Mutual Fund Shareholder Letter Tone - Do Investors Listen?

Alexander Hillert, Alexandra Niessen-Ruenzi, and Stefan Ruenzi*

April 2014

Abstract

This paper investigates whether shareholder letters have an impact on mutual fund flows. Based on a large sample of US open-end equity funds from 2006 to 2012, we find that fund flows are significantly related to the tone of the fund's shareholder letter; a more negative tone leads to lower fund inflows. We do not find any predictive power of shareholder letter tone for future fund performance, but a more negative tone of a letter predicts less subsequent idiosyncratic risk taking. We interpret our results as evidence for shareholder letters creating investor sentiment.

JEL-Classification Codes: G23, G11

Keywords: Mutual Funds, Flows, Textual Analysis, Shareholder Letters, Form N-CSR

*All authors are at the University of Mannheim, L9, 1-2, 68131 Mannheim, hillert@bwl.uni-mannheim.de; niessen@bwl.uni-mannheim.de; ruenzi@bwl.uni-mannheim.de. All errors are our own.

Mutual Fund Shareholder Letter Tone - Do Investors Listen?

February 2014

Abstract

This paper investigates whether shareholder letters have an impact on mutual fund flows. Based on a large sample of US open-end equity funds from 2006 to 2012, we find that fund flows are significantly related to the tone of the fund's shareholder letter; a more negative tone leads to lower fund inflows. We do not find any predictive power of shareholder letter tone for future fund performance, but a more negative tone of a letter predicts less subsequent idiosyncratic risk taking. We interpret our results as evidence for shareholder letters creating investor sentiment.

JEL-Classification Codes: G23, G11

Keywords: Mutual Funds, Flows, Textual Analysis, Shareholder Letters, Form N-CSR

1 Introduction

Shareholder letters are part of the semi-annual shareholder reports (N-CSR and N-CSRS) that registered management investment companies file with the SEC. In these reports, fund managers discuss individual stocks that their fund owns and how these stocks performed. They also offer explanations for why certain stocks have been bought, sold or not been considered at all and comment on various other issues they consider as relevant. The writing styles of these letters vary strongly from very technical to almost literary pieces.[1]

In spite of the recent trend in the finance literature to investigate the impact of soft information on financial markets based on textual analysis (see, e.g., Tetlock (2007), Tetlock, Saar-Tsechansky, and Macskassy (2008), Loughran and McDonald (2011)), shareholder letters of mutual fund managers have not caught any attention in academic studies so far.[2] This is surprising, given that these letters are sent out regularly to a large number of investors and are regularly quoted in the business press.[3] It is thus not unlikely that their tone has an impact on investment decisions and capital flows.

The mutual fund industry offers an ideal setting to analyze whether and how investors react upon narrative in financial disclosures. Different from other settings where the impact of soft information on investment decision making has been analyzed, we can directly observe the reaction of investors, because money flows in mutual funds are explicitly observable. In contrast, existing studies only indirectly observe investors' reaction to soft information by investigating price changes on capital markets.

[1] For example, Wintergreen advisers' shareholder letters are written by a co-founder with a minor in English language to obtain a letter full of "inspirational quotes", see http://online.barrons.com/article/SB50001424053111904009804579248280874966654.html

[2] A possible reason for this negligence in the literature might be that researchers assume that such disclosure texts might contain little additional information besides the quantitative information typically also contained in the report and that they believe that these shareholder letters are standard ready-made texts that barely differ across filers. However, we find that there is quite some dispersion in the style and kind of issues discussed in shareholder letters.

[3] In 2005, Morningstar even offered a list of great shareholder letters to its readers, calling Warren Buffett's annual letters to Berkshire Hathaway shareholders an "investment classic".

In this paper we use computer linguistic tools to investigate the tone of shareholder letters, its determinants and its impact on mutual fund flows as well as its predictive power regarding future performance and fund manager behavior. Our sample comprises all US open end equity funds between 2006 and 2012 that publish a shareholder letter. We find that mutual fund investors do not ignore shareholder letters but strongly react to their tone. Flows are significantly lower the more negative a shareholder letter is written. This effect is observed immediately following the publication of a shareholder letter and lasts for about 10 days. It is persistent and does not reverse over the long run.

We then examine whether it is rational for investors to react upon the tone of shareholder letters by analyzing its impact on subsequent performance. We find that shareholder letters do not have predictive power for future fund performance. If anything, some specifications suggest a slight improvement in fund performance after a negative shareholder letter. This hints at shareholder letters creating investor sentiment rather than containing information about the actual future financial development of the fund.

Finally, we also analyze whether tone has predictive power for the risk-taking behavior of fund managers. Arguing that negative tone is associated with a generally more negative attitude of a fund manager with respect to the future development of the stock market, one might expect that negative tone is a proxy for stronger risk aversion and eventually lower risk taking of fund managers. We indeed find that a negative tone predicts less risk taking of a fund manager. The effect is exclusively driven by lower idiosyncratic risk, indicating that fund managers dare less to deviate from benchmarks if the shareholder letter's tone was negative.

Our results have important implications for mutual fund companies. They underline the importance of verbal information that fund companies provide to their investors. Investors seem to be very sensitive to the wording of shareholder letters and react strongly upon the way in which a shareholder letter is written. Given that these letters are regulated to portray a fair and truthful picture of the current economic situation of a fund, fund companies are

restricted in the way they write shareholder letters. This explains why not all shareholder letters are written in an optimistic and positive tone. However, it might pay off to fund companies to devote much time to a careful creation of these letters, particularly in times of lower fund returns, to prevent fund investors from withdrawing their money. A recent Barron's article on shareholder letters supports this view, arguing that "How managers explain their duds may be more telling than how they boast about their wins."[4]

Our paper contributes to the large literature on the determinants of mutual fund inflows. Papers on the determinants of fund flows first investigated the impact of past performance (e.g., Sirri and Tufano (1998), among many others). Ivkovic and Weisbenner (2009) find that investors (irrationally) chase funds that outperformed in the past although there barely is any skill induced performance persistence of funds in the long-term (Carhart (1997)). Other determinants of mutual fund flows that have been investigated in the literature comprise fund expenses (Barber, Odean, and Zheng (2005)), advertising of a fund (Jain and Wu (2000)), a fund's media coverage (Kaniel, Starks, and Vasudevan (2007)), and fund manager characteristics (Wermers (2003), and Niessen-Ruenzi and Ruenzi (2013)). We contribute to this literature by showing for the first time that shareholder letters have a significant impact on mutual fund flows as well.

We also contribute to the small literature trying to predict managerial behavior. Looking at managers of publicly traded firms, Loughran and McDonald (2013b) find that readability of 10-K files is significantly related to earnings forecast errors. The authors argue that managers who try to obscure earnings-relevant information will use a different writing style than managers who have nothing to hide. Regarding mutual fund managers, we are not aware of any study that examines the predictive power of narrative statements by fund managers on future behavior as we do. There are a few studies that try to predict behavior based on personal characteristics. For example, the impact of age on investment behavior is examined in Greenwood and Nagel (2009), while Niessen-Ruenzi and Ruenzi (2013) focus on the impact of gender. We extend this literature by showing that the tone of shareholder letters

[4]see http://online.barrons.com/article/.

is informative about the future behavior of fund managers and should thus be carefully taken into consideration by potential investors.

