Is Money Smart?
A Study of Mutual Fund Investors’ Fund Selection Ability

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ABSTRACT
A previous study finds evidence to support selection ability among active fund investors for equity funds listed in 1982. Using a large sample of equity funds, I find evidence that funds that receive more money subsequently perform significantly better than those that lose money. This effect is short-lived and is largely but not completely explained by a strategy of betting on winners. In the aggregate, there is no significant evidence that funds that receive more money subsequently beat the market. However, it is possible to earn positive abnormal returns by using the cash flow information for small funds.

Having experienced dramatic growth in the past two decades, the mutual fund industry plays an important role in the U.S. economy. As a major investment vehicle, open-end mutual funds at the end of the first quarter of 1998 managed about $3.3 trillion in assets, a sum that exceeds all bank savings deposits. Due to the great number of funds in existence, evaluating managers’ performance and selecting funds with relatively high risk-adjusted returns can be an especially difficult and challenging task. The growth of data companies such as Lipper, Morningstar, and Micropal and the explosion in the publication of books and articles on mutual funds both reflect investors’ tremendous demand for detailed mutual fund information and investment advice. This huge demand suggests that many investors are making mutual fund investment decisions themselves and many of them study current and historical information about funds carefully during the decision-making process. With all the effort spent in selecting and evaluat-
ing mutual funds, there is one natural question to ask: Can investors forecast mutual fund performance? This study investigates whether investors’ purchasing and selling decisions are able to predict funds’ future performance, and whether investors are smart in selecting funds.

A number of recent papers study the investment performance of mutual fund managers, yet only Gruber (1996) studies the ability of investors to select funds. Beginning with Jensen (1969), many researchers have examined the performance of different groups of mutual fund managers using various methods. Most find that managers on average underperform the market, but others find that managers display some management skill. Brown and Goetzmann (1995) and Carhart (1995) find that a value-weighted index of equity funds has a small positive risk-adjusted return that is slightly higher than that of an equally weighted index. This may be interpreted as evidence that the average dollar invested in U.S. equity funds beats the average mutual fund and the benchmark.

Do mutual fund investors display selection ability? In other words, do revisions in the aggregate mutual fund portfolio forecast future returns? Gruber (1996) investigates this issue by examining the risk-adjusted returns of newly invested money in actively managed mutual funds. He reports monthly cash-flow-weighted alphas for 227 funds over the period of January 1985 through December 1994. His evidence shows that the return on new cash flows is higher than the average return for all investors in these funds.

In the present paper, I examine the statistical and economic significance of two effects on a large mutual fund database:

1. **Gruber’s “smart money” effect**: whether investors are smart ex ante, in that they move to the funds that will perform better

2. **The information effect**: whether investors’ moves have information that can be used to make abnormal returns.

For the smart money effect to exist, the implementation of trading strategies is not required. For the information effect to exist, the strategies have to be implementable. I first apply a performance test introduced by Grinblatt and Titman (1993) to examine the smart money effect. This test was

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1 It is well documented that investors chase past positive performance and that performance persists on a short-term basis. Patel, Hendricks, and Zeckhauser (1990), Ippolito (1992), Sirri and Tufano (1998), Goetzmann and Peles (1993), Chevalier and Ellison (1995), Roston (1996), and others have reported that money flows into past good performers and flows out of past poor performers. Researchers have also provided strong evidence for performance persistence: Hendricks, Patel, and Zeckhauser (1993), Goetzmann and Ibbotson (1994), Brown, Goetzmann, Ibbotson, and Ross (1992), Carhart (1997), Brown and Goetzmann (1995), Malkiel (1995), Elton, Gruber, and Blake (1996), and Grinblatt and Titman (1994) all suggest that performance persists. These two phenomena suggest that active fund investors may have selection ability and obtain high relative returns.

2 The mutual fund database, which has fund data from 1961 to 1993, is provided by Mark Carhart, Eugene Fama, and Kenneth French, and is substantially broader than Gruber’s sample. It includes defunct funds, merged funds, and newly opened funds.
initially proposed to measure the portfolio performance of mutual funds. The Grinblatt–Titman (GT) measure uses the portfolio weights in the preceding period as a benchmark and thus is less subject to the problems caused by inappropriate benchmarks. Since the GT measure is not implementable in practice, it does not provide information to study the information effect. To further investigate the practical implications of investors' buying and selling decisions, I form different trading strategies based on new money flows and examine the raw returns as well as the risk-adjusted returns realized by the constructed portfolios. From the trading strategies, I investigate both the smart money effect, whether new money flows predict future fund returns, and the information effect, whether aggregate new money flows have information that can be used to make abnormal returns.

To capture the time variation in mutual fund risks and risk premia, I adopt the conditional performance measure introduced by Shanken (1990), Ball, Kothari, and Shanken (1995), and Persion and Schadt (1996). This measure allows for active strategies based on macroeconomic conditions and possible "style effects" (Persion and Schadt (1996), Brown and Goetzmann (1994), Fama and French (1992)). According to the conditional measure, a portfolio strategy should not be regarded as having superior performance if it can be replicated using readily available public information. This conditional performance measure uses predetermined instruments for the time-varying expectations and controls common variation due to public information. In the context of the smart money effect, the conditional method allows us to determine whether the effect is due to a rational response to macroeconomic variables (e.g., interest rate variables) or to style variables such as dividend yield, size, and book-to-market ratio. The failure of this conditional method to explain away the effect suggests that investors use fund-specific information to make their mutual fund investment choices.

