Do Mutual Fund Media Recommendations Hold Value? An Empirical Analysis of *The Wall Street Journal's* SmartMoney Fund Screen

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Abstract

Using daily return data, we examine the pre and post listing performance of 389 mutual funds published in *The Wall Street Journal's* SmartMoney Fund Screen column during 2005. Across models and fund classifications, we find that on average the listed funds generate positive abnormal returns during the year before publication. Post publication, average fund performance declines by over 200 basis points. Our tests indicate that post publication cash flows to the funds are unable to explain the lack of persistence in performance, but changes in the average fund benchmark risk levels do provide a partial explanation for the results.

Introduction

Recent academic papers have established that media coverage and advertising heavily influence investors' mutual fund choices (e.g., Jain and Wu 2000; Cronqvist 2006; Gallaher, Kaniel, and Starks 2006), and recent work by Tetlock (2007) emphasizes the influence that *The Wall Street Journal* has on the investment community. Late in 2004, the *WSJ* began to publish a column entitled "SmartMoney Fund Screen," which provides a list of the best performing mutual funds based on specific criteria such as fund objective, historical returns, and expense ratios. Although the column does not explicitly recommend that individuals invest in the listed funds, it is likely that many investors view the list as implicitly recommending funds that are most likely to perform the best in the future. A natural question to ask is what is the value to investors of the mutual fund lists provided in the weekly column?

The focus of this study is on the pre and post listing performance of the listed funds. There is an extensive academic literature on mutual fund performance, and the general conclusion is that mutual fund managers are unable to consistently generate superior returns over time. However, some recent equity fund studies identify specific fund characteristics which are able to predict funds that are most likely to deliver superior performance in the future. For example, Kacperczyk, Sialm, and Zheng (2006) define a return gap as the difference between a fund's reported return and the return of a hypothetical buy and hold return based on the most recently disclosed fund holdings. They find that funds with large past return gaps yield average excess returns of 1.2 percent a year over the S&P 500. Likewise, Cremers and Petajisto (2007) find that more active funds, as measured by the deviations of the fund's holdings from the holdings of the fund's benchmark, significantly outperform their benchmark indices in the future by over two percent per year.

Our study examines whether the SmartMoney funds exhibit superior risk adjusted performance before being published in the *WSJ* and whether the funds generate positive abnormal returns after being listed. Our work is most closely related to the work of Jain and Wu (2000). They examine 294 equity funds advertised in *Barron's* and *Money* magazine. They find that preadvertisement performance is positive, but there is no evidence of superior performance in the postadvertisement period. They conclude that the goal of advertising is to use the past superior performance of mutual funds to attract more money into the funds given that continued superior performance is unlikely. Our fund sample is unique from that of Jain and Wu (2000) in that the appearance of the fund in the media is not a conscious decision on the part of the mutual fund organization but reflects the implicit recommendation of a trusted organization within the investment community.

Besides the data sample, our study is unique along two dimensions. First, instead of focusing on one specific fund group or type, our fund sample includes all types of mutual funds. The funds listed in the SmartMoney column can be divided into the following five categories: domestic equity, international equity, sector, fixed income, and hybrid. Almost all mutual fund performance studies focus on only one category of funds and explicitly exclude other fund types because they use asset pricing models specifically designed to measure the performance of the fund type being examined. The overwhelming majority of fund studies focuses on domestic equity funds and uses the Carhart (1997) model to measure performance. Studies on international funds (e.g., Glassman and Riddick 2006), sector funds (e.g., Tiwari and Vijh 2005; Choi 2007), fixed income funds (e.g., Blake, Elton, and Gruber 1993; Ferson, Henry, and Kisgen 2006), and hybrid funds (e.g., Comer 2006; Comer, Larrymore, and Rodriguez 2007) are far less numerous, and each develop models specifically for that fund category. To allow us to include

all types of funds and achieve consistency in how performance is measured across fund types, we choose to measure the performance of each fund using a fund specific benchmark that matches the investment style and prospectus objective of the fund. We directly compare performance and examine the effectiveness of the SmartMoney screen across the five categories using this performance measure. In addition, we also use the most widely accepted asset pricing model for each fund category to confirm that our results are not driven by the fund specific benchmark choice.

Secondly, our study uses daily fund returns and daily benchmark factor returns to measure performance. Kothari and Warner (2001) show that standard performance measures are unable to detect large magnitudes of superior performance when monthly return data are used. In addition, Goetzmann, Ingersoll, and Ivkovic (2000) demonstrate that conclusions concerning portfolio performance are sensitive to data frequency. Only recently has daily return data been used to measure performance for equity and hybrid mutual funds (e.g. Bollen and Busse 2001, 2004; Comer, Larrymore, and Rodriguez 2007) and to the best of our knowledge, no study has used daily returns when focusing on international, sector, or fixed income funds. Our use of daily data allows us to measure performance over a smaller time interval yet not sacrifice the power needed to detect abnormal performance.

We examine the performance of 389 mutual funds published in *The Wall Street Journal's* "SmartMoney Fund Screen" column during 2005. Across models and fund types, we find that on average the listed funds generate positive alphas during the year before publication. Post publication, there is an over 200 basis point decline in the average performance of the funds. Across fund types, the most drastic decline is observed for the domestic equity and sector funds where post publication performance drops by over 300 basis points, and according to the

category specific model employed, the average post publication performance becomes significantly negative.

Then, we examine two potential explanations for the decline in performance. First, Edelen (1999) documents a negative relationship between the abnormal return of equity funds and investor cash flows to the fund. Given that large cash flows to the fund immediately after publication could explain our findings, we test for and find no evidence that post publication cash flows or levels influence post publication performance. Second, results in the mutual fund tournament literature (e.g., Brown, Harlow, and Starks 1996; Chevalier and Ellison 1997; Busse 2001; and Elton, Gruber, Krasny, and Ozelge 2007) indicate that equity fund managers strategically shift the risk of their portfolio based on their past success. Such risk shifting behavior could affect estimated performance since studies (e.g. Mamaysky, Spiegel, and Zhang 2006) document an inverse relationship between performance and estimates of beta when monthly return data are used. Given the pre publication success of our fund sample, we test for changes in the funds' post publication risk levels. We find that the majority of funds do not alter their benchmark risk levels, but those that do are much more likely to increase than decrease risk. Most importantly, those that do increase risk demonstrate an over 570 basis point drop in performance during the post publication period which provides a partial explanation for our results.

This paper is organized as follows: Section 1 discusses the SmartMoney Fund Screen and provides a description of the fund sample. Section 2 introduces the empirical methodology used to measure risk adjusted performance. Section 3 provides empirical results focusing on the pre and post listing performance of the fund sample. Section 4 examines the relationship between

post listing performance and cash flows to the funds. Section 5 discusses the relationship between post listing performance and benchmark risk levels. Section 6 concludes.