In addition, our paper contributes to the recently burgeoning literature on textual analysis in finance. There are several papers showing that investors react to soft information in texts. However, the interpretation of this reaction differs largely across papers. For example, Tetlock, Saar-Tsechansky, and Macskassy (2008) find that investors react to the fraction of negative words in firm specific news reports. They interpret this reaction as rational given that linguistic media content in these news stories predicts the firm's earnings. Tetlock (2007) also finds that investors react to high media pessimism which eventually leads to downward pressure on market prices. However, the author observes a reversion to fundamentals later on and thus interprets investors' reaction as being driven by (irrational) sentiment. A similar result is observed by Tetlock (2011) who shows that particularly individual investors trade on stale news which leads to subsequent return reversals. Our paper contributes to this discussion by showing that qualitative information is also taken into account by investors in the mutual fund industry. Since we do not find any predictive power of this information for future fund performance, our results rather support the view that negative shareholder letters influence sentiment among mutual fund investors. Besides the language of news reports, several papers also examine the tone of other firm-related texts (see, e.g., Kothari, Li, and Short (2009)). For example, Breton and Taffler (2001) analyze the text content of sell-side security analysts. Huang, Zang, and Zheng (2013) use textual analysis to extract opinion from the text of analyst reports and find that investors react to the tone of analyst statements.

However, there is only limited evidence on investor reactions to qualitative information in official filings. Notable exceptions are Loughran and McDonald (2011), who look at 10-K filings, which are the official filings containing the annual report, Loughran and McDonald (2013a) who analyze the language in form S-1 disclosures and their impact on IPO first-day returns, offer-price revisions, and volatility, and Loughran and McDonald (2013b) who

suggest a new measure for the complexity of 10-K filings. However, there are no studies investigating the shareholder letters which are part of the N-CSR filings. This is surprising, given that more than 40% of all households in the US own mutual funds (ICI, 2013) and that they have easy access to shareholder letters which are sent directly to many fund shareholders on a regular basis.

This paper is organized as follows. Our data sets, the tone measurement methodology and summary statistics of our main variables are presented in Section 2. In Section 3 we examine various determinants of the tone of shareholder letters. The impact of shareholder letters on mutual fund flows is investigated in Section 4. In Section 5, we investigate whether shareholder letters have predictive power for future fund returns and whether fund managers behave differently conditional on the tone of a published shareholder letter. Section 6 concludes.

2 Data and summary statistics

2.1 Shareholder letters

We obtain mutual funds' shareholder letters from their N-CSR annual and semi-annual filings that are available from the SEC's Edgar database. According to section 30(e) of the Investment Company Act of 1940, every registered investment company has to transmit financial reports to its stockholders at least semiannually. These reports include information on portfolio composition, a statement of income and a balance sheet. Most importantly in our context, they usually start with a letter from the fund manager to the shareholders. In this letter, the fund manager has a lot of freedom regarding the content. For example, she can discuss the fund's performance relative to a benchmark, give reasons why the fund outperformed or underperformed, describe economic and market conditions, highlight some securities of the portfolio (e.g. winners, losers, exposure to industries), or advertise the fund. Inclusion of such a letter, classified as "narrative disclosure" by the SEC, is voluntary

but must not contain any untrue statement and has to be certified by the mutual fund's principal executive and financial officers.[5] We find that about 90% of mutual fund N-CSR filings contain a shareholder letter.

Since shareholder letters are not mandatory, there is no clear-cut section or item of the form N-CSR filing which we can extract for our empirical analysis. Therefore, we identify common phrases for the beginning and the ending of the letter to isolate it from the fund's financial report.[6] If no phrase for the end (beginning) of the letter is found, we use the beginning (end) of the subsequent (previous) section as the cut-off. We extract the text of these letters automatically with a computer program and verify the precision of the letter extraction procedure by conducting manual checks.

The N-CSR filings are available since 2003 but investment companies did not have to use unique portfolio identifiers until 2006. Before 2006, there only is the Central Index Key (CIK) which can be linked to one or multiple portfolios and thus cannot be used as a unique portfolio identifier. Beginning on February 6, 2006, all open-end mutual fund companies have been required to use electronic IDs that allow to identify fund portfolios and share classes when making their filings with the SEC.[7] There are two types of identifiers used by the SEC. The series ID is used as an identifier on the fund portfolio level, while the class ID is used as an identifier on the share class level. We find that after 2006, 96.40% of all N-CSR filings of open-end investment companies include a series-ID. Since we will use these portfolio identifiers as well as the ticker symbols to merge shareholder letters to CRSP mutual fund data, our sample starts in 2006. The sample ends in December 2012. Filings without information on the Series-ID are dropped from our sample.

There are two separate dates included in the N-CSR filings that are relevant for our empirical analysis. The "report date" refers to the fiscal year or fiscal half-year end (i.e.,

[5] Certification requirements are described in detail by the SEC, see https://www.sec.gov/rules/final/34-47262.htm.

[6] Common phrases include, for example, "dear shareholders", "dear investors", "sincerely", or "yours truly".

[7] See adopting release http://www.sec.gov/rules/final/33-8590.pdf

reporting period end date), respectively, to which the filing refers while the "filing date" marks the day on which the report is filed with the SEC.[8] We extract both dates from the N-CSR filings. We also investigate the distribution of financial reports over calendar months (see Appendix A). While most reports are filed in December (13.3%) and June (13.2%), we find that the report dates are fairly evenly distributed across the year. The fewest reports are filed in January and November (about 3.5% in each of these months).

After extracting the shareholder letter from the N-CSR filing, we use the Pennebaker, Both, and Francis (2007) linguistic inquiry and word count (LIWC) computer program to classify the tone of each shareholder letter. The program automatically processes text files and analyzes their content based on an internal dictionary. We rely on two separate dictionaries following the approach of prior papers concerned with textual analysis in finance (Tetlock (2007), Tetlock, Saar-Tsechansky, and Macskassy (2008), Loughran and McDonald (2011)). Specifically, we use the Harvard IV-4 Psychosociological Dictionary, and the Loughran and McDonald (2011) word lists. While the Harvard dictionary (HVD) is applied to a variety of contexts, the Loughran and McDonald (2011) dictionary (LMD) was designed to specifically capture the tone of financial text. We focus on word lists capturing negative tone as previous work has shown that negations tend to bias the results of positive word lists which makes it much harder to capture any impact of a positive tone (see, e.g., Loughran and McDonald (2011)).

Based on the HVD and LMD dictionaries we then calculate two tone measures for each shareholder letter, HVD^- and LMD^-, by counting the number of negative words in each text and relate it to the number of total words in the respective letter. For each letter, we also compute two language complexity measures. First, we compute the average number of words per sentence, WPS, arguing that a longer sentence is more difficult to read. Second, we compute the length of the letter based on a simple word count.[9]

[8] According to SEC regulations, the maximum time span between the day on which the fund company certifies and sends off a fund's financial report to investors and the SEC filing date is 10 days.

[9] We do not focus on other text complexity measures suggested in the previous literature like the Fog index (see, e.g., Miller (2010)), as Loughran and McDonald (2013b) show that these measures do a poor

2.2 Mutual fund data

After downloading shareholder letters and classifying their tone, we merge them to the Center for Research on Security Prices (CRSP) survivorship bias free mutual fund database. This database comprises mutual fund characteristics and returns. We aggregate all share classes at the fund level. We use the CRSP objective code variable to unify investment objective classifications of Strategic Insights, Wiesenberger, and Lipper into a continuous series. This results in the following ten investment objectives: Micro Cap, Small Cap, Mid Cap, Large Cap, Sector Fund, Growth, Growth and Income, Income, Other Domestic Equity, and Foreign Equity.

