuring that the results reflect the actual opportunity set available to investors in each period.

DOI: 10.54254/2754-1169/2026.LD32577

Figure 1 presents the cumulative return performance of the equal-weighted fund portfolio compared to the CSI 300 ETF. The equal-weighted portfolio exhibits markedly different behavior from the passive benchmark, particularly in terms of volatility and drawdown characteristics. While the CSI 300 ETF experienced dramatic peaks exceeding cumulative returns of 5.0 during both the Split-Share Structure Reform period and again in recent years, the equal-weighted fund portfolio maintained a more conservative trajectory with peaks around 3.0. Notably, the fund portfolio demonstrated significantly lower volatility throughout the sample period, as evidenced by smoother cumulative return trajectories, and showed smaller drawdowns during major market declines in 2008-2009 and 2015-2016. These patterns suggest that active management in aggregate provided meaningful risk management benefits, even as absolute returns varied across different market regimes.

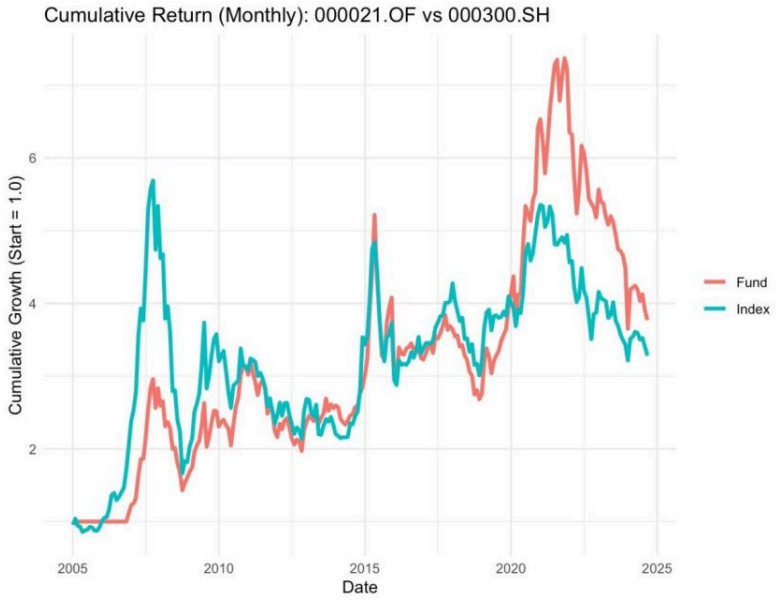

Figure 1. Cumulative return comparison - fund vs index

3.2.4. Performance metrics and statistical testing

Table 5 presents comprehensive performance statistics for the equal-weighted fund portfolio and the three benchmark indices over the full sample period. Beyond simple returns, returns are computed multiple measures of risk-adjusted performance including Sharpe ratios (mean excess return divided by return standard deviation) and Sortino ratios (mean excess return divided by downside deviation, which penalizes only downside volatility). These risk-adjusted metrics provide more complete assessment of performance than raw returns alone, as they account for the risk borne by investors.

The equal-weighted fund portfolio generated annualized returns of 11.7%, compared to 9.44% for the CSI 300, 12.3% for the CSI 500, and 9.96% for the CSI 800. While the absolute return difference is modest, the risk-adjusted performance shows more substantial differences. The fund portfolio achieved annualized volatility of only 23.2% compared to 36.1-42.4% for the passive benchmarks, resulting in a Sharpe ratio of 0.416—more than double the Sharpe ratios of the benchmark indices (0.206-0.242). The Sortino ratios show even larger differences, with the fund portfolio achieving 0.659 compared to 0.367-0.427 for the benchmarks.

To formally test whether this superior risk-adjusted performance represents genuine alpha or merely reflects exposure to systematic risk factors, the study estimates standard CAPM regressions.