I. The SmartMoney Fund Screen Sample

The SmartMoney Fund Screen column debuted in *The Wall Street Journal* on September 7, 2004, as part of an expansion of the Personal Journal section of the newspaper. Typically, the column is published on a weekly basis with few exceptions. Each article focuses on either a specific style of funds (e.g., mid cap funds, emerging market funds), funds with specific characteristics (e.g., low minimum investment funds, funds with long time managers), or funds that fit a specific theme (e.g., funds for retirees, funds for IRAs). The column provides background information on the past and current performance of the fund group on which it is focused. Then, in the last paragraph of the article, the column describes the screens used to select the funds that are listed at the end of the article. For the listed funds, each article always provides the fund name, ticker, and Lipper fund category. Depending on the theme of the article, additional information such as average past return, expense ratio, or total net assets is also provided.

The screen used to determine which funds to list are typically based on the following five criteria: historical returns, expense ratios, minimum required initial investment, net assets, and fund load. The screen used for each criterion varies depending on the theme of the article but has several consistent features. Historical returns must be in the top quarter or half of all funds. Depending on the article's theme, the screen may use one, three, five, or ten year historical returns or some combination of the returns as the criteria. Current expense ratios must be in the bottom half of funds, and several screens require expenses to be in the bottom quarter.

Typically, the minimum initial investment is required to be greater than or equal to $5000 although some screens use a value as low as $500 or as high as $25,000. Fund total net assets are required to be at least $50 million. Load funds are always eliminated. Additional criteria are used if dictated by the article's theme.

Our sample is based on 389 funds listed in 45 SmartMoney articles from January 4, 2005 to December 27, 2005.[1] Table 1 provides summary statistics of the listed funds while Appendix A lists the titles of the articles published during the year.[2] In reporting the summary statistics, we place each published fund into one of the following five broad mutual fund classifications: domestic equity, international equity, sector, hybrid (asset allocation and balanced funds), and fixed income. These groups are consistent with how the academic literature segments mutual funds. Each classification is based on the fund objective that is published in the fund's prospectus. Given the various themes of the articles, several funds are listed more than once over the course of the year. In the summary statistics, we count each fund listing as a separate occurrence given that each selection of the fund may have been due to different fund characteristics (e.g., it was a mid cap fund and it has a long time manager). However, in the empirical section, we do report results in which funds with multiple listings are only counted once as part of the analysis.

Results included in Table 1 are based on end of year data from CRSP for 2004, and we report both mean and median values. Domestic equity funds form slightly less than half of the fund listings while fixed income funds are the smallest category representing 6.0% of the sample.

[1] A total of 400 funds across 46 articles were listed during the year. We exclude 10 funds included in the July 12, 2005 article entitled "Underperformers" because the article explicitly states that these are funds that individuals should consider selling. One additional fund is also excluded from our sample. Birmiwal Oasis is listed in the January 4, 2005 article, but the fund does not publicly disclose any information (returns, expenses, net assets, etc.).
[2] In reporting the summary statistics, total net asset data and expense data are missing for four funds and thus are not part of the average.

On average, the hybrid and equity funds have been in existence the longest (averages of 28.7 and 18.9 years respectively). As measured by both average and median total net assets, the equity funds are the largest in size. For all fund classifications, average total net assets are much greater than the median indicating some very large funds are part of the sample. Expense ratios are relatively low compared to the mutual fund universe. They range from 0.72% (hybrid) to 1.30% (sector) which reflects the use of low expenses as a screening criterion. Overall, there does not appear to be anything extreme in the basic characteristics of any of the fund categories relative to fund samples used in other performance evaluation studies.[3]

II. Empirical Methodology: Measuring Performance

Our goal is to examine the pre and post publication performance of the funds listed in the SmartMoney column. The main issue which needs to be addressed is the appropriate asset pricing model to estimate abnormal performance. Ideally, we would like one specific model that can measure the performance of funds regardless of their investment focus so that we can compare results across fund classifications. However, such a model does not exist.

Thus, we take two approaches to estimating abnormal performance. For the first approach, we use a single index model as follows:

$$r_{p,d} = \alpha_p + b_p r_{b,d} + e_{p,d} \tag{1}$$

where $r_{p,d}$ is the daily excess return of fund p on day d and $r_{b,d}$ is the daily excess return of the most appropriate benchmark index given the fund's investment style.

For each fund in our sample, we determine an appropriate benchmark index given the fund's investment style. We note the benchmark listed in the fund prospectus, and we also note

[3] As a direct comparison, the characteristics of this sample are roughly similar to the equity sample of Jain and Wu (2000), the hybrid sample of Comer, Larrymore, and Rodriguez (2007), and the fixed income sample of Comer and Rodriguez (2007).

each fund's Morningstar style box classification. Then, we select a benchmark index that is most closely matched with the listed benchmark and style classification from our family of indices for which daily return data is available. Although the benchmark from the prospectus would be the obvious choice, daily returns often are not available from traditional public sources, especially for some of the more specialized indices for the international and sector fund categories.[4] When daily returns are available for the prospectus benchmark, we automatically use that benchmark in the model. A complete list of the daily benchmark indices used in estimating performance is available in Appendix B.

For domestic equity funds, the daily benchmark indices used are the Russell 1000, midcap, and 2000 indices each of which has a growth, value, or blend subindex. For the foreign equity funds, we use the daily MSCI indices. For the sector funds, we use the S&P Supercomposite 1500 Sector indices. For the fixed income funds, we employ the Lehman Brothers bond indices. Because hybrid funds invest in both equities and fixed income securities, we combine the appropriate Russell and Lehman indices using the allocation weights of the benchmark index listed in the prospectus. All of the daily indices used are total return indices.

The advantage of using the single benchmark index model is that we are using one consistent model type across all fund categories. However, there is the concern that the benchmarks used may be inefficient and that passive investment strategies may exhibit evidence of abnormal performance even though the managers have no special skill. In addition, inferences about fund performance can be strongly influenced by the choice of benchmark.

Thus, we also use a second approach to estimating performance to see if results are qualitatively similar. In this approach, we use the most widely accepted asset pricing model for

[4] For example, The FBR Gas Utility Fund is a part of our sample. In its prospectus, the fund lists the American Gas Association Stock Index as its benchmark. We are unable to obtain daily returns for this index from any source.

each fund classification. We refer to this as the category specific performance model. For domestic equity funds, the Carhart (1997) model is widely accepted for measuring abnormal performance. The Carhart model is as follows:

$$r_{p,d} = \alpha_p + \sum_{s=1}^{4} b_{ps} r_{s,d} + e_{p,d} \tag{2}$$

where $r_{p,d}$ is the excess return of fund p on day d, and $r_{s,d}$ represents the daily returns of the following four stock market factors: 1) the excess return of the market portfolio, 2) the Fama French (1993) size factor, 3) the Fama French (1993) book to market factor, and 4) the Carhart momentum factor.