To merge shareholder letters to the CRSP database, we establish a unique link between the series-ID obtained from the SEC filing and the WFICN (Wharton Financial Institution Code Number) of fund portfolios as provided in MFLinks. The matching procedure is based on the fund's ticker symbol. Over the period from 2006 to 2012 we identify 5,825 fund portfolio in CRSP/MF Links. Excluding funds with missing ticker symbol reduces the number of funds to 5,338 portfolios. After matching CRSP and SEC data via the ticker symbol, we conduct several plausibility checks to make sure that SEC series ID and CRSP WFICN indeed correspond to the same fund portfolio.[10] Overall, 79.43% of the funds in the CRSP/MFLinks universe can be matched to SEC N-CSR filings. Balanced funds, fixed income funds, and exchange traded funds are dropped from the sample. We focus on equity funds to allow for easy comparability of performance across funds. In addition, we drop observations where a fund's total net assets in a given month is below one million USD. Our final sample comprises 3,567 matched open-end equity funds.

The main variable of interest is the percentage net inflow ("fund flow") for fund i in month t defined as

job in capturing complexity in a financial disclosure context. They suggest to use simple metrics based on document length.

[10] For example, we test whether one single Series-ID is assigned to multiple WFICNs at the same time. Since both identifiers are on the portfolio level, this should not be the case. Thus, all cases where one single Series-ID is assigned to multiple WFICNs at the same time are dropped from the sample.

$$\text{Fund Flow}_{i,t} = \frac{TNA_{i,t} - TNA_{i,t-1}}{TNA_{i,t-1}} - r_{i,t},$$

where $TNA_{i,t}$ denotes fund i's total net assets at the end of month t and r_t denotes fund i's return (net of fees) in month t as reported in CRSP. Flows are adjusted for fund mergers as in Lou (2012). To eliminate the impact of outliers we winsorize fund flows at the smallest and largest 1% of flow observations. In some of our later analysis we will also look at daily flows. Fund flows are defined accordingly, but we have to rely on Morningstar data in these cases, as CRSP does not provide daily TNAs of funds.

2.3 Summary statistics

Summary statistics on all major variables are presented in Table 1.

— Please insert TABLE 1 approximately here —

In Panel A, we present summary statistics on the shareholder letters extracted from the SEC N-CSR filings. The mean percentage of negative words in a given shareholder letter according to the Loughran and McDonald (2011) word list LMD^{-} amounts to 1.87% . This number is much higher for the Harvard dictionary (3.99%) which is not surprising given that the Harvard dictionary comprises more negative words than the LMD dictionary which is specifically designed to capture the tone of financial text. The average shareholder letter includes about 891 words and sentences seem rather long with an average of 27.7 words. With respect to the two dates that are included in the N-CSR filings, we find that there are on average 64 days between reporting period end date (report date) and the filing date for a given shareholder letter.

In Panel B, we present summary statistics on the fund characteristics obtained from the CRSP mutual fund database. The sample includes all funds to which we are able to merge

a shareholder letter. We find that average monthly flows amount to 0.2% with a variation from -21% to 36% at the lower and upper 1% of observations. The average monthly flow of 0.2% seems small as compared to average flows from earlier studies focusing on samples from the 1980s and 1990s like Sirri and Tufano (1998). However, this is consistent with the much lower aggregate growth rates of the mutual fund industry during recent years that comprise our sample period. The average fund in our sample has total net assets of 1,447.70 million USD, is 13.36 years old and has an annual expense ratio of about 1.2%. The six month fund returns amount to on average 3.2% with a volatility of 17.6%. We also compute alphas based on the CAPM, the Fama and French (1993), and the Carhart (1997) model.[11] Consistent with the literature on mutual fund performance, we find that all factor alphas are on average close to zero.

In the next step, we investigate correlations between our variables of interest. Results are presented in Table 2.

— Please insert TABLE 2 approximately here —

The two variables that measure the negativity of a shareholder letter, LMD^- and HVD^-, are highly correlated (0.72), suggesting that they both seem to measure the general tone of a letter. The correlation between the tone measures and flows in the subsequent month is negative. This indicates that flows are lower when the letter had a more negative tone. However, this can of course be driven by lagged returns being negatively correlated with our tone measures (i.e. good returns lead to lower fractions of negative words) and at the same time being positively correlated with future flows. We also observe a positive correlation between fund age, fund risk and both negativity measures, respectively, meaning that shareholder letters tend to be more negative the older and the more risky the fund. Of course, all of these results are univariate in nature. To learn more about the marginal influence of various variables on tone and the impact of tone on subsequent flows, we turn to a multivariate analysis in the following sections.

[11] For details on the calculation of the alphas as well as our other variables, see Appendix B.

3 Determinants of shareholder letters' tone

We start our empirical investigation by looking at the determinants of a shareholder letter's tone. After reading some randomly selected shareholder letters we find that they largely differ in their writing styles. While some of them are written in a very technical manner with a formal discussion of the fund's financial outcome, others are written in a very literary style with quotes and humorous comments. Appendix C presents two examples. Both funds have significantly underperformed over the past six months before the letter is sent. The first fund, offered by American Century Quantitative Equity Funds, delivered a return of –34%, while the second fund, offered by Virtus Insight Trust, delivered a return of –33%. However, the fund managers of these funds offer different views on how to interpret the financial outcome of the respective fund. The first shareholder letter (American Century) is still relatively positive. It states that "the company is well positioned to deal with market turmoil" and they expect to "identify attractive investment opportunities regardless of market conditions". In contrast, the second letter (Virtus) expresses much less optimism. For example, it talks about a "constant flow of negative news" and says that "the near-term outlook continues to be filled with uncertainties". This difference is also reflected in our negativity measure which has a value of 2.78% for the first letter, and a much higher level of 4.33% for the second letter, respectively. In the six months after the filing of the shareholder letters, the American Century fund faced relatively moderate outflows of 0.8%, which is in sharp contrast to the Virtus fund, which experienced large outflows of 6.73% over the same period.

To investigate the determinants of a shareholder letter's tone formally, we conduct a multivariate analysis where we use one of our two tone measures, LMD and HVD, respectively, as dependent variable and then relate the tone to past performance as well as several fund and fund company characteristics. Results are presented in Table 3 .

— Please insert TABLE 3 approximately here —

In the first two columns, we report results where we include segment and time fixed effects. Segment fixed effects control for the general level of tone in texts about funds with a specific investment objective. In addition, we also include time fixed effects to control for the general performance of equity markets. Specifically, because the time lag between the "report month" and the "filing month" differs between funds, we include both, report month and filing month fixed effects. Report month fixed effects capture the impact that average performance and market conditions might have on letter tone of all funds whose reporting period ends in the same month as the fund under consideration. Filing month fixed effects capture any potential impact of general conditions at the moment when the report is actually filed. This distinction is important, as for example a very negative market return after the reporting period but before the filing date, i.e. when the letter is actually written, might well have an impact on the tone in which the letter is written, too.