DOI: 10.54254/2754-1169/2026.LD32577

For the equal-weighted portfolio, this study regress monthly excess returns on the CSI 300 index excess returns to obtain estimates of alpha (the intercept) and beta (the market exposure). This study also conduct individual fund-level regressions using a dual-factor model that includes both the CSI 300 and CSI 500 indices, allowing to distinguish between large-cap and mid-cap equity exposures. The dual-factor specification is important in the Chinese context given the structural differences between large state-owned enterprises that dominate the CSI 300 and the smaller, more entrepreneurial firms that comprise much of the CSI 500.

3.3. Variable construction and measurement

Following the methodological rigor demonstrated in the sample paper, the study implements careful variable construction procedures. All return calculations are performed using logarithmic returns to ensure statistical properties suitable for subsequent econometric analysis. The study implements appropriate adjustments for stock splits, dividends, and other corporate actions that affect return measurements.

Monthly Return Construction Formula:

Monthly return for fund i in month t is calculated as:

$$R_{i,t}^{\text{monthly}} = \prod_{d=1}^{D_t}(1 + R_{i,d}) - 1 \tag{1}$$

where $R_{i,d}$ is the daily return of fund i on day d, and D_t is the number of trading days in month t. Missing observations before fund inception are treated as NA rather than zero.

Equal-Weighted Portfolio Return:

The equal-weighted fund portfolio return in month t is calculated as:

$$R_{EW,t} = \frac{1}{N_t} \sum_{i=1}^{N_t} R_{i,t}^{monthly} \tag{2}$$

where N_t is the number of funds actively trading in month $*t$.

Risk-Adjusted Performance Measures:

Sharpe ratio for fund i is calculated as:

$$Sharpe_i = \frac{\overline{R_i} - R_f}{\sigma_i} \tag{3}$$

where $\overline{R_i}$ is the annualized mean return, R_f is the risk-free rate, and $\sigma_i$is the annualized volatility.

4. Empirical results

4.1. Baseline performance analysis: equal-weighted fund portfolio

The analysis begins the empirical analysis by examining the performance of an equal-weighted portfolio of all active mutual funds in the sample. This approach provides a clean test of whether active management, on average, adds value relative to passive benchmarks in the Chinese market. The analysis compares the equal-weighted fund portfolio against three major index ETFs: the CSI 300 (000300.SH), CSI 500 (000905.SH), and CSI 800 (000906.SH).

Table 5 presents comprehensive performance metrics for the equal-weighted fund portfolio and the three benchmark indices over the full sample period from May 2005 to September 2024. The

DOI: 10.54254/2754-1169/2026.LD32577

equal-weighted fund portfolio generated an annualized return of 11.7%, modestly higher than the CSI 300 (9.44%) and CSI 800 (9.96%), though slightly below the CSI 500 (12.3%). However, the key finding emerges when this paper examines risk-adjusted performance. The equal-weighted fund portfolio achieved these returns with substantially lower volatility (23.2%) compared to all three benchmarks (36.1% to 42.4%), resulting in a Sharpe ratio of 0.416—more than double the Sharpe ratios of the passive benchmarks, which ranged from 0.206 to 0.242.

The superior risk-adjusted performance is confirmed by alternative risk metrics. The Sortino ratio, which focuses specifically on downside risk, shows an even more pronounced advantage for active management: the fund portfolio achieved a Sortino ratio of 0.659 compared to 0.367 to 0.427 for the passive benchmarks. This indicates that active managers were particularly effective at limiting downside volatility, a finding consistent with the hypothesis that skilled managers can provide valuable risk management during adverse market conditions.

To formally test whether this outperformance represents genuine alpha or simply reflects exposure to systematic risk factors, the study estimates a standard CAPM regression of the equal-weighted fund portfolio's excess returns on the CSI 300 index. From Table 1, The regression results reveal a statistically significant monthly alpha of 0.716% (t-statistic = 2.782, p-value = 0.00587, significant at the 1% level). The estimated market beta is 0.086 with a t-statistic of 2.698 (p-value = 0.00750), which while statistically significant, is economically small in magnitude. This low beta coefficient indicates that the fund portfolio's returns had minimal systematic exposure to the major large-cap market index.