For hybrid funds, Comer, Larrymore, and Rodriguez (2007) use a model explicitly designed to control for a fund's fixed income exposure, and they demonstrate that the model is appropriate for examining hybrid fund performance. The model is an extension of the Carhart model and takes the form

$$r_{p,d} = \alpha_p + \sum_{s=1}^{4} b_{ps} r_{s,d} + \sum_{b=1}^{4} b_{pb} r_{b,d} + e_{p,d} \tag{3}$$

where $r_{s,d}$ represents the four Carhart factors and $r_{b,d}$ represents the daily excess returns to a set of bond indices. In the bond maturity version of the model, which we use in this study, the daily excess returns from the following bond indices are included in the model: 1) intermediate maturity government/credit index, 2) long maturity government/credit index, 3) mortgage, and 4) high yield. The bond portion of their model is used to estimate the performance of the fixed income funds in our sample.[5] All of the bond indices used in their model are from Lehman Brothers and measure total return.

[5] Comer, Larrymore, Rodriguez (2007) report that hybrid fund performance results are virtually identical regardless of whether the sector or maturity version of the model is used. For the sake of brevity, we only use the maturity version in this study.

However, there are no widely accepted models designed to measure the performance of international and sector funds, which are also part of our sample.[6] For a category specific performance model for these funds, we create an alternative benchmark, which is the equally weighted average return of the five funds with the lowest expense ratios that share the same prospectus objective and Morningstar category of the fund and are not listed in any SmartMoney column during the year.[7] The benefit to such a benchmark is that it captures various types of active strategies employed by funds with similar investment objectives yet the funds are not considered to be superior performers according to SmartMoney's criteria. In addition, by selecting funds with the lowest expense ratios, we reduce the likelihood that abnormal performance estimates are strictly a function of fund fees. We will refer to this performance measure as the fund style benchmark.

In the next section, we use both approaches to measure the pre and post listing performance of our sample of funds.

III. Pre and Post Publication Performance

For each fund listed in the SmartMoney column, we create a daily return series as follows:

$$r_{p,d} = \frac{nav_{p,d} + div_{p,d}}{nav_{p,d-1}} - 1 \qquad (4)$$

[6] Only Tiwari and Vijh (2005) and Choi (2007) exclusively examine sector funds. But none of the methodologies used in these studies have become widely accepted as the appropriate model to examine sector fund performance. REIT mutual funds are a specific type of sector fund, and there are several studies that examine the performance of these funds (see Kallberg, Liu, and Trzcinka 2000; Hartzell, Muhlhofer, and Titman 2007). But the models used are specific to real estate investments. Glassman and Riddick (2006) examine the performance of global fund managers but focus more on their market timing ability.

[7] Our choice of five funds is motivated by the fact that for some of the fund themes, only five funds are available that share the same objective and category and are not published in another SmartMoney column.

where $nav_{p,d}$ is the net asset value of fund p on day d and $div_{p,d}$ ex div dividends of fund p on day d. The pre publication period begins one year prior to the day before the fund is listed in the column while the post listing period includes the day of publication and extends one year afterwards. As a specific example, if the fund is listed in the January 4, 2005 SmartMoney column, the pre publication period is defined as January 4, 2004 to January 3, 2005, while the post publication period covers January 4, 2005 to January 3, 2006.[8]

We use both of the methodologies described in the previous section to estimate abnormal returns for each fund during the pre and post publication period. Results using the single benchmark index model (equation 1) are presented in Panel A of Table 2, while results for the each category's specific performance model are presented in Panel B. We report the average alpha across all funds within each classification. The statistical significance of the average alpha is determined using a *t*-statistic based on the cross sectional standard deviation of all the funds in the corresponding sample. All reported alphas have been annualized. For all regressions, we correct for potential heteroskedasticity using the White correction.

The results indicate that the funds identified by the SmartMoney fund screen generate positive abnormal returns during the year before publication. Across both methodologies, the average alpha for each of the five fund classifications during the pre publication period is positive. According to the single benchmark index results, the average pre publication alpha is 3.99% across all funds and range from 0.68% to 7.83% for the fund classifications. All are statistically significant at the five percent level except for the fixed income category. At the individual fund level, 74.2% of the funds have positive pre publication alphas. The average alpha

[8] We include the actual publication in the post publication period because we want to capture any changes made by the manager in response to the listing in the post publication period. For example, a manager who is aware that the fund appears in the *WSJ* on January 4 may make trades on the 4th and these trades would be reflected in changes in the net asset value (and thus the return) of the fund on the 4th.

across all funds is lower for the category specific performance model (2.19%), but still remains positive for all five classifications with a range of 0.16% to 3.77%. Again, most of the alphas are significant at the five percent level with the hybrid fund classification the only exception. Similar results hold at the individual fund level as 63.5% of the funds have positive pre publication alphas. Across both performance models, the sector funds generate the greatest positive alphas (7.83% and 3.77% according to the single benchmark and category specific models, respectively) followed by the international equity (5.01% and 2.29%) and domestic equity funds (3.20% and 2.02%).

Post publication, there is a statistically significant decline in the overall abnormal returns generated by the funds. According to the single benchmark index model, average performance across the funds falls from 3.99% to 1.69% representing a 230 basis point decline. A similar result holds for the category specific model as performance falls by 257 basis points from 2.19% to -0.38%. Both of the declines are statistically significant at the five percent level. At the individual fund level, 62.0% of funds see their performance fall based on the single benchmark results while 37.3% of funds have a performance decline according to the category specific model results.

The decline in performance is consistent across the fund classifications. The most drastic reduction in performance occurs for the sector and domestic equity funds. According to the single benchmark results, sector fund performance declines by 420 basis points from 7.83% to 3.63% while domestic equity performance falls by 290 basis points from 3.20% to 0.30%. The results are even more dramatic when examining the category specific model results. The performance decline is larger in magnitude as sector fund performance drops by 477 basis points and domestic equity performances falls by 330 basis points. In addition, the average

performance of these two fund categories becomes negative (-1.00% for the sector funds and -1.28% for the domestic equity funds). These abnormal returns are statistically significant at the five percent level. Both performance models also indicate declines in the abnormal returns for both the international equity and fixed income classifications although the drop in performance is smaller in magnitude and has greater variation across the methodologies than seen for the sector and domestic equity funds. Only the hybrid fund classification demonstrates an increase in post publication performance.