We find that fund returns over the reporting period are significantly negatively related to our tone measure, i.e. a better return leads to fewer negative words. This result holds based on both, the LMD and the HVD tone measure.[12] While expected, this finding shows that the tone measures does actually seem to do a good job in capturing performance induced differences in letter writing style.

We find no impact of flows that occur during the reporting period or past volatility on the tone of shareholder letters. The size of the fund itself has a negative impact on our tone measure, i.e. larger funds tend to be described more positively. At the same time, large fund companies as measured by overall fund family TNA tend to write more negative shareholder letters on average as indicated by the positive impact of fund company size on the negativity measures. We also include a fund's age and its expense ratio to analyze whether more established funds or more expensive funds tend to be written about more positively, but generally fail to find any significant impact. The only exception is a positive impact of the expense ratio on the HVD but not on the LMD measure. Finally, we also

[12] In unreported results, we also control for fund returns between report date and filing date. We do not find a significant impact of this variable, while all other results obtain.

include the change in the number of funds in the same investment objective to check whether more competition leads fund managers to write more positively about their own fund, but find no evidence for this to be the case.

Overall, the main impact on tone stems from individual fund returns over the reporting period. Note that this result can be driven by both, cross-sectional differences across funds and time-series variation within funds, but not time-series variation in overall market conditions, because the specification includes time fixed effects. To check whether some funds managers just happen to always write more positively and tend to always have good returns, or whether there is also variation within a fund with respect to tone, in column (3) and (4) we replace the segment fixed effects by individual fund effects. Even in this more restrictive specification we still find a very strong impact of individual fund returns on shareholder letter tone. Statistical significance as well as the magnitude of the coefficient estimates are only slightly reduced, suggesting that variation in tone is mainly driven by time-series variation at the fund level. Thus, our results are not only driven by differences across funds.

Our findings with respect to the control variables are largely unaffected. Fund size and expense ratios are now always insignificant, which is not surprising given that these variables are highly persistent over time. We do find a negative impact of past flows on the LMD tone measure, suggesting that if a fund receives relatively high flows the tone of the letter becomes less negative - even after controlling for past performance. While it is plausbile that fund managers feel more confident and eventually write more positive about their fund if their past performance is accompanied by large inflows, the result does not hold based on the HVD measure.

4 The Impact of Shareholder Letter Tone on Fund Flows

Shareholder letters vary largely in their writing styles and the tone in which they are written, as the examples in Appendix C show. The fraction of negative words varies substantially between virtually zero and nearly 10% according to the LMD list. In this section, we investigate whether mutual fund investors are sensitive to this variation and eventually base their investment decisions on the way in which fund managers communicate with them. In Section 4.1 we first look at the reaction of monthly flows, before we explore the temporal dynamics of the relationship between tone and flows in more detail for a subset of observations where information on daily flows is available in Section 4.2.

4.1 Evidence Based on Monthly Flows

Shareholder letters are published semi-annually. They have to be filed with the SEC not later than 10 days after they have been sent out to investors. To investigate the impact of shareholder letters on mutual fund flows, specifying the time structure of our model correctly is important. We use two different specifications: (1) In the first specification ("filing date"), we relate fund flows in month t to the tone of a shareholder letter filed with the SEC in month t. The drawback of this approach is that funds filing their shareholder letters with the SEC at the very end of month t are unlikely to experience any flow effects within the same month.[13] A similar problem occurs for funds filing their shareholder letters with the SEC at the beginning of month t if we related fund flows in month $t+1$ to the tone of a shareholder letter filed with the SEC in month t. (2) Therefore, we also use a specification ("Flow adj. Filing Month") where we relate fund flows in month t to the tone of a shareholder letter filed with the SEC in month t only if the fund filed the letter with the

[13]Furthermore, there could be a potential endogeneity problem for these funds if the returns between reporting date and filing date influence tone and inflows at the same time. However, this is not much of a concern here as we do not find any impact of fund returns during that period on letter tone (see previous footnote). Furthermore, in unreported results, we additionally control for the fund's return between the shareholder letter's reporting and filing date to make sure that our results are not driven by letters reflecting any more recent changes in fund performance. Our results are not affected.

SEC before and including day 15 of a given month. If a fund filed the letter with the SEC after day 15 of a given month, we relate its flows in the subsequent month $t+1$ to the tone of a shareholder letter filed in month t. This specification should help us to capture the flow effects better if they occur in a relatively short time period after the letters are sent out. We think that this is likely to be the case since investors probably react to a shareholder letter immediately when they receive and read it, or not at all.[14]

The dependent variable in our main regressions is monthly fund flows winsorized at the top and bottom 1%. We relate fund flows to one of our negativity measures, LMD^- or HVD^-, respectively. Various papers show that past performance has a positive and convex impact on inflows (e.g., Sirri and Tufano (1998)). Thus, we include the fund's return rank and squared return rank within its investment objective. Ranks are normalized to be evenly distributed between zero and one, with the best fund getting assigned a rank of one. Return ranks are based on fund returns over the shareholder letter's reporting period, i.e. the previous 6 months before the reporting date. We also include lagged fund size, defined as the logarithm of a fund's total net-assets (TNA) in million USD, and lagged company size, defined as the logarithm of the fund company's total net-assets (TNA) in million USD. Furthermore, we include fund age, defined as the logarithm of a fund's age in months, the fund's expense ratio as reported in CRSP, as well as flow of new money into the whole segment of the fund. Standard errors are clustered at the fund level. The regressions are estimated with fund, reporting month, and filing month fixed effects. Note that the inclusion of fund fixed effects takes care of the possibility that fund companies might write differently about particular funds in general. Our identification comes from within fund time-series variation in the tone of the shareholder letter. Thus, our results should provide a lower bound for the potential impact of tone on flows as any potential cross-sectional variation in tone between funds is neglected. Results are reported in Table 4.

— Please insert TABLE 4 approximately here —

[14] In our later analysis in Section 4.2, we investigate daily fund flows that circumvent some of the problems described above. However, daily flows are only available for a subsample of funds and a shorter time period.

In Panel A of Table 4, we relate fund flows to our raw tone measures, i.e. the fraction of negative words that are included in a shareholder letter according to one of our linguistic dictionaries, LMD^- or HVD^-, respectively. In columns (1) and (2) we relate the negativity of a letter filed in month t to inflows in this month t. We find that fund flows are significantly negatively related to the negativity of a shareholder letter, i.e. the more negative the tone of the letter is, the lower subsequent flows are. This result is statistically significant at the 1% level for the LMD^- negativity measure, and statistically significant at the 5% level for the HVD^- negativity measure. The impact of letter tone on flows is also economically meaningful: a one standard deviation increase in the fraction of negative words according to the LMD^- word list leads to flows which are 2.25 million USD lower for a fund of average size in the subsequent month. The results are slightly weaker if the negativity measure is based on the HVD^- word list which, according to Loughran and McDonald (2011), is less qualified to capture the tone of financial text.

Our main result of a negative impact of negativity on flows gets even stronger if we relate flows to shareholder letters of the same month only if the letter is filed before and including day 15 of that month, and use flows of the subsequent month otherwise ("Flow adj. Filing Month" specification). These results are presented in columns (3) and (4) in Panel A of Table 4. The stronger impact of tone on flows in the adjusted filing data specification suggests that investor indeed react relatively fast on shareholder letters.