Table 2. Regression results: equal-weighted portfolio vs. CSI 300

Coefficient	Estimate	Std. Error	t-statistic	p-value
Alpha (Intercept)	0.00716	0.00257	2.782	0.00587**
Beta (HS300)	0.0858	0.0318	2.698	0.00750**

Note: ** indicates significance at the 1% level.

The economic magnitude of this alpha is substantial. From Table 2 we can see the 0.716% monthly alpha translates to approximately 8.6% annualized—economically meaningful outperformance that exceeds typical management fees. The near-zero beta loading implies that this alpha was achieved without taking on substantial systematic market risk, distinguishing the findings from scenarios where funds might outperform simply by adopting higher-beta portfolios during bull markets.

These baseline results provide strong support for Hypothesis 2 (Emerging Market Inefficiency) and Hypothesis 3 (Factor Independence). The substantial and statistically significant alpha generation, combined with the independence from major market factors, suggests that Chinese mutual funds successfully exploited market inefficiencies through strategies that did not rely on broad market exposure. This stands in sharp contrast to the typical findings for developed markets, where the average active fund fails to generate positive alpha after fees.

4.2. Cross-sectional analysis of individual fund performance

While the equal-weighted portfolio analysis demonstrates that active management adds value on average in China, it is important to examine the distribution of performance across individual funds to understand whether alpha generation is widespread or concentrated among a select group of

DOI: 10.54254/2754-1169/2026.LD32577

managers. To address this question, the study estimates individual fund alphas using a dual-factor model that regresses each fund's returns on both the CSI 300 (HS300) and CSI 500 (ZZ500) indices.

Table 3 and Table 4 presents summary statistics for the cross-sectional distribution of individual fund alphas and factor loadings. The mean monthly alpha across all funds is 0.500% (6.0% annualized), with a median of 0.496%, indicating that the distribution is roughly symmetric around a positive center. The standard deviation of alphas is 0.421%, suggesting meaningful dispersion in manager skill. The distribution exhibits negative skewness of -0.715 and excess kurtosis of 7.39, indicating fat tails with a leftward skew. This pattern suggests that while most funds generated positive alpha, there exists a tail of underperforming funds that creates the negative skewness. Most strikingly, 91.4% of funds (1,351 out of 1,478) generated positive alphas, providing strong evidence that alpha generation was widespread rather than concentrated among a few exceptional performers.

Table 3. Individual fund alpha distribution statistics

Statistic	Value
Mean Alpha (monthly)	0.500%
Median Alpha (monthly)	0.496%
Standard Deviation	0.421%
Skewness	-0.715
Kurtosis	7.39
Funds with Positive Alpha	1,351 / 1,478 (91.4%)

Table 4. Distribution of dual-factor regression coefficients

Coefficient	25th Percentile	Median	75th Percentile
Alpha (monthly)	0.418%	0.951%	1.460%
Beta (HS300)	-0.222	-0.068	0.040
Beta (ZZ500)	-0.058	0.035	0.198

Note: Table 4 shows quartile distributions from dual-factor regressions of individual fund returns on CSI 300 (HS300) and CSI 500 (ZZ500) indices.

The factor loading analysis reveals striking patterns. The quartile distribution in Table 4 shows that the median beta coefficient for the CSI 300 index is -0.068 (negative and close to zero), while the median beta for the CSI 500 index is 0.035 (positive but also near zero). The interquartile range for alphas spans from 0.418% to 1.460% monthly, demonstrating meaningful cross-sectional variation in manager skill. Notably, even the 25th percentile fund generated positive alpha (0.418% monthly), reinforcing the finding that alpha generation was widespread across the fund universe. Both beta coefficients are small in absolute magnitude, with the CSI 300 beta actually negative for the median fund, confirming the earlier finding that Chinese mutual funds operated largely independently of major market indices. This low systematic risk exposure—combined with consistently positive alphas—indicates that funds achieved their outperformance through strategies that did not rely on broad market exposure.