As discussed in the previous section, domestic equity funds make up just less than half of the fund sample. To determine whether the performance decline is widespread across all types of equity funds, we partition our sample along the value, blend, and growth dimensions based on each fund's prospectus objective.[9] We report the pre and post publication performance results for this partition in Table 3. Results are consistent across the three categories. Across both performance models, the average pre publication alphas are positive, and all are significant except for the value category. Post publication, there is a substantial decline in estimated performance ranging from 173 to 374 basis points. The decline in performance is statistically significant across both models and all three equity fund types. The post publication decline is the greatest for the growth funds (-3.58% and -3.74% according to the single index and Carhart models respectively) while the value funds have the worst post publication performance as their estimated performance is negative and statistically significant (-1.28% and -1.37%).

We also previously mentioned that several funds are listed multiple times during the course of the year. To ensure that our results are not driven by these funds, we redo the above analysis but only count each fund once using its first listing during the year. After eliminating

[9] Some fund performance studies (see Chan, Chen, and Lakonishok (2002) for example) have found differential performance across equity funds that can be attributed to differences in fund style.

the multiple listings, we have 253 unique funds. Equity funds account for the greatest relative percentage of multiple listings. Where they represent 51% of the total listings, they only represent 45.5% of the unique fund listings. The relative distribution of the remaining four classifications is similar to their distribution in the full sample. In Table 4, we report the pre and post listing performance results for this reduced sample.

Across the board, the results are consistent with our previous findings. The average pre publication alpha across funds is positive, and the average alphas are positive for each classification ranging from 0.12% to 7.91%. Post publication, there continues to be a statistically significant decline in the overall abnormal returns generated by the funds. According to the single benchmark index model, performance falls by 180 basis points. A similar result holds for the category specific model as performance falls by 233 basis points. The decline in performance is greatest for the sector and domestic equity funds with average declines of at least 282 basis points depending on the performance model.[10]

Overall, the results suggest that the SmartMoney Fund Screen is able to identify funds that have superior performance in the past, but the funds are unlikely to maintain that level of performance once they have been published in *The Wall Street Journal*.

IV. Relationship between Cash Flows to Funds and Post Publication Performance

Edelen (1999) provides a potential explanation for the general decline in the post publication performance of the SmartMoney funds and specifically for the more drastic decline in the performance of the domestic equity and sector funds. Suppose that as a result of a fund

[10] Although not reported, we examine the pre and post publication performance of the funds with the most multiple listings. Three funds are listed six times during the year. Three funds are listed five times during the year. Seven funds are listed four times during the year. In general, the pre and post alphas are worse for these funds than for their category averages which can partially explain the slight improvement in the performance results reported in Table 4 relative to the results in Table 2.

being published in *The Wall Street Journal*, the manager receives a large cash inflow as individuals rush to invest in the fund. The manager is then forced to either engage in buying additional assets that do not perform as well as his pre publication portfolio or to increase the fund's cash exposure. Both choices could result in a significant decline in estimated performance relative to the benchmark, and Edelen (1999) documents such an effect for equity funds as he finds a negative relation between funds' abnormal returns and investor flows to the fund. If the domestic equity and sector funds are receiving larger cash flows than the other fund categories, their greater decline in performance could be attributed to this effect rather than to a lack of persistence in their performance. Although they do not examine this issue, Jain and Wu (2000) do document that advertised funds receive greater cash inflows than non advertised funds of comparable style and risk.

Thus, we want to test the relationship between cash flows and the post publication performance of our fund sample. For our first test, we specifically examine the relationship between the quarterly post publication cash flows to our funds and the one year post publication performance estimated in the previous section. We calculate both the total and percentage quarterly cash flows to each fund over a three month post publication period as follows:

$$tcf_{p,t+3} = tna_{p,t+3} - tna_{p,t}\left(1 + r_{p,t:t+3}\right) \tag{5}$$

$$pcf_{p,t+3} = \frac{tna_{p,t+3} - tna_{p,t}\left(1 + r_{p,t:t+3}\right)}{tna_{p,t}} \tag{6}$$

where *tcf* and *pcf* represent total and percentage cash flow to fund *p* respectively, *tna* represents total net assets, and *r* represents the holding period return of the fund over the three month interval. Given that our funds are published throughout the month in the *WSJ*, we can not get an exact measure of the cash flows for a three month period beginning with the date of publication

since only end of month total net asset data is available for these calculations. In the results reported below, our cash flow estimates cover the three month period including the month the fund is published. As a robustness check, we also measure cash flows over the three month period after the month of the fund listing, and we find that the results are virtually identical.

We sort our fund sample into deciles based on each cash flow variable and then calculate the average alpha across funds in each decile. Results are presented in Table 5 where we also calculate the rank correlation of the deciles and the performance measures. We report both the average alpha according to the single benchmark model and the category specific model.

The results provide evidence that there is substantial variation in cash flows to the funds during the post listing period as percentage cash flows range from -12.5% to 52.0% and total flows range from -1.45 million dollars to 949,840 dollars across the deciles. However, positive cash flows to funds during the first three months after publication are not the driving factor in the average decline in performance over the post publication year. The rank correlations for both the single benchmark index alpha and the category specific alpha range from 0.81 to 0.99 and are positive and significant at the five percent level indicating that a positive relationship exists between cash flows and performance. Across both cash flow measures, funds in deciles nine and ten, which represent funds that received the greatest cash inflows during the post listing quarter, have average positive alphas over the post publication year. In the case of the total cash flow measure, the funds that received the highest cash inflows generate the greatest alpha (3.71% for the single index model and 1.13% for the category specific model) across all of the deciles. Although not reported, we repeat the above tests for only the domestic equity funds, and the results are similar.

For our second test, we focus on the relationship between changes in the fund's cash exposure and post publication performance. Because many of the funds in our sample only report cash allocations twice a year, we turn to Sharpe's (1992) quadratic portfolio technique to estimate average cash exposure for each fund during a 63 day (one quarter) period before the fund was listed and a corresponding 63 day period after the fund was listed. Sharpe's methodology is designed to determine the average exposure of a portfolio to movement in the returns of various stock, bond, and cash indices. For each fund in our sample, we use the time series return over each 63 day period to solve the following quadratic program:

$$\begin{aligned} &\min \quad \left[\text{var}\left(tr_{p,d} - \left(b_{pb} tr_{b,d} + b_{pc} tr_{c,d} \right) \right) \right] \\ &\textit{subject to} \\ &\quad 0 \le b_{pb}, b_{pc} \le 1 \\ &\quad b_{pb} + b_{pc} = 1 \end{aligned} \tag{7}$$

where *tr* represents the total return as opposed to the excess return, $tr_{b,d}$ represents the total daily return to the fund's specific benchmark index, and $tr_{c,d}$ represents the daily total return to the Lehman Brothers Short Treasury Index which we use as our proxy for cash investments.[11] The coefficient on the cash index, b_{pc}, represents our estimate of the fund's cash exposure. We then define the change in exposure as the difference between the post listing and pre listing cash exposure estimates. Thus, a positive value indicates exposure increased during the post listing period.