With respect to our control variables, we can confirm the positive and convex performance flow relation found in earlier studies (e.g., Sirri and Tufano (1998)). We also observe a negative impact of fund size and fund age on fund flows, while company size and segment flows have a significantly positive impact on fund flows. These results are also broadly in line with the previous literature.

Results from Table 3 show that shareholder letters tend to be more positive after good fund performance. In addition, fund flows, fund size and fund company size are also predictive for the tone of a shareholder letter. Thus, it could be the case that shareholder letters

merely reflect new information on the fund's economic situation and that fund investors react to this new information by adjusting their investments accordingly. However, note that we do control for the variables that have an impact on tone in four flow regression already. Nevertheless, to further rule out this explanation, we re-run our main regression based on an orthogonalized measure of the shareholder letter's negativity. That is, we first run a multivariate regression similar to the specifications presented in Table 3 where the negativity of the shareholder letter is the dependent variable.[15] From this regression, we obtain the residual as our orthogonalized measure of the negativity of a shareholder letter. We then use this adjusted tone measure as an independent variable in our main flow regressions. Results are presented in Panel B of Table 4. They portray a consistent picture to Panel A. In the unadjusted filing date specification we still observe a significantly negative coefficient of the shareholder letter's tone on mutual fund flows for the LMD^- negativity measure. Results are again weaker and insignificant for the HVD^- negativity measure in this specification, but still point into the same direction. In the adjusted filing date specification (which should be better able to capture any short-term reaction upon shareholder letter tone) we again find a strong negative impact of tone on flows for both negativity measures. The coefficient estimate is now significant at the 1% and 5% level, respectively, for the two measures, and coefficient estimates are of similar magnitude as in Panel A.

We have shown above that the main determinant of letter tone is the past performance of the fund (see Table 3). At the same time, performance is also a main determinant of flows (see, e.g., Sirri and Tufano (1998). Thus, it is of great importance to carefully control for performance when assessing the impact of letter tone on flows. Although we already control for the non-linear performance flow relationship in our flow regressions (and our results hold when we use an orthogonalized version of tone), in the following we will present results from additional stability checks. We re-run the regression from table 4 but control

[15] We follow specifications (3) and (4) of Table 3 but for reasons of consistency with the models in Panel A from Table 4 we include the fund's return rank and squared return rank instead of just the fund return. In addition, we include the fund company's return, as well as the fund return between report and filing dates, respectively.

for past performance using a piece-wise linear regression approach instead of the quadratic specification used above. We follow Sirri and Tufano (1998) and use three performance intervals based on the return rank of a fund in its segment over the reporting period. The cutoffs to define the three intervals are 0.2 and 0.8. Table 5 shows the results.

— Please insert TABLE 5 approximately here —

We find that the coefficients of LMD^- and HVD^- are even larger (in absolute value) and remain highly significant. These results hold irrespective of whether we look at flows in the filing month (specifications (1) and (2)), or whether we use the adjusted filing date specification (specifications (3) and (4)).

Panel B shows an additional robustness test in which we split our sample in two subperiods. The first (second) subperiod is from January 2006 to June 2009 (July 2009 to December 2012). Although the subperiods are rather short, we still obtain significant coefficients. In the first subsample, the impact of tone on flows is highly significant (t-statistic of -3.30 and -3.68, respectively, for the unadjusted and the adjusted filing month specification) and the absolute size of the coefficient estimate is larger than in the overall sample. In the second subperiod, the coefficient estimates are very similar as in the overall sample and statistical significance is slightly reduced. However, the effect is still always significant at least at the 10%-level.[16]

Taken together, we find strong evidence that the tone of a shareholder letter has an impact on mutual fund flows. The more negative a shareholder letter is written, the more money is subsequently withdrawn from or the less money is flowing into, respectively, the fund. The fact that our results are stronger based on the adjusted filing date specification than based on the original specification confirms the presumption of a relatively quick reaction of investors to the tone of the shareholder letter. The results based on the orthogo-

[16]The results shown in Table 5 are based on the raw tone measures. They also obtain if we use the orthogonalized version of LMD^- instead.

nalized tone measures show that it is really the tone of the letter that investors react upon rather than other variables that have an impact on tone and might also influence flows.

4.2 Temporal Dynamics: Evidence From Daily Flows

In this section, we analyse the short- and long-term temporal dynamics of the relation between shareholder letter tone and investor flows. To further refine our main result of a negative relation between fund flows and the tone of shareholder letters, we first turn to a high frequency analysis of how daily fund flows react to shareholder letters after the filing date. We then turn to an analysis of flows over several months after the filing of a shareholder letter. The short-term analysis based on daily fund flows allows us to better capture an immediate reaction of fund flows to shareholder letters and to investigate the time pattern of the flow reaction in more detail. Thereby, we can directly test the conjecture from Section 4.1 that flows react very fast to tone. This setting also helps us to identify the impact of letter tone more clearly in an event-study like setting. The long-term analysis will address the question whether the tone driven flow effects reverse over time or whether the lower flows to funds with a high negativity measure as compared to funds with a low negativity measure lead to a persistent difference of assets under management.

Unfortunately, CRSP does not contain daily flow data. However, a proxy for daily flows is provided in the Morningstar database, but daily flow data for most funds (4,375 funds or 61.84% of funds in Morningstar with information on daily flows) become available in Morningstar only in July 2008. Only a few funds (486 funds or 6.87%) provide information on daily flows earlier than July 2008. For those funds, for which daily flow information is available, we merge daily flow data from Morningstar with CRSP/MFLinks using the fund's 9-digit CUSIP.[17]

[17]We verify the match is correct by comparing the TNA and the inception date from Morningstar with the TNA and the inception date in CRSP. For more than 97% of matched funds the ratio of month-end TNA from Morningstar divided by month-end TNA from CRSP is in the interval from 0.8 to 1.2. For the inception date we require that the difference in inception dates is three months or less. In total, 99.60%

— Please insert FIGURE 1 approximately here —

Figure 1 shows the subsequent cumulative flows for up to 15 days after the filing date of a shareholder letter. We plot the cumulative flows separately for funds with above and below median realizations of their orthogonalized negativity measures based on the LMD dictionary.[18] Visual inspection shows a strong divergence of flows during the first 10 days. Funds with an above median negativity score face outflows, while funds with an below median negativity score experience inflows. This pattern confirms our previous regression results which were based on monthly data. After day 10, the difference in cumulative flows does not increase anymore, which again suggests a relatively rapid flow reaction to letter tone.

To investigate the exact time pattern of the flow reaction more formally, we compute fund flows for different time windows following the filing date of a shareholder letter. Specifically, we compute non-overlapping flows over the first 5 days, days 6 to 10, and days 11 to 15 after a shareholder letter is filed and re-run our main regression specification. Results are reported in Panels A and B of Table 6, while Panels C and D report results of a long-term analysis of monthly flows up to almost one year after the filing of a shareholder letter.

— Please insert TABLE 6 approximately here —

We again use the unadjusted tone measure (Panels A and C) as well as the orthogonalized measure (Panels B and D) as our main independent variable. Results in Panels A and B show that there is an immediate reaction of daily fund flows after a shareholder letter is sent out and filed with the SEC. The reaction is strongest within the first five days after the document is filed. The coefficient is statistically significant at the 1% level for the LMD^- negativity measure, and statistically significant at the 5% level for the HVD^- negativity

of matched monthly observations fulfil at least one of the two conditions. Therefore, we keep all matched observations in our sample.