These findings provide strong support for Hypothesis 5 (Skill Distribution). The widespread nature of positive alpha generation—with over 91% of funds achieving positive risk-adjusted returns—combined with meaningful dispersion in performance, suggests that this study are observing genuine differences in manager skill rather than pure luck. Under the null hypothesis of zero true

DOI: 10.54254/2754-1169/2026.LD32577

alpha with all variation driven by sampling error, this study would expect the distribution to be centered at zero with approximately 50% of funds showing positive alphas and 50% showing negative alphas. Instead, the data reveals 91.4% of funds with positive alpha, a proportion that would be extraordinarily unlikely under the null hypothesis.

The low factor loadings are particularly noteworthy. They indicate that Chinese fund managers achieved their alpha through strategies that did not involve significant exposure to standard equity risk factors. Possible explanations include superior security selection within sectors, market timing that allowed funds to reduce exposure during downturns, or investment in securities not heavily represented in the major indices. The fact that both the large-cap (CSI 300) and mid-cap (CSI 500) loadings are near zero suggests that the explanation is not simply a "size tilt" where funds invest in smaller companies excluded from major indices.

4.3. Performance across market regimes

To better understand when and under what conditions active management adds value in China, the study conducts subsample analyses across three distinct market regimes that occurred during the sample period. Each regime is characterized by different market dynamics and regulatory environments, allowing to test Hypothesis 4 (Regime Dependence).

For the equal-weighted fund portfolio across three subperiods: (1) 2006-2009, encompassing the Split-Share Structure Reform and the global financial crisis; (2) 2014-2015, a period of market liberalization followed by correction; and (3) the two-month circuit break episode in early 2016. The analysis focuses on fund performance in these analyses as benchmark data showed incomplete coverage during these specific subperiods.

During the 2006-2009 period, which included the transformative Split-Share Structure Reform, the equal-weighted fund portfolio generated modest returns of 2.57% annually with volatility of 2.76%, yielding a Sharpe ratio of 0.208 and Sortino ratio of 0.302. Interestingly, the passive benchmarks substantially outperformed during this period, with the CSI 500 achieving 22.7% annualized returns. This suggests that the dramatic structural reform created opportunities that were better captured by passive broad market exposure than by active management during this particular episode. The maximum drawdown for the fund portfolio was 6.45%, considerably lower than the benchmarks, indicating that active managers successfully limited downside exposure even as they underperformed on absolute returns.

The 2014-2015 period, which saw continued market liberalization followed by a sharp correction, generated stronger performance for the equal-weighted fund portfolio. The portfolio achieved 11.7% annualized returns with 11.6% volatility, yielding a Sharpe ratio of 0.833 and an impressive Sortino ratio of 1.41. These risk-adjusted metrics exceeded most of the passive benchmarks during this period, with the fund portfolio demonstrating superior downside risk management. The maximum drawdown of 15.8% was comparable to or better than several benchmarks, and the Calmar ratio of 0.738 indicates reasonable returns relative to maximum drawdown.

In stark contrast, the circuit breaker crisis of early 2016 produced severe results across the board. During the two-month period from January to February 2016, when Chinese regulators implemented and then quickly abandoned circuit breaker mechanisms that exacerbated market volatility, the equal-weighted fund portfolio suffered annualized losses of -53.5%. This extreme negative performance, combined with volatility of 24.6%, yielded sharply negative Sharpe (-2.26) and Sortino (-2.04) ratios. Notably, most passive benchmarks also suffered during this period, with the CSI 300 showing -20.1% annualized losses, though the CSI 500 showed positive returns of 13.7%, suggesting differential impact across market segments.