Results are presented in Table 6. Our coefficient estimates indicate that a large portion of our fund sample does have exposure to cash as we find that 77.9% of the funds have a non zero cash exposure coefficient in either the pre or post publication period. When calculating changes in cash exposure, we do find variation across fund deciles ranging from -0.185 to 0.154. But

[11] Comer, Larrymore, and Rodriguez (2007) use this index to represent cash when applying Sharpe's method to hybrid fund returns.

similar to the cash flow results, we do not find any evidence that greater cash exposure is associated with poorer performance during the post listing year. The rank correlations are 0.17 for the single benchmark model alpha and -0.27 for the category specific alphas indicating a very weak relationship. A closer look at the results shows that the largest alphas are generated by the funds in the extreme deciles. For the single index model alpha, decile ten funds (greatest increase in cash exposure) generate the largest alphas (5.19%) while decile one funds (greatest decrease in cash exposure) also generate a large positive alpha (2.54%). In the case of the category specific alphas, decile one has the greatest post listing alphas (1.40%) while decile ten has the second largest (1.36%). Across both performance models, the worst performing funds are in the two deciles composed of funds with no change in their cash exposure. In the case of the single index model, these funds represent the only decile with a negative alpha (-1.47%). Thus, our tests suggest that neither cash flows to funds nor the cash exposure of funds are driving the general decline in performance during the post publication period.

V. Relationship between Post Publication Risk and Post Publication Performance

A second explanation we examine is whether performance changes are related to shifts in the benchmark risk levels chosen by the managers during the post publication period. The interest in this issue is motivated by work in the mutual fund tournament literature (see Brown, Harlow, and Starks 1996; Chevalier and Ellison 1997; Busse 2001; and Elton, Gruber, Krasny, and Ozelge 2007). Studies suggest that equity fund managers shift the risk of the portfolio based on their performance during a previous period (i.e., whether or not they won the tournament),

although studies have yet to reach a consensus on the theoretical or empirical relationship between fund performance and future changes in risk levels.[12]

Such risk shifting potentially could explain the performance decline. Mamaysky, Speigel, and Zhang (2007) examine the relationship between equity fund alphas and betas estimated from both the CAPM and Carhart models. After sorting funds each month into deciles based on estimated alphas, they detect strong systematic patterns in betas as there is a nearly perfect negative correlation between the two parameters. If similar results hold for our performance models and a greater number of funds increase than decrease their risk during the post publication period, we can attribute the performance decline to changes in risk levels.

Thus, we think of the SmartMoney fund publication list as a tournament that mutual fund managers would like to win given that being listed is likely to result in greater cash flow to the fund and greater compensation to the manager of the fund. The issue we focus on is how funds respond to making the list in terms of changes made to benchmark risk levels. Given that the estimated performance decline is similar in magnitude across both the single index model and the category specific models, all of our tests that follow will focus on results from the single index model given that the definition of risk is consistent across all five fund classifications.

To examine risk shifting behavior, we modify equation (1) to include dummy variables as follows:

$$r_{p,d} = \alpha_p + b_p r_{b,d} + d_1 + b_{post} d_1 r_{b,d} + e_{p,d} \tag{8}$$

[12] Brown et al. (1996) present evidence that poorly performing funds will increase their risk while better performing funds will decrease risk. Chevalier and Ellison (1997) indicate that the best performing funds will increase risk while the worst performing will decrease risk. Busse (2001) suggests that no tournament behavior exists as most of a fund's year end risk can be explained in the volatility of common risk factors. Elton et. al (2007) are the first to use monthly fund holdings data, and they find that high return funds increase risk while low return funds decrease risk regardless of whether risk is measured by changes in asset composition, changes in beta, or changes in standard deviation.

where d_1 takes the value of zero during a fund's one year pre publication period and the value of one during the post publication period. The coefficient b_{post} represents the change in the benchmark risk level during the post publication period. We estimate equation (8) for each fund in our sample and report results in Table 7. In the table, we report the sum of the coefficients b_p and b_{post} which represents total benchmark risk levels during the post publication period.

On average, across all funds, there appears to be an increase in benchmark risk levels as the average post publication risk level increases from 0.912 to 0.947. The average increase in risk is consistent across all five fund classifications with the fixed income funds having the largest average increase from 0.879 to 0.940. Of greater interest is the percentage of funds with statistically significant changes to risk levels. We find that the majority of funds (59.6%) do not significantly change their risk levels. But of the 41.4% that do change risk, funds are more than twice as likely to increase (28.5%) than decrease (12.9%) risk. Only sector funds have a greater percentage of funds that have a significant decrease rather than increase in risk.

Based on these results, we examine whether there are relationships between the magnitude and the statistical significance of the change in risk and estimated post publication performance. For our first test, we sort funds into deciles based on the value of b_{post} estimated from equation (8). Then, we calculate the average post publication alpha across all funds in each decile.

We report the results in Panel A of Table 8. We find a strong inverse relationship between the post publication change in risk level and the post publication alpha. The Spearman rank correlation coefficient is -0.855 which is significant at the five percent level. Decile 1 which contains the funds that have the largest decrease in risk during the post publication period is the only decile with a positive post publication alpha of 3.14%. Deciles 9 and 10 represent

funds with the largest increase in risk, and these two deciles have the worst alphas of -6.25% and -8.95% respectively.

Instead of focusing on the magnitude of the estimated change in risk, we conduct a second test where we sort funds into groups based on the statistical significance of the coefficient b_{post} estimated from equation (8). Our first group includes funds whose change in risk is positive and statistically significant. The second group is composed of funds whose coefficient is negative and statistically significant. All other funds are included in a third group representing no statistically significant change to risk. We then calculate the average change in post publication alpha from the pre to the post publication period across all funds in each category.

We report the results for this partition in Panel B of Table 8. Again, we find a strong inverse relationship between changes in risk and changes in alpha. The 111 funds with significant positive increases to their benchmark risk see an average decline in their alpha of -5.72% during the post publication period. For the 50 funds with significant negative decreases to their risk, their post publication alphas increase by 2.11%.

Taken together, these results clearly provide a partial explanation for the decline in post publication performance that we observe across our fund sample. In addition, if funds consistently engage in increasing risk levels after periods of successful performance, as suggested by both Chevalier and Ellison (1997) and Elton et al. (2007), our results suggest a possible explanation for why it is so difficult to detect positive long term persistence in mutual fund performance.

VI. Conclusion

In this study, we examine the performance of the 389 mutual funds published in *The Wall Street Journal's* "SmartMoney Fund Screen" column during 2005. Previous studies have established that *The Wall Street Journal* is a highly influential source for financial information. In addition, several academic papers have established that media coverage and advertising heavily influence investors' choices of mutual funds in which to invest. Given the likely impact of such a column, the issue we focus on in this study is the value to investors of the mutual fund recommendations provided in the weekly column.