[18] Results based on the HVD dictionary look very similar.

measure. We still observe a significant flow reaction for the subsequent five days, i.e. days 6 to 10 after the filing date. For the LMD^- negativity measure, the effect is significant at the 5% level but gets weaker in economic terms. The effect gets slightly stronger for the HVD^- negativity measure, which is also significant at the 5% level in both Panels. We do not observe any significant flow reaction between days 11 and 15 after the shareholder letter is filed with the SEC. The coefficients on both tone measures are still negative, but not statistically significant at conventional levels. This result confirms the findings from Figure 1 that most of the flow reaction occurs within a period of 10 days after the filing date.

In Panels C and D, we investigate the reaction of flows to tone of a shareholder letter over non-overlapping long horizons of months one to five (before the next semi-annual N-CSR report is published) and months 6 to 11 (including the next N-CSR report), respectively. The first period excludes the initial reaction documented above. Results based on the unadjusted tone measure (Panel C) show that the flow reaction is still observable in the first long-term period lasting till month 5, i.e. the effect does not seem to reverse. A similar albeit weaker pattern is observed for the adjusted tone measure (Panel D). Looking at months 6 to 11 after the filing, we find no significant and very small coefficient estimates in Panel C and D based on both tone measures, confirming that there is no subsequent offsetting long-term flow effect after the initial reaction.

Taken together, results in Table 6 suggest that there is an immediate flow reaction to the tone of a shareholder letter after it is filed with the SEC. We observe a significant reduction of fund flows in response to a negative shareholder letter within the first 10 days after a letter is filed. There is weak additional reaction in the same direction in the 6 month period following the initial reaction. There neither is a significant flow reaction in periods further away from the filing date, nor do we observe a reversal of our initial flow effect over longer time periods.

4.3 Do Writing Styles Matter?

In the next step, we investigate whether mutual fund investors also react to the writing style of a shareholder letter. While some shareholder letters are written in a passive and bureaucratic style, others are written in a very personal language. Massa, Reuter, and Zitzewitz (2010) point out that consumers prefer if a named individual is associated with a financial product and that the media and investors prefer investments that come with plausible stories about their performance. Thus, mutual fund investors might judge the content of a shareholder letter differently if it is written in a personal style that conveys the impression that the fund manager is directly talking to the investor. To investigate whether personal writing styles mitigate the impact of our negativity tone measure on mutual fund flows, we define a dummy variable that is equal to one if a shareholder letter is written in first-person singular or plural, i.e. contains "I" or "we", and zero otherwise. Then, we re-run our main flow regression from Table 4 and include the personal writing style dummy variable, as well as an interaction of this dummy with one of the negativity measures. To make sure that we are not just capturing differences in flow that arise due to the management structure of a fund, we also include a dummy variable indicating whether a fund is managed by a team. Results are presented in Table 7.

— Please insert TABLE 7 approximately here —

Results in Panel A are based on our unadjusted tone measures. We still observe a significantly negative impact of letter tone on mutual fund flows. This effect is weakly mitigated if the writing style of a shareholder letter is personal. The interaction term of the personal writing style dummy and the tone measure is positive and marginally significant in columns (1) to (3), while it is not significant in column (4). A similar result is obtained if we run our regressions based on the adjusted tone measures in Panel B. Additionally, we find a significantly positive impact of the writing style dummy itself in columns (1) and (2) which suggests that mutual fund investors have a preference for shareholder letters

that are written in first-person singular or plural. This finding is consistent with the view that readers have a preference for personal rather than bureaucratic writing styles per se (Chartprasert (1993)). However, the result is not obtained based on the adjusted filing month specification. Overall, the writing style seems to have only a moderate influence on the negativity-flow relationship and we still find a highly significant impact of negativity on flows after controlling for personal writing style.

5 Are Shareholder Letters Predictive for Fund Performance or Fund Manager Behavior?

While the results in the previous section clearly show that investors do indeed react upon the tone of managerial letters, at this point it is still an open question whether the tone of shareholder letters is an informative signal that mutual fund investors should take into account when making their investment decisions. Thus, we now investigate the predictive power of shareholder letters for future fund returns. We will also investigate whether shareholder letters are informative with respect to other dimensions of managerial behavior besides future performance, namely the manager's overall and idiosyncratic risk taking.

5.1 Shareholder Letter Tone and Future Performance

To examine the predictive power of letter tone for future fund performance we explain various performance measures of a fund as dependent variable by the lagged tone of the fund's shareholder letter and various control variables. As performance measures we use the 6-month performance over the period starting with the filing month based on (1) raw returns, (2) the CAPM 1-factor alpha, (3) the Fama and French (1993) 3-factor alpha, and (4) the Carhart (1997) 4-factor alpha.[19] As our main independent variable of interest we use

[19]Note that examining excess returns over the market return is linearly equivalent to including month fixed effects in our regression. Since all of our regressions include month fixed effects, we do not investigate excess returns over the market return separately.

the LMD and HVD negativity measures. For example, if a fund files a shareholder letter in January 2010, we define performance over the period February 2010 to July 2010. As control variables we include fund size, family size and fund age. Additionally, we control for the impact of flows during the previous reporting period to which the letter refers to. To capture any impact tone-induced flows might have, we also include contemporaneous flows over the performance measurement period. We also include reporting month and filing month fixed effects as well as individual fund fixed effects. The latter control for the impact of all non-time varying individual fund characteristics on performance. We estimated the regressions with standard errors clustered on the fund level. Results are presented in Table 8.

— Please insert TABLE 8 approximately here —

Panel A presents results based on the unadjusted (i.e. not orthogonalized) LMD negativity measure. Coefficient estimates for the impact of negativity on future performance are all positive, but generally not significant. The only exception is the case where performance is measured based on the 3-factor alpha. Here we find a positive coefficient which is marginally significant at the 10% level (t-statistic of 1.65). A positive coefficient estimate for the negativity measure suggests that funds about which a manager writes more negatively tend to perform better in the future, rather than worse.

With respect to the control variables, we find that size has a detrimental effect on performance, which confirms earlier evidence (e.g. Chen, Hong, Huang, and Kubik (2004)). Fund age positively influences fund performance, while past flows have a negative impact. The latter finding can be explained by liquidity motivated trading due to flows leading to inferior stock picks (Alexander, Cici, and Gibson (2007)). The coefficient estimate for the impact of contemporaneous flows is significantly positive, but this is probably due to flows

reacting to short-term performance within the six month period rather than the other way round. The other control variables show no significant impact on performance.[20]

Results in Panel B are based on the unadjusted HVD negativity measure. They are very similar to those obtained based on the LMD negativity measure: coefficient estimates for the impact of the negativity measure are still always positive and only significant if we measure performance based on the 3-factor alpha.

To assess the stability of our performance results, we conduct a battery of robustness checks. First, instead of using the unadjusted negativity measures, in Panels A and B of Table 9 we present results based on the orthogonalized tone measures as described in the previous section.

— Please insert TABLE 9 approximately here —

Panel A (B) presents results based on the orthogonalized LMD (HVD) negativity measure. Regressions include the same control variables and fixed effects as in Table 8. In Panels C and D we also present results based on the two orthogonalized negativity measure but additionally use the adjusted filing date convention from above, i.e. we let the performance evaluation period start one month after the filing month if the filing date of a letter is before or on the 15th day of this month and two months after the filing month if the filing date is after the 15th day of the month. All coefficient estimates for the impact of letter tone on the various performance measures are small and insignificant.