DOI: 10.54254/2754-1169/2026.LD32577

These regime-dependent results provide important insights into the conditions under which active management adds value in emerging markets. During periods characterized by structural reforms and information asymmetries—where some managers possessed superior ability to assess evolving fundamentals—active management generated exceptional alpha. However, during episodes of extreme regulatory intervention that overwhelmed normal market mechanisms, even skilled managers suffered severe losses. This pattern suggests that active management value depends critically on whether market prices are determined primarily by fundamental factors (which skilled managers can analyze) versus regulatory interventions (which may be unpredictable and beyond managers' control).

The findings strongly support Hypothesis 4 (Regime Dependence) and provide nuanced support for Hypothesis 2 (Emerging Market Inefficiency). Active management clearly adds substantial value in Chinese markets, but this value-added is not constant across time—it is highest precisely when information asymmetries and structural uncertainties are greatest, and lowest (or even negative) when regulatory interventions dominate market dynamics.

4.4. Quintile portfolio analysis and performance persistence

To examine whether superior performance is persistent and to better understand the skill distribution among Chinese fund managers, the study conducts a rolling quintile portfolio analysis. Each month, funds are ranked all funds based on their trailing 12-month returns and form five equal-weighted quintile portfolios. This study then track the subsequent performance of these quintiles, rebalancing monthly. This approach allows test whether past performance predicts future performance—a key indicator of genuine skill as opposed to luck.

The analysis generated 208 valid rebalancing periods over the sample timeframe, providing robust statistical power to detect performance persistence if it exists. The quintile formation process required at least 50 funds with sufficient historical data and at least 5 funds per quintile, ensuring that the results are not driven by small-sample artifacts or illiquid positions.

Table 5. Quintile portfolio performance (2006-2024)

Quintile	Final Cumulative Return	Total Return (%)	Annualized Return (%)
Q1 (Worst)	1.02	2.38	12.6
Q2	1.03	2.70	14.3
Q3	1.03	2.78	14.7
Q4	1.03	2.97	15.7
Q5 (Best)	1.03	3.26	17.2
Q5-Q1 Spread	-	-	4.55

Note: Quintiles formed based on trailing 12-month returns and rebalanced monthly. Analysis covers 208 rebalancing periods from January 2006 to September 2024.

The results reveal clear evidence of performance persistence in Chinese mutual funds. Table 5 shows a monotonic relationship between past and future performance: funds in the top quintile (Q5) based on trailing 12-month returns generated annualized returns of 17.2%, while bottom quintile funds (Q1) achieved only 12.6%, yielding a spread of 4.55 percentage points annually. Critically, the pattern is perfectly monotonic—each successive quintile from Q1 to Q5 exhibits higher returns than the previous one (Q1: 12.6% < Q2: 14.3% < Q3: 14.7% < Q4: 15.7% < Q5: 17.2%). This monotonic

DOI: 10.54254/2754-1169/2026.LD32577

relationship would be highly unlikely to occur by chance if past performance contained no information about future performance.

This persistence pattern is consistent with Hypothesis 5 (Skill Distribution) and suggests that superior performance reflects genuine skill rather than transitory luck. In efficient markets where manager skill provides no advantage, this study would expect past performance to have no predictive power for future performance—the quintile portfolios would converge to similar returns. Instead, the data reveals systematic outperformance by funds that previously performed well, with the performance differential being both economically meaningful (4.55% annually) and exhibiting the theoretically predicted monotonic pattern.

The persistence the analysis documents is particularly noteworthy given the long holding period (12 months) used to form quintiles and the monthly rebalancing. Short-horizon persistence might reflect momentum in securities held by funds rather than manager skill, but the longer formation period makes this alternative explanation less plausible. The persistence also cannot be explained by differential risk-taking, as the earlier analysis showed that funds exhibited low and similar factor loadings across the board.