The focus of this study is on the pre and post listing performance of the recommended funds. Specifically, our study examines whether the recommended funds exhibit superior risk adjusted performance before being published in the *WSJ* and whether the funds are able to generate positive alphas after being listed. Our study is unique along two dimensions. First, instead of focusing on one specific fund group or type, our fund sample includes all types of mutual funds (US equity, international equity, US sector, fixed income, and hybrid). Secondly, our study uses daily fund returns and daily benchmark factor returns to measure performance. To the best of our knowledge, no study has used daily returns when focusing on international, sector, or fixed income funds.

Across models and fund types, we find that on average the listed funds generate positive alphas during the year before publication. Post publication, there is an over 230 to 257 basis point decline in the average performance of the funds depending on the performance model used. Across fund types, the most drastic decline is observed for the domestic equity and sector funds where post publication performance drops by over 300 basis points, and according to one of the models employed, the average post publication performance becomes significantly negative.

We then examine two potential explanations for the decline in performance. First, we examine the impact that large cash flows to the fund immediately after publication have on performance. However, we find no evidence that post publication cash flows or levels influence post publication performance. Second, we examine the relationship between changes in benchmark risk levels and estimated post publication performance. We find that the majority of funds do not alter their benchmark risk levels, but those that do are much more likely to increase than decrease risk. Most importantly, those that do increase risk demonstrate an over 570 basis point drop in performance during the post publication period which provides a partial explanation for our results.

Overall, the results emphasize the difficulty in identifying mutual funds that are likely to provide superior performance in the future. The SmartMoney Fund Screen is effective at identifying funds that have superior past performance, but the same level performance is unlikely to persist during the period after publication.

Appendix A: List of the SmartMoney Article Dates and Titles during 2005

Below is a list of the 45 SmartMoney articles that appeared in *The Wall Street Journal* during the 2005 calendar year. The sample of 389 funds analyzed in this study is obtained from these articles.

01/04/2005 SmartMoney Fund Screen / Best Funds of 2004
01/11/2005 SmartMoney Fund Screen / International Funds
01/18/2005 SmartMoney Fund Screen / TIPS Funds
01/25/2005 SmartMoney Fund Screen / Equity-Income Funds
02/01/2005 SmartMoney Fund Screen / Low-Minimum Funds
02/08/2005 SmartMoney Fund Screen / Multicap Funds
02/15/2005 SmartMoney Fund Screen / Emerging-Markets Funds
03/08/2005 SmartMoney Fund Screen / Real-Estate Funds
03/15/2005 SmartMoney Fund Screen / Steady Performers
03/22/2005 SmartMoney Fund Screen / Natural-Resources Funds
03/29/2005 SmartMoney Fund Screen / Large-Cap Stocks
04/12/2005 SmartMoney Fund Screen / Longtime Managers
04/19/2005 SmartMoney Fund Screen / New Funds
04/26/2005 SmartMoney Fund Screen / Low-Expense Funds
05/03/2005 SmartMoney Fund Screen / Science & Technology Funds
05/10/2005 SmartMoney Fund Screen / Small Mutual Funds
05/17/2005 SmartMoney Fund Screen / Socially Responsible Funds
05/24/2005 SmartMoney Fund Screen / Midcap Funds
05/31/2005 SmartMoney Fund Screen / Balanced Funds
06/14/2005 SmartMoney Fund Screen / Latin Funds
06/21/2005 SmartMoney Fund Screen / High-Minimum Funds
06/28/2005 SmartMoney Fund Screen / Funds For Retirees
07/05/2005 SmartMoney Fund Screen / Top Performers Year-to-Date
07/19/2005 SmartMoney Fund Screen / Health & Biotechnology
07/26/2005 SmartMoney Fund Screen / Flexible-Portfolio Funds
08/02/2005 SmartMoney Fund Screen / Index Funds
08/16/2005 SmartMoney Fund Screen / Fidelity Investments Funds
08/23/2005 SmartMoney Fund Screen / Global Funds
08/30/2005 SmartMoney Fund Screen / Low-Minimum Investments
09/06/2005 SmartMoney Fund Screen / Equity-Income Funds
09/13/2005 SmartMoney Fund Screen / Multicap Funds
09/20/2005 SmartMoney Fund Screen / Emerging-Markets Funds
09/27/2005 SmartMoney Fund Screen / Large Mutual Funds
10/04/2005 SmartMoney Fund Screen / Foundation Funds
10/11/2005 SmartMoney Fund Screen / Real-Estate Funds
10/18/2005 SmartMoney Fund Screen / T. Rowe Price Funds
10/25/2005 SmartMoney Fund Screen / International Funds
11/01/2005 SmartMoney Fund Screen / Funds for IRAs
11/08/2005 SmartMoney Fund Screen / Core Funds
11/15/2005 SmartMoney Fund Screen / Low Volatility

11/22/2005 SmartMoney Fund Screen / Large-Cap Growth Funds
11/29/2005 SmartMoney Fund Screen / Funds to Be Thankful For
12/06/2005 SmartMoney Fund Screen / Science & Technology
12/13/2005 SmartMoney Fund Screen / Midcap Funds
12/27/2005 SmartMoney Fund Screen / Young Funds

Appendix B – List of Daily Return Benchmark Indices

Below is the list of the daily return indices used as fund specific benchmarks in the single benchmark index model (equation 1 in the text). Note that no indices are listed for the hybrid fund category because hybrid fund benchmarks are a combination of one of the domestic equity fund indices and one of the fixed income fund indices.

Domestic Equity Funds
Russell 1000
Russell 1000 Growth
Russell 1000 Value
Russell 2000
Russell 2000 Growth
Russell 2000 Value
Russell Midcap
Russell Midcap Growth
Russell Midcap Value

International Equity Funds
MSCI Canada
MSCI EAFE
MSCI EM
MSCI EM Europe
MSCI EM Europe Middle East
MSCI EM Latin America
MSCI Europe
MSCI Far East
MSCI World
MSCI World ex US
MSCI World Free
MSCI World Growth
MSCI World Value

Sector Funds
S&P Supercomposite Energy
S&P Supercomposite Health Care
S&P Supercomposite Industrials
S&P Supercomposite Information Technology
S&P Supercomposite Materials
S&P Supercomposite Real Estate
S&P Supercomposite Telecommunications
S&P Supercomposite Utilities

Fixed Income Funds
Lehman 1-3 Year Government
Lehman Aggregate

Lehman Global Aggregate
Lehman Global Emerging Markets
Lehman Intermediate Treasury
Lehman Long Term Government
Lehman Long Term Treasury
Lehman TIPS

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Table 1
Descriptive Statistics of SmartMoney Fund Sample

The table presents descriptive statistics for the SmartMoney fund sample. The sample is composed of 389 funds listed in *The Wall Street Journal* SmartMoney articles during 2005. Each fund listed is placed into one of the five fund types (domestic equity, international equity, sector, hybrid, or fixed income) based on the fund objective published in the fund's prospectus. All values are based on annual year end 2004 values from CRSP. We report mean values in the table with median values in parentheses. Fund age in years represents the age of the fund as of December 31, 2004.

