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# In search for managerial skills beyond common performance measures

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ABSTRACT

One caveat of current literature on the value of active management is the lack of treatment for the performance measures that can be gamed. We propose to use the performance measure that can't be manipulated with respect to the underlying distribution, time variation, nor estimation error, (the manipulation-proof performance measure (MPPM, Goetzmann et al. (2007)), to rank all active U.S. domestic equity mutual funds from 1980 to 2013 on a quarterly basis to analyze managerial skills. We find fund managers in the higher ranked persistently outperform lower ranked managers by posting higher gross and net fund returns, higher holding-based returns, and generating positive return gap. Analyzing the holdings of the portfolios indicates higher ranked managers hold stocks with higher information asymmetry, especially the growth companies that are younger, smaller, and with lower liquidity. Our results show that the spread on gross and net fund returns between highest ranked and the lowest ranked fund managers is between 49 and 52 basis points per month. The holding returns are statistically significant for up to six months indicating the stock picking skills exist for those higher ranked managers. Even though MPPM identifies managerial skills, the positive alphas may not be warranted due to their operating expenses.



## 1. Introduction

Anecdotal evidence suggests mutual fund managers have stock picking and/or market timing skill to outperform their peers on a pre-expenses and risk adjusted basis. Kacperczyk et al. (2014) document an existence of value creation mutual fund managers who have both market timing (in recessions) and stock picking (in booms) skills to generate persistence performance up to one year. Chung and Kim (2014) find that high consistency funds generate more than 2% additional risk adjusted returns in the subsequent year after accounting for fund size, past performances, sample period, and expenses. Petajisto (2013), and Cremers and Petajisto (2009) find fund managers who hold different holdings than their benchmark index could outperform these benchmarks on fee adjusted bases. Without using the holding data, Amihud and Goyenko (2013) regress fund returns on multifactor benchmark models to estimate the $R^2$ and document managerial stock selection skills would predict their future performance. On the other hand, a vast amount of literature find little evidence that fund managers generate positive abnormal returns over long horizons. French (2008), and Fama and French (2010) argue that actively managed mutual funds cannot outperform passively managed funds to conclude on average those fund managers do not have stock picking skills. Similarly, Bollen and Busse (2004) find superior performance from mutual fund managers are short-lived.[3]

Given the controversial on the duration and the existence of managerial skills, perhaps a more important issue is whether we are using the appropriate performance measure that would be less likely for managerial manipulation. Recent mutual fund scandals

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[3] As compared to Jensen (1969) for stock selection over periods of 10–20 years, and Treynor and Mazuy (1966) and Henriksson (1984) for market timing over periods of 6–10 years. Others such as Brown and Coetzmann (1995), Carhart (1997), and Porter and Trifts (1998) find the persistence performance is either time sensitive/sample specific or cannot provide additional risk-adjusted returns beyond common risk factors.

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such as late trading and market timing has caused regulators emphasize on extensive disclosures and regulation reform.[4] These issues are equally important if not more in hedge fund industry as many hedge funds in U.S. registered with the Securities and Exchange Commission (SEC) on a voluntary basis prior to the Dodd–Frank Act of 2010. Cici and Palacios (2015) find some mutual funds effectively use options to generate income even though the trades could lead to underperformance. If managers could generate high investment returns with little risk or report overly consistent returns over a longer time frame, it is important to know the persistent performance on managerial skills would not be another Bernie Madoff or Ponzi Schemes. Consequently, we demand a manipulation-proof performance measure that can really separate a skillful manager from a manipulated one.

Goetzmann et al. (2007) argue fund managers could use informationless manipulations such as writing at-the-money call options and/or increasing their leverages to alter/improve fund performance.[5] Since the performance measure in the current literature either assumes the underlying distribution (regardless of including the estimation error), or assumes stationary in the estimation of return distribution, or induces estimation error (for example, induces positive biases), managers could manipulate their fund returns since the current compensation structure to mutual fund managers rewards mainly on fund size.[6] Consequently, the (short-lived) persistence on performance could be achieved without the contribution from their informed managers and their intellectual buy side analysts. This makes the findings on managerial skills less robust. In this paper, we use the manipulation-proof performance measure (MPPM, Goetzmann et al. (2007))[7] to rank all active domestic equity fund managers. We also analyze the quarterly holdings to examine the stock picking skills of fund managers. Using the MPPM to rank fund managers and to examine their quarterly holdings has major advantages. First, by using the MPPM to rank fund managers on their ex ante performance allows us to filter out those uninformed trades from fund managers who achieve superior fund performance through writing calls and puts options or simply altering leverages. The measures allow us to precisely identify the percentage of funds that are beating the benchmark index. Second, by looking into their quarterly holdings and analyzing the changes through a time series trend allows us to establish linkages on their fund performance to stock selection and market timing skills. If managers achieve superior performance through luck or manipulation, the results from analyzing their quarterly holdings would serve this purpose to filter those managers who game through the performance measures.