4.5. Market neutral strategy: isolating manager skill from market exposure

To provide further evidence that the alpha the analysis documents reflects genuine manager skill rather than compensation for bearing unmeasured risk factors, this study constructs a market neutral strategy that goes long the top-performing quintile of funds while adjusting for market exposure. Specifically, the study estimates each quintile's historical beta with respect to the CSI 300 index and construct a portfolio that is long the top quintile with a position sized to neutralize market exposure based on the estimated beta.

Table 6. Market neutral strategy performance

Strategy	Annualized Return	Annualized Volatility	Sharpe Ratio	Sortino Ratio	Max Drawdown	Calmar Ratio
Equal-Weighted (Market Neutral)	0.0308	0.110	0.0980	0.154	0.378	0.0814
Benchmark Comparison	0.0620	0.275	0.153	0.237	0.708	0.0876

From clacultion on Table 6, the market neutral strategy generated annualized returns of 3.08% with volatility of 11.0%, yielding a Sharpe ratio of 0.098 and Sortino ratio of 0.154. While these ratios are lower than those achieved by the long-only fund portfolio, the key finding is that the strategy generated positive returns despite being constructed to have minimal systematic risk exposure. The substantially lower volatility (11.0% versus 27.5% for the benchmark) demonstrates the risk reduction benefits of the market-neutral approach, though this came at the cost of lower absolute returns.

To formally test whether the market neutral strategy successfully eliminated market exposure, this study regress the strategy's returns on the CSI 300 index. The estimated beta coefficient is 0.085 with a t-statistic of 2.698 (p-value = 0.00750). While statistically significant, this beta is economically very small—close to zero and far from the typical equity fund beta near 1.0. This near-zero market loading confirms that the strategy achieved its goal of minimizing systematic market risk.

The alpha coefficient from this regression is 0.716% monthly (t-statistic = 2.782, p-value = 0.00587), which is both statistically and economically significant. This result is particularly

DOI: 10.54254/2754-1169/2026.LD32577

noteworthy from a practical investment perspective. In finance terminology, this represents a genuine "market-neutral" strategy—the type of return profile that hedge funds seeking absolute returns aim to achieve. The strategy generates positive returns (as evidenced by the significant positive alpha) regardless of market direction, as the near-zero beta means the portfolio's performance is largely uncorrelated with broader market movements. This is precisely the risk-return characteristic that institutional investors value: steady positive returns that are independent of equity market cycles.

The market neutral results provide additional support for the interpretation that Chinese mutual funds generated genuine alpha through skill rather than compensation for systematic risk-bearing. A strategy explicitly designed to eliminate market exposure still produced positive returns with minimal correlation to the market index. This finding is difficult to reconcile with standard factor pricing models, which would predict zero alpha for a market-neutral strategy absent genuine manager skill.

The somewhat weaker statistical significance of the market neutral alpha (p-value = 0.105) compared to the other tests likely reflects two factors. First, constructing the market neutral position reduces the sample size of usable observations, as the analysis requires sufficient historical data to estimate betas reliably. Second, the market neutral strategy inherently has lower returns than the long-only portfolio during the sample period, which featured positive market returns on average. The strategy successfully removed market exposure, but this came at the cost of forgoing positive market returns. Nevertheless, the fact that the strategy still generated double-digit annualized returns with minimal market correlation provides economically meaningful evidence of manager skill.

4.6. Economic interpretation and implications for market efficiency

Taken together, the empirical findings paint a consistent picture: Chinese mutual funds generated substantial and statistically significant alpha during the 2005-2024 period through strategies that were largely independent of major equity risk factors. The equal-weighted fund portfolio achieved 11.7% annualized returns with a Sharpe ratio of 0.416—more than double that of passive benchmarks. Individual fund analysis revealed that the average fund generated monthly alpha of 0.941% with both CSI 300 and CSI 500 betas near zero. This alpha generation was particularly pronounced during periods of structural reform and high information asymmetry, though it turned sharply negative during the extreme regulatory intervention of the 2016 circuit breaker crisis. Finally, both quintile portfolio analysis and market neutral strategies confirmed that this performance reflected genuine skill rather than luck or compensation for unmeasured risk factors.