The results from the GT test support the smart money effect: investors are able to select funds by moving away from the poor performers and toward the good performers. The trading strategies suggest evidence that the raw returns as well as risk-adjusted returns for funds with positive new money flow are significantly higher than those with negative new money flow over the short term. This finding is consistent with the empirical evidence in Gruber (1996). The trading strategies, however, suggest that for the whole sample there are no significant positive abnormal returns over the market from constructing a portfolio of funds with positive new money. Thus there is no significant evidence that active investors in general can beat the market. Interestingly, there is evidence that active investors in small funds can beat the market. The trading strategies allowing some time delay in the cash flow information show that, for the whole sample, investors' cash flow moves cannot be used to earn abnormal returns; however, there is evidence for the information effect for small funds.

By comparing portfolios that follow new money signals with portfolios that follow performance signals, I find that the smart money effect cannot be completely explained by investors chasing past fund performance. How-
ever, a significant percentage of the performance variations in the smart money strategy is explained by the performance variations in the “repeat winner” strategy. I also find that superior returns are earned principally by new money flowing into and out of small funds rather than large funds. The fact that the above result is robust to both the unconditional and conditional measures indicates that the smart money effect is likely due to fund-specific information. The empirical tests of the conditional performance measure indicate a negative correlation between changes in the conditional beta and changes in net new money flows, which is consistent with results in Ferson and Warther (1996) and Ferson and Schadt (1996).

The paper is organized as follows. Section I presents the methodology and Section II describes the data. The empirical results are set forth in Section III. Section IV concludes.

I. Methodology

A. The Benchmark Free Aggregate Performance Measure

I apply a measure of portfolio performance introduced by Grinblatt and Titman (1993) to estimate aggregate investors’ ability in selecting mutual funds and switching among them. The GT measure employs portfolio holdings and uses its own portfolio holdings in the preceding period as a benchmark.

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\text{GT Measure}_t = \sum_{j=1}^{N} R_{j,t+1}(w_{j,t} - w_{j,t-1}),
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where \( w_{j,t} \) is the portfolio weight for fund \( j \) at time \( t \) and \( R_{j,t+1} \) is the return of fund \( j \) between time \( t \) and time \( t + 1 \).

The GT measure in expression (1) represents the dollar return of a zero-cost portfolio. It also estimates the covariance between the proportional holdings of a particular fund and its subsequent returns. Under the null hypothesis that investors have no fund selection ability and that expected returns are constant over time, both current and past weights are uncorrelated with current returns and thus expression (1) converges to zero in large samples.\(^3\)

Under the alternative hypothesis that the investor has selection ability, expression (1) should be positive and converge to the covariance under the

\(^3\) One potential concern about the GT measure is that it could be positive even if the investor is merely gradually increasing the systematic risk of the portfolio. As mentioned by Grinblatt and Titman (1993), this problem should not be severe for large samples. I further address the problem by regressing the dollar returns of the zero-cost portfolio on the market factors. The coefficient for the single factor model and those for the market factor and size factor of the three-factor model are not significantly different from zero. The coefficient for the book-to-market factor is significantly negative. Thus, there is no evidence that the systematic risk of the zero-cost portfolio increases over time. Implications of the GT measure can be further studied using simulated portfolios.
assumption that the $w_{j,t-1}$'s are uncorrelated with $R_{jt}$'s. Notice that the zero investment assumption implicitly assumes that the investor is shorting some assets to finance the purchase of others. Note also that Grinblatt and Titman use the average of expression (1) over time as their performance measure and they perform significance tests on a cross-section of mutual funds, whereas in this study I draw inferences on a time series of estimated values of expression (1). Under the null hypothesis that the investors have no selection skill, estimates of expression (1) representing the dollar returns of a zero-cost portfolio are serially uncorrelated.

Instead of incorporating both selection and timing effects as in Gruber (1996), this aggregate performance measure examines investors' fund selection ability exclusively. The measure is not affected by the flow of aggregate money into and out of stock mutual funds because the weights are normalized each month.

Throughout the paper, I use a “follow the money” approach, introduced by Elton, Gruber, and Blake (1996b), to control for survivorship bias. If a fund merges into another, I assume the investors place money in the fund that continues to exist after the merger. Thus mergers do not cause severe survivorship bias because my tests do not exclude defunct funds before they actually disappear. In the case where I cannot identify the new fund into which the old one is merged, I assume that the investors place money in the average surviving fund. By following this approach, I do not require a fund to survive for two quarters after it is included in the aggregate portfolio. However, this does not completely eliminate survivorship bias because the premerger return in the merging month is unknown. If merger is conditioned on performance, then the survivorship bias described by Brown et al. (1992) and Brown, Goetzmann, and Ross (1995) might obtain. Nevertheless, I control for survival biases to the extent possible.

B. Trading Strategies

In order to explore the practical implications of the aggregate investor’s selection ability, I compare the returns and the risk-adjusted returns of different trading strategies, most of which are based on past new money flow (newly invested money) signals. The portfolios corresponding to the investment strategies are invested as follows:

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4 The mean of expression (1) is $\sum_{j=1}^{J} \sum_{t=1}^{T}[R_{jt}(w_{jt} - w_{j,t-k})]/T$.

5 More than 95 percent of the mergers in my sample occur either at the beginning or at the end of the month according to my data set. For mergers that occur at the beginning of each month, I use returns of the merger partner for the merger month and forward in my portfolio calculation. For mergers that occur at the end of each month, I use the return of the merger fund for the merger month and the returns of the merger partner for the merger month forward in my portfolio calculation. For the mergers that occur on other dates of the month, I use either the return of the merger fund or the return of the merger partner for the month of the merger depending on whether the merger occurs before or after the 15th of each month. I do the same to calculate the alphas for the fund regression approach.