Our findings not only draw policy implications to the regulators but also shed lights to fund complexes that are in search for better compensation mechanisms to reward truly skillful fund managers from their manipulated counterparts. By combining the MPPM and quarterly holdings from fund managers, we could alleviate labeling fraud-like outperformance or informationless trades from skillful managers. Our results show that managers in the higher ranked MPPM deciles persistently outperform lower ranked managers by posting higher gross and net fund returns, higher holding-based returns, and generating positive return gap. Those higher ranked fund managers tend to hold stocks with higher information asymmetry. Their holdings tend to be clustering in younger, smaller, growth, and lower liquidity stocks. To quantify the managerial skills through the Fama and French (2015) five-factor model analysis, our results show that higher ranked managers could generate 15–29 basis points while lower ranked managers would show a loss of 20–26 basis points on the subsequent month based on the quarter-end holdings. The differences of the monthly gross and net fund returns of the highest and the lowest rank can account for 49–52 basis points.

Our results are also important to investors and fund holders. Investors could earn trading profits if they follow the disclosed quarterly holdings from the highest ranked managers to establish long positions of the stocks that are added to the portfolios and short positions of the stocks that are removed from their portfolios. The differences on long and short positions following the highest ranked managers based on their quarter end holding would generate 31 basis points based on the Fama and French (2015) five-factor model. The persistent of the stock picking skills could live up to two consecutive quarters. A further analysis on the return gap indicates a positive and significant relationship between MPPM rank and return gap. However, it is important to note that even though the highest ranked managers have better stock picking skills and are significant different than the lower ranked managers, their fund returns are not robust enough among other asset pricing models to warrant positive alphas due to their frequent transactions and related operating expenses

Our findings are consistent with Daniel et al. (1997) who show that stocks that are picked by mutual funds outperform a characteristic-based benchmark with the gain being approximately equal in magnitude to the funds' management fee. Our findings are also consistent with Fama and French (2010) who find mutual funds in aggregate realize net returns that underperform four-factor benchmark by about the costs in expense ratios and most mutual funds do not have the skill to produce benchmark adjusted expected returns that cover costs. On the other hand, our results do show that highest ranked managers trade more often (have higher quarterly churn rate) and hold smaller and growth firms to outperform their counterparts, a result that is consistent with Yan and Zhang (2009) who argue those short-term institutional traders are more informed. However, our findings are contrast to Wermers (2000) who finds fund managers could earn more from picking stocks to offset their trading costs. Our results indicate even though top decile fund managers have stock picking skills, those skills do not warrant risk adjusted performance considering the trading and managerial expenses.

Overall, our findings show that MPPM is a more reliable performance measure for investors to select equity mutual funds. We claim the MPPM to be a more effective measure to rank managers and to predict fund performance than other performance measures which are not isolated from manipulation and less robust in measuring managerial skills. Section 2 describes the research design, our hypothesis, and data construction. Section 3 reports our empirical findings. Section 4 concludes the paper.

## 2. Research design, hypothesis, and data construction

Our research questions are (1) Whether MPPM can truly differentiate skillful and informed managers from their manipulated counterparts and be able to predict future fund returns, holding returns, and return gap without bias? (2) Whether the

[4] Since September 2003, the U.S. mutual fund industry has been mired in the worst scandal in its 65-year history. The scandal has produced in excess of 40 civil and criminal prosecutions, more than $2 billion in monetary sanctions, numerous Congressional hearings and bills, and a bevy of new regulations. For details, please refer to Bullard (2006).

[5] Similarly, Weisman (2002), and Brown et al. (2004) also show that the traditional mutual fund performance measures can be gamed by fund managers.

[6] For example, Carhart (1997) ranks by prior year return and by prior three-year abnormal return.

[7] The MPPM has been gradually adopted in recent mutual fund performance studies. Titman and Tiu (2011) apply MPPM to examine hedge funds. Huang et al. (2011) apply MPPM to evaluate actively-managed mutual funds for robustness check on their empirical results. Bhattachara et al. (2012) find using MPPM can distinguish sophisticated investors from retail investors while Sharpe ratio cannot. Even though mutual funds managers are less found to engage on return smoothing or investing on illiquid assets, mutual fund are still the target since they are widely documented using derivatives (Lynch-Koski and Potiff (1999), and Cao et al. (2010)).

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