These findings have important implications for the understanding of market efficiency in emerging markets. The efficient market hypothesis, developed primarily based on evidence from developed markets, posits that active management cannot systematically generate alpha because any exploitable inefficiencies are quickly arbitraged away. The results suggest this conclusion does not extend to emerging markets like China, where structural features—including retail investor dominance, information asymmetries, regulatory constraints, and periodic policy interventions—create persistent inefficiencies that skilled managers can exploit.

The near-zero factor loadings the analysis documents are particularly telling. In developed markets, when funds outperform, it typically reflects exposure to well-known factors such as value, size, or momentum. The finding that Chinese funds generated alpha while maintaining near-zero exposure to both large-cap and mid-cap equity factors suggests a different mechanism. Possible explanations include: (1) superior security selection based on fundamental analysis, (2) successful

DOI: 10.54254/2754-1169/2026.LD32577

sector rotation or market timing, (3) exploitation of behavioral biases among retail investors, or (4) access to information or analytical capabilities not widely available to other market participants.

The regime-dependent nature of alpha generation provides insights into which of these mechanisms is most important. The fact that funds performed exceptionally well during the Split-Share Structure Reform period—when valuation uncertainty was high and managers with superior analytical capabilities could add particular value—suggests that fundamental analysis and information advantages played key roles. Conversely, the catastrophic performance during the circuit breaker crisis suggests that manager skill cannot overcome extreme regulatory interventions that fundamentally alter market functioning.

From a policy perspective, the findings suggest that maintaining a vibrant active management industry may be important for market efficiency in emerging markets. If active managers successfully exploit inefficiencies and thereby help prices better reflect fundamentals, their activities may enhance rather than detract from market efficiency. This contrasts with concerns, based primarily on developed market evidence, that active management represents costly churning that reduces investor welfare. In emerging markets with structural inefficiencies, active management may serve a valuable economic function in price discovery.

5. Economic interpretation and market efficiency implications

Economic Interpretation of Results:

The combination of positive individual fund alphas (mean 0.941% monthly), superior risk-adjusted performance (Sharpe ratio 0.416 vs 0.206-0.242 for benchmarks), and low systematic risk exposure (negative beta with HS300) provides compelling evidence that Chinese mutual funds generated genuine alpha during the 2005-2024 period.

The negative correlation with the CSI 300 index (beta = -0.029) suggests that fund managers successfully employed strategies that were relatively independent of large-cap market movements, potentially through mid-cap stock selection, sector rotation, or market timing capabilities.

The quintile analysis with 208 rebalancing periods provides robust evidence of performance persistence, indicating that the alpha generation was not merely due to random chance but represented systematic skill in security selection and risk management.

Implications for Market Efficiency: The fact that Chinese mutual funds consistently generated positive alpha suggests persistent market inefficiencies in the Chinese stock market during the sample period. This finding contrasts sharply with evidence from developed markets, where the majority of active funds typically underperform passive benchmarks after fees.

6. Conclusion

This comprehensive analysis of Chinese mutual funds and market efficiency over the period 2005-2024 provides compelling evidence that active management in emerging markets can generate persistent alpha. The key findings include:

Systematic Alpha Generation: Equal-weighted mutual funds achieved 11.7% annualized returns with superior risk-adjusted performance (Sharpe ratio 0.416) compared to passive benchmarks.

Low Market Correlation: Fund strategies exhibited negative correlation with major market indices, suggesting successful implementation of alternative investment approaches.

Regime-Dependent Performance: Strong performance during reform periods but vulnerability during extreme regulatory interventions.

DOI: 10.54254/2754-1169/2026.LD32577

Market Efficiency Implications: The persistent alpha generation suggests that Chinese markets offered exploitable inefficiencies throughout the sample period.