Type of Fund	No. of Listings	Fund Age in years	Total Net Assets in millions	Expense Ratio
Domestic Equity	198	18.9 (12.0)	8045.4 (1985.2)	0.95 (0.98)
International Equity	68	11.1 (9.8)	2088.6 (641.6)	1.22 (1.25)
Sector	66	10.4 (8.4)	713.5 (357.2)	1.28 (1.17)
Hybrid	33	28.7 (18.2)	6742.2 (336.2)	0.72 (0.78)
Fixed Income	24	10.1 (10.0)	1196.8 (393.2)	0.73 (0.71)
All	389	16.4 (11.3)	5268.9 (720.4)	1.02 (1.00)

Table 2
Pre and Post Publication Performance

The table reports the cross section of performance results as measured by alpha for the sample of SmartMoney funds. For each fund in the sample, we use daily return data to estimate an alpha over a one year period before the fund was listed in the SmartMoney article (pre alpha) and over a one year period after the fund was published (post alpha). In Panel A, we use a single benchmark index model to estimate alpha. For this model, we use a benchmark index from our family of indices listed in Appendix B which is most closely matched with the fund's style classification from its prospectus. In Panel B, we use a specific model for each category of funds. For equity funds, we use the Carhart model. For hybrid and bond funds, we use the Comer, Larrymore, Rodriguez model. For international equity and sector funds, we use a fund style benchmark. The fund style benchmark model is composed of a single benchmark which represents the equal weighted average return of the five funds with the lowest expense ratios that share the same prospectus objective and Morningstar category of the fund. For both models, alpha is represented by the value of the intercept of the regressions, and all alphas in the table have been annualized. The reported alphas are the average alpha across all funds within each classification and the statistical significance of the average alpha is determined using a t-statistic based on the cross sectional standard deviation of all the funds in the corresponding sample. * represents statistical significance at the five percent level.

Panel A: Single Benchmark Index Model					
Type of Fund	**No. of Funds**	**Pre alpha**	**Post alpha**	**Difference Post - Pre**	
Domestic Equity	198	3.20*	0.30	-2.90*	
International Equity	68	5.01*	3.71*	-1.30*	
Sector	66	7.83*	3.63*	-4.20*	
Hybrid	33	1.29*	3.08*	1.79*	
Fixed Income	24	0.68	0.21	-0.47	
All funds	389	3.99*	1.69*	-2.30*	
Panel B: Category Specific Performance Model					
Type of Fund	**No. of Funds**	**Pre alpha**	**Post alpha**	**Difference Post - Pre**	**Model**
Domestic Equity	198	2.02*	-1.28*	-3.30*	Carhart
International Equity	68	2.29*	2.08*	-0.21	Fund Style Benchmark
Sector	66	3.77*	-1.00*	-4.77*	Fund Style Benchmark
Hybrid	33	0.16	0.65	0.49	CLR
Fixed Income	24	2.28*	0.41	-1.87*	CLR bond indices
All funds	389	2.19*	-0.38	-2.57*	

Table 3
Analysis of Domestic Equity Fund Pre and Post Publication Performance

The table reports the cross section of performance results as measured by alpha for the domestic equity funds included in the sample of SmartMoney funds. Based on the fund's prospectus objective, we classify each domestic equity fund as a value, growth or blend fund. For each fund in the sample, we use daily return data to estimate an alpha over a one year period before the fund was listed in the SmartMoney article (pre alpha) and over a one year period after the fund was published (post alpha). Results in column 3 and 4 are based on a single benchmark index model to estimate alpha. For this model, we use a benchmark index from our family of indices listed in Appendix B which is most closely matched with the fund's style classification from its prospectus. Results in column 5 and 6 are based on the Carhart model. For both models, alpha is represented by the value of the intercept of the regressions, and all alphas in the table have been annualized. The reported alphas are the average alpha across all funds within each classification and the statistical significance of the average alpha is determined using a t-statistic based on the cross sectional standard deviation of all the funds in the corresponding sample. * represents statistical significance at the five percent level.

		Single Index Benchmark			**Carhart Model**		
Category	**No. of Funds**	**Pre alpha**	**Post alpha**	**Difference Post – Pre**	**Pre alpha**	**Post alpha**	**Difference Post - Pre**
Value	41	0.45	-1.28*	-1.73*	0.68	-1.37*	-2.05*
Growth	69	5.93*	2.35*	-3.58*	3.11*	-0.63*	-3.74*
Blend	88	2.36*	-0.57	-2.93*	1.78*	-1.75*	-3.53*
All	198	3.20*	0.30	-2.90*	2.02*	-1.28*	-3.30*

Table 4
Pre and Post Publication Performance Based on Unique Fund Listings

The table reports the cross section of performance results as measured by alpha for the sample of SmartMoney funds using only a fund's first appearance in the SmartMoney article (i.e., we exclude multiple listings of the same fund). For each fund in the sample, we use daily return data to estimate an alpha over a one year period before the fund was listed in the SmartMoney article (pre alpha) and over a one year period after the fund was published (post alpha). In Panel A, we use a single benchmark index model to estimate alpha. For this model, we use a benchmark index from our family of indices listed in Appendix B, which is most closely matched with the fund's style classification from its prospectus. In Panel B, we use a specific model for each category of funds. For equity funds (Carhart model) and hybrid and bond funds (Comer, Larrymore, Rodriguez model), we use the most widely accepted performance model for the fund category. For international equity and sector funds, we use a fund style benchmark. The fund style benchmark model is composed of a single benchmark which represents the equal weighted average return of the five funds with the lowest expense ratios that share the same prospectus objective and Morningstar category of the fund. For both models, alpha is represented by the value of the intercept of the regressions, and all alphas in the table have been annualized. The reported alphas are the average alpha across all funds within each classification and the statistical significance of the average alpha is determined using a t-statistic based on the cross sectional standard deviation of all the funds in the corresponding sample. * represents statistical significance at the five percent level.