Second, we vary the performance evaluation period. Instead of looking at the performance over the subsequent six months, we compute performance over shorter horizons. Results based on the orthogonalized negativity measures are presented in Table 10.[21]

[20] Expense ratios usually have a significantly negative impact on net of fee performance measures. However, in our setting we include fund fixed effects and expense ratios are very persistent over time. This explains why we find no significant impact of the expense ratio in Table 8.

[21] Results based on the raw negativity measure and/or if we use the adjusted filing date convention to define the performance evaluation start month are again very similar.

— Please insert TABLE 10 approximately here —

In Panels A and B (C and D) we present results for the impact of negativity on one month (one quarter) performance. Across specifications, we always find a positive coefficient estimate for the impact of negativity on performance. The coefficients are significant if performance is measured based on one-month 3- and 4-factor alphas for both negativity measures and marginally significant for the 1-factor alpha based on the quarterly horizon for the HVD measure.

Overall, we can conclude that there is no convincing evidence that the tone of shareholder letters predicts future fund performance. If anything, a more negative tone of the shareholder letter is associated with slightly better subsequent performance. We can only speculate what might explain this effect. One possible reason might be that fund managers increase their efforts to improve performance after they sent out a negative shareholder letter. Our earlier main result that investors invest less if the tone of a letter is more negative can not be rationalized based on these findings. Rather, if fund investors interpreted the tone of a shareholder letter as an informative signal, we would expect them to invest more in funds with a negative letter in anticipation of slightly improved future fund performance.

5.2 Shareholder Letter Tone and Managerial Behavior

In the remainder of this section, we analyze whether the tone of a shareholder letter tells us something about the way in which a mutual fund manager behaves in the future. Specifically, we want to analyze the conjecture that a negative tone of a shareholder letter is a sign of a pessimistic attitude of the fund manager and eventually leads to less risk taking. Thus, we relate managerial risk taking over a certain period to the tone of the last preceding shareholder letter. As dependent variables we use the funds total risk, defined as the standard deviation of daily fund returns, its systematic risk, computed as the market beta in the Carhart (1997) 4-factor model estimated based on daily fund returns, and its

idiosyncratic risk, calculated as the standard deviation of the residuals in the same model. The main independent variable of interest is one of our two negativity measures, LMD or HVD. We include various fund and fund company characteristics. Furthermore, we also include flows and past performance during the reporting period as control variables. It is important to control for past performance, as the realized performance in the last period might lead to a change in managerial behavior due to her becoming more (over)confident (e.g. Puetz and Ruenzi (2011)) or because of strategic risk-taking incentives (e.g., Brown, Harlow, and Starks (1996)) and because we want to analyze whether there is any additional information that investors can derive from the tone of the shareholder letter that could not already be derived from other observable information.

All regressions include the same time fixed and fund fixed effects as our previous regressions and standard errors are clustered at the fund level. Results are presented in Table 11.

— Please insert TABLE 11 approximately here —

In Panel A (B) we use the raw (orthogonalized) version of our negativity measures. In columns (1), (3) and (5) ((2), (4), and (6)) we present results using the LMD (HVD) negativity measure. We find a negative coefficient estimate for the impact of negativity on total risk in the first two columns in both Panels. However, the estimates are not significant at conventional levels. If we look at systematic risk and idiosyncratic risk individually, we find no impact of tone on the first, but a strong negative impact on the latter, i.e. a high negativity score of a shareholder letter predicts significantly less idiosyncratic risk in the subsequent six months. The effect is statistically significant at the 1% level for both, the LMD and the HVD measure. This finding suggests that fund managers deviate from their index less and take fewer active bets if the tone of their last shareholder letter was more negative, which is consistent with risk-averse managers herding more towards the market.

With respect to the control variables, we find that larger funds and funds that belong to larger families take slightly more overall risk and that older funds tend to take less risk for all risk measures. The six month return of the fund over the last reporting period has a strong positive impact on risk taking, suggesting that fund managers become more daring after good past performance.

Results in Table 11 are based on risk taking behavior over six months after a shareholder letter has been filed with the SEC. If we assume that the tone of the letter reflects the current mood of a fund manager, the effect might be rather short-term. Thus, as a stability check, we also look at risk taking over shorter periods after the filing of the report. The respective results over the subsequent one-month period and the subsequent three-month period are presented in Table 12.

— Please insert TABLE 12 approximately here —

Results for the one month horizon are presented in Panel A. The general pattern from Table 11 is confirmed and even slightly more pronounced now: we find a large and highly significant negative impact of both negativity measures on idiosyncratic risk taking. Additionally, we now also find a significantly negative impact on total risk, which is statistically significant at the 1% (10%) level for the LMD (HVD) negativity measure. Results based on the three month horizon from Panel B are slightly weaker, but confirm the general tendency of fund managers taking less idiosyncratic risks and eventually herding more towards the index if their last shareholder letter's tone was more negative.

6 Conclusion

This paper uses textual analysis to investigate the tone of shareholder letters. These letters are regularly sent out by fund companies to inform investors about the fund's performance,

strategy and business environment. They reach a large number of investors and vary greatly in their content and style.

Our results based on a large and representative sample of US equity funds show that the tone of these letters can be measured reliably by dictionary based negativity measures suggested in the finance literature.

Our main finding is that fund flows strongly react to the content of these letters. This result holds after carefully controlling for past performance and other fund characteristics. Specifically, the tone of a shareholder letter, measured as the fraction of negative words it comprises, is negatively related to fund flows. These findings show that many investors pay close attention to the content of shareholder letters and base their investment decisions in mutual funds on the tone of these letters, shying away from funds that use a negative language in their discussion.

We then use daily flow data to more directly identify the impact of shareholder letter tone on flows. In an event study like setting, we find that flows react immediately after a shareholder letter is sent out and filed with the SEC. The flow reaction is completed within ten days after the filing date. Flows do not reverse later on, i.e. the flow effect is permanent.

Furthermore, we find that more negative shareholder letters are not predictive of worse future fund performance. In contrast, in some of our specifications a negative tone even predicts superior future performance. Thus, if anything, rational investors should invest more in funds with negative letters rather than less. Our finding that mutual fund shareholders behave exactly in the opposite way by investing less in these funds suggests that shareholder letter tone creates investor sentiment and distort capital flows in funds.

In further analyses, we find results that suggest that the tone of the letters is informative about the mood of fund managers. Specifically, we can show that fund managers tend to herd more towards the market by taking less idiosyncratic risk after they write negative letters.

Overall, our results show that there is a surprisingly strong reaction of investors. This finding suggests that investment companies should pay close attention to a careful writing of shareholder letters and try to avoid a too pessimistic tone in these letters. At the same time, our analysis also suggests that investors should take the wording of these letters with a grain of salt as neither very positive letters predict good future performance of the fund, nor very negative tone letters signal subsequent underperformance.

References

Alexander, G. J., G. Cici, and S. Gibson, 2007, "Does Motivation Matter When Assessing Trade Performance? An Analysis of Mutual Funds," *Review of Financial Studies*, 20, 125–150.