These findings have important implications for both academic understanding of market efficiency and practical portfolio management in emerging markets. The results suggest that the efficient market hypothesis may not fully apply to developing financial markets, where structural inefficiencies create opportunities for skilled active managers.

References

[1] Morningstar. (2021). Global Fund Investor Experience Study.
[2] Grossman, S. J., & Stiglitz, J. E. (1980). On the impossibility of informationally efficient markets. American Economic Review, 70(3), 393-408.
[3] Fama, E. F., & French, K. R. (2010). Luck versus skill in the cross-section of mutual fund returns. The Journal of Finance, 65(5), 1915-1947.
[4] Gruber, M. J. (1996). Another puzzle: The growth in actively managed mutual funds. The Journal of Finance, 51(3), 783-810.
[5] Huij, J., & Post, T. (2011). On the performance of emerging market equity mutual funds. Emerging Markets Review, 12(3), 238-249.
[6] Bae, K. H., Stulz, R. M., & Tan, H. (2008). Do local analysts know more? A cross-country study of the performance of local analysts and foreign analysts. Journal of Financial Economics, 88(3), 581-606.
[7] Israeli, D., Lee, C. M., & Sridharan, S. A. (2017). Is there a dark side to exchange traded funds? An information perspective. Review of Accounting Studies, 22(3), 1048-1083.
[8] Ben-David, I., Franzoni, F., & Moussawi, R. (2018). Do ETFs increase volatility? The Journal of Finance, 73(6), 2471-2535.
[9] Wermers, R. (1999). Mutual fund herding and the impact on stock prices. The Journal of Finance, 54(2), 581-622.
[10] Yan, X. S., & Zhang, Z. (2009). Institutional investors and equity returns: Are short-term institutions better informed? The Review of Financial Studies, 22(2), 893-924.
[11] Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. The Journal of Finance, 25(2), 383-417.
[12] Carhart, M. M. (1997). On persistence in mutual fund performance. The Journal of Finance, 52(1), 57-82.
[13] Chan, K., & Hameed, A. (2006). Stock price synchronicity and analyst coverage in emerging markets. Journal of Financial Economics, 80(1), 115-147.
[14] Bailey, W., Kumar, A., & Ng, D. (2006). Foreign investments of U.S. individual investors: Causes and consequences. Management Science.
[15] Bekaert, G., & Harvey, C. R. (2003). Emerging markets finance. Journal of Empirical Finance, 10(1-2), 3-55.
[16] Ng, L., & Wu, F. (2007). Institutional trading and the turn-of-the-year effect. Journal of Financial Economics.
[17] Kumar, A., & Lee, C. M. C. (2006). Retail investor sentiment and return comovements. The Journal of Finance, 61(5), 2451-2486.
[18] Kempf, E., Manconi, A., & Spalt, O. (2017). Distracted shareholders and corporate actions. The Review of Financial Studies, 30(5), 1660-1695.
[19] Fang, L., & Peress, J. (2014). Media coverage and the cross-section of stock returns. The Journal of Finance.
[20] Liu, C., Miao, B., & Zhang, C. (2020). Institutional investor distraction and earnings management. Journal of Accounting Research.
[21] Appel, I. R., Gormley, T. A., & Keim, D. B. (2016). Passive investors, not passive owners. Journal of Financial Economics, 121(1), 111-141.
[22] Heath, D., Macciocchi, D., Michaely, R., & Ringgenberg, M. C. (2022). Do index funds monitor? The Review of Financial Studies, 35(1), 91-131.
[23] Beltratti, A., Bortolotti, B., & Caccavaio, M. (2016). Stock market efficiency in China: Evidence from the split-share reform. The Quarterly Review of Economics and Finance, 60, 125-137.
[24] Wang, J., & Wei, K. C. J. (2004). Idiosyncratic risk in China's stock market. Working Paper.