Panel A: Single Benchmark Index Model					
Type of Fund	**Unique Funds**	**Pre alpha**	**Post alpha**	**Difference Post - Pre**	
Domestic Equity	115	3.28*	0.46	-2.82*	
International Equity	46	4.85*	4.10*	-0.75*	
Sector	47	7.91*	4.87*	-3.04*	
Hybrid	24	1.21*	3.38*	2.17*	
Fixed Income	21	0.43	0.16	-0.27	
All funds	253	4.01*	2.21*	-1.80*	
Panel B: Category Specific Performance Model					
Type of Fund	**No. of Funds**	**Pre alpha**	**Post alpha**	**Difference Post - Pre**	**Model**
Domestic Equity	115	2.48*	-1.03*	-3.51*	Carhart
International Equity	46	2.78*	2.12*	-0.66*	Fund Style Benchmark
Sector	47	3.66*	-0.59	-4.25*	Fund Style Benchmark
Hybrid	24	0.12	0.85*	0.73*	CLR
Fixed Income	21	2.19*	0.37	-1.82*	CLR bond indices
All funds	253	2.37*	0.04	-2.33*	

Table 5
Relationship between Post Publication Cash Flows and Post Publication Performance

The table shows the average one year post publication performance of the fund sample where deciles were formed based on the cash flows to the funds during the three month period after the fund was listed in *The Wall Street Journal.* In Panel A, the deciles are based on percentage cash flows while in Panel B the deciles are based on total cash flows in thousands of dollars. Total cash flows are defined as the change in total net asset value minus the appreciation of fund assets while percentage cash flows represent total cash flow divided by the total net assets of the fund at the beginning of the period. We report both the alpha from the single index model and the alpha from the category specific performance model. * denotes statistical significance at the five percent level for the Spearman rank coefficient.

Panel A – Percentage Cash Flows			
Decile	**Percentage Flows**	**Alpha from Single Benchmark Index Model**	**Alpha from Category Specific Model**
1 (lowest cash flows)	-0.125	0.55	-0.97
2	-0.033	0.16	-1.60
3	-0.007	-0.48	-1.59
4	0.009	-0.75	-2.10
5	0.024	2.56	0.29
6	0.045	1.77	-0.50
7	0.071	3.08	0.74
8	0.109	2.63	-0.26
9	0.181	4.53	1.94
10 (highest cash flows)	0.520	2.66	0.13
Spearman Rank Coefficient		0.806*	0.721*
Panel B – Total Cash Flows			
Decile	**Total Flows (Thousand dollars)**	**Alpha from Single Benchmark Index Model**	**Alpha from Category Specific Model**
1 (lowest cash flows)	-1454.49	-0.36	-1.68
2	-48.95	0.84	-0.84
3	-3.73	-0.03	-1.36
4	3.89	0.88	-1.18
5	12.71	1.96	0.59
6	33.60	2.01	-1.34
7	70.80	2.45	-0.54
8	139.82	2.61	0.67
9	272.52	2.64	0.61
10 (highest cash flows)	949.84	3.71	1.13
Spearman Rank Coefficient		0.988*	0.842*

Table 6
Relationship between Fund Cash Exposure and Post Publication Performance

The table shows the average post publication performance of the fund sample where deciles were formed based on the difference in estimated cash exposure of funds from the 63 day period prior to listing to the 63 day period after the listing. For both the pre and the post listing period, cash exposure is estimated using Sharpe's quadratic portfolio technique. For each fund, we regress the fund return against the fund benchmark return and the return on the Lehman Brothers short Treasury index. In the estimation, the coefficients on the benchmark and cash indices are constrained to be between zero and one and the sum of the two coefficients must equal one. The coefficient on the cash index represents the fund's estimated cash exposure. The change in cash exposure is defined such that a positive value indicates exposure increased during the post listing period. We report both the alpha from the single index model and the alpha from the category specific performance model.

Decile	Change in Cash Exposure	Alpha from Single Benchmark Index Model	Alpha from Category Specific Model
1	-0.185	2.54	1.40
2	-0.066	2.26	1.09
3	-0.036	3.07	0.13
4	-0.010	1.65	-0.36
5 and 6	0.000	-1.47	-3.21
7	0.011	0.81	-0.48
8	0.035	3.16	0.59
9	0.062	1.88	-0.37
10	0.154	5.19	1.36
Spearman Rank Coefficient		0.167	-0.267

Table 7
Pre and Post Publication Benchmark Risk Levels

The table reports the cross section of benchmark risk levels by fund type for the sample of SmartMoney funds. For each fund in the sample, we use daily return data to estimate risk which is defined as the coefficient on the benchmark index from the single benchmark index model. For each fund, the benchmark index used in the single benchmark index model is the benchmark index from our family of indices listed in Appendix B which is most closely matched with the fund's style classification from its prospectus. The reported risk levels are the average risk levels across all funds within each classification. In the single index model, we define a dummy variable which equals 0 for the year prior to the fund being listed in the SmartMoney column and equals 1 over a one year post listing window. Statistically significant changes in the risk measure are based on the statistical significance of the dummy variable.

Type of Fund	Avg. Pre Listing Benchmark Risk	Avg. Post Listing Benchmark Risk	% Significant Positive Change	% Significant Negative Change
Domestic Equity	0.907	0.947	35.8%	14.7%
International Equity	0.888	0.925	21.4%	7.1%
Sector	0.947	0.958	11.9%	17.9%
Hybrid	0.942	0.984	30.3%	3.0%
Fixed Income	0.879	0.940	20.0%	8.0%
All Funds	0.912	0.947	28.5%	12.9%

Table 8
Relationship between Changes in Risk and Post Publication Performance

The table reports the relationship between changes in benchmark risk levels during the post listing period and the post listing alpha of the funds. For each fund in the sample, we use daily return data to estimate risk which is defined as the coefficient on the benchmark index from the single benchmark index model. We include dummy variables in the model to measure changes in risk during the post listing period. In Panel A of the table, we form deciles based on the difference between the post publication and pre publication risk levels of the funds. Then we calculate the average post listing alpha across all funds in each decile. In Panel B, we sort funds into one of the following three categories based on the statistical significance of the difference between the post publication and pre publication risk levels of the funds: 1) a positive and significant increase in risk, 2) a negative and significant increase in risk, and 3) no statistically significant change in risk. Then, across all funds in each category, we calculate the average change in benchmark risk and the average change in alpha for the pre to the post period. Statistically significant changes reflect the five percent level of significance.

Panel A – Sorted By Magnitude of Change in Risk		
Decile	**Post Publication Change In Benchmark Risk**	**Post Publication Alpha**
1	-0.113	3.14
2	-0.055	-0.58
3	-0.024	-0.23
4	-0.007	-2.61
5	0.008	-1.81
6	0.029	-0.89
7	0.056	-1.91
8	0.087	-2.05
9	0.128	-6.25
10	0.245	-8.95
Spearman Rank Coefficient		-0.855*

Panel B – Sorted By Statistical Significance of Change in Risk			
Post Publication Change in Risk	**No. of Funds**	**Change in Benchmark Risk**	**Change in Alpha from Pre to Post**
Positive and Significant	111	0.150	-5.72
Negative and Significant	50	-0.085	2.11
Not Statistically Significant	228	0.005	-1.43