Barber, B., T. Odean, and L. Zheng, 2005, "Out of Sight, Out of Mind: The Effects of Expenses on Mutual Fund Flows," *Journal of Business*, 78, 2095–2119.

Breton, G., and R. J. Taffler, 2001, "Accounting information and analyst stock recommendation decisions: a content analysis approach," *Accounting and Business Research*, 31, 91–101.

Brown, K. C., W. V. Harlow, and L. T. Starks, 1996, "Of Tournaments and Temptations: An Analysis of Managerial Incentives in the Mutual Fund Industry," *Journal of Finance*, 51, 85–110.

Carhart, M. M., 1997, "On Persistence in Mutual Fund Performance," *Journal of Finance*, 52, 57–82.

Chartprasert, D., 1993, "How Bureaucratic Writing Style Affects Source Credibility," *Journalism and Mass Communication Quarterly*, 70, 150–159.

Chen, J., H. G. Hong, M. Huang, and J. Kubik, 2004, "Does Fund Size Erode Mutual Fund Performance? The Role of Liquidity and Organization," *American Economic Review*, 94, 1276–1302.

Fama, E. F., and K. R. French, 1993, "Common Risk Factors in Returns on Stocks and Bonds," *Journal of Financial Economics*, 33, 3–56.

Greenwood, R., and S. Nagel, 2009, "Inexperienced investors and bubbles," *Journal of Financial Economics*, 93, 239–258.

Huang, A., A. Y. Zang, and R. Zheng, 2013, "Evidence on the Information Content of Text in Analyst Reports," Working Paper.

Ivkovic, Z., and S. Weisbenner, 2009, "Individual investor mutual fund flows," *Journal of Financial Economics*, 92, 223–237.

Jain, P. C., and J. S. Wu, 2000, "Truth in Mutual Fund Advertising: Evidence on Future Performance and Fund Flows," *Journal of Finance*, 55, 937–958.

Kaniel, R., L. T. Starks, and V. Vasudevan, 2007, "Headlines and bottom lines: attention and learning effects from media coverage of mutual funds," Working Paper; Available at SSRN: http://papers.ssrn.com/abstract=687103.

Kothari, S. P., X. Li, and J. E. Short, 2009, "The Effect of Disclosures by Management, Analysts, and Business Press on Cost of Capital, Return Volatility, and Analyst Forecasts: A Study Using Content Analysis.," *The Accounting Review*, 84, 1639–1670.

Lou, D., 2012, "A Flow-Based Explanation for Return Predictability," *Review of Financial Studies*, 25(12), 3457–3489.

Loughran, T., and B. McDonald, 2011, "When is a Liability not a Liability? Textual Analysis, Dictionaries, and 10-Ks," *Journal of Finance*, 66, 35–65.

——— , 2013a, "IPO first-day returns, offer price revisions, volatility, and form S-1 language," *Journal of Financial Economics*, 109, 307326.

——— , 2013b, "Measuring Readability in Financial Disclosures," Working Paper.

Massa, M., J. Reuter, and E. Zitzewitz, 2010, "When should firms share credit with employees? Evidence from anonymously managed mutual funds," *Journal of Financial Economics*, 95, 400424.

Miller, B., 2010, "The effects of reporting complexity on small and large investor trading," *The Accounting Review*, 85, 2107–2143.

Niessen-Ruenzi, A., and S. Ruenzi, 2013, "Sex Matters: Gender and Prejudice in the Mutual Fund Industry," Working Paper (May), Univeristy of Mannheim; Available at SSRN: http://ssrn.com/abstract=1957317.

Pennebaker, J. W., R. J. Both, and M. E. Francis, 2007, "Linguistic Inquiry and Word Count (LIWC2007): A text analysis program," *Austin, TX: LIWC.net*.

Puetz, A., and S. Ruenzi, 2011, "Overconfidence Among Mutual Fund Managers," *Journal of Business Finance & Accounting*, 38, 684–712.

Sirri, E. R., and P. Tufano, 1998, "Costly Search and Mutual Fund Flows," *Journal of Finance*, 53, 1589–1622.

Tetlock, P., 2007, "Giving Content to Investor Sentiment: The Role of Media in the Stock Market," *Journal of Finance*, 62, 1139–1168.

——— , 2011, "All the News That's Fit to Reprint: Do Investors React to Stale Information?," *Review of Financial Studies*, 24, 1481–1512.

Tetlock, P. C., M. Saar-Tsechansky, and S. Macskassy, 2008, "More Than Words: Quantifying Language to Measure Firms' Fundamentals," *Journal of Finance*, 63(3), 1437–1467.

Wermers, R., 2003, "Is Money Really 'Smart'? New Evidence on the Relation Between Mutual Fund Flows, Manager Behavior, and Performance Persistence," Working Paper (November), University of Maryland.

Table 1: Summary Statistics

This table shows summary statistics (mean, standard deviation (sd), median (p50), 1st percentile (p1), 99th percentile (p99), and number of observations (N)) of shareholder letters in Panel A, and of the fund characteristics in Panel B. Tone is measured by the number of negative words according to the Loughran and McDonald (LMD^-) or the Harvard (HVD^-) negative word lists divided by the total number of words. Complexitiy is measured by the number of words and the number of words per sentence (WPS). Time Difference is the number of days between the fiscal (half-) year end date (Report Date) and the date when the document is filed with the SEC (Filing Date). All fund characteristics are defined in detail in Appendix B.

Variable	mean	sd	p50	p1	p99	N
Panel A: Shareholder Letters						
LMD^-	1.869	1.284	1.750	0.000	5.340	33,893
HVD^-	3.988	1.719	3.950	0.000	8.300	33,893
Words	891.348	809.214	603	43	4,172	33,893
Words per Sentence (WPS)	27.43	10.52	25.30	16.10	96.00	33,893
Time Difference	64.23	5.15	65.00	49.00	72.00	33,893
Panel B: Fund Characteristics						
Fund Flow Filing Month	0.002	0.067	-0.005	-0.213	0.358	33,434
Fund Flow adj. Filing Month	0.002	0.066	-0.005	-0.211	0.342	33,403
Fund Size	5.454	1.918	5.485	1.065	9.947	33,893
Fund Age	4.770	0.859	4.887	2.079	6.693	33,656
Expense Ratio	0.012	0.005	0.012	0.001	0.026	32,554
Volatility past 12 Months	0.052	0.026	0.049	0.012	0.136	33,760
Return Reporting Period	0.032	0.176	0.048	-0.452	0.467	33,002
1-Factor Alpha	-0.001	0.028	-0.001	-0.081	0.081	33,024
3-Factor Alpha	-0.000	0.026	-0.000	-0.076	0.075	33,024
4-Factor Alpha	0.000	0.025	-0.000	-0.074	0.074	33,024
Total Risk_{t+1}	0.013	0.009	0.011	0.003	0.051	33,444
Idiosycratic Risk_{t+1}	0.003	0.003	0.003	0.000	0.015	33,444
Systematic Risk_{t+1}	0.953	0.298	0.983	0.004	1.779	33,444

Table 2: Cross Correlations of Main Variables

This table shows correlations of shareholder letter tone, measures of complexity, and fund characteristics. Tone is measured by the number of negative words according to the Loughran and McDonald (LMD^-) or the Harvard (HVD^-) negative word lists divided by the total number of words. Complexity is measured by the number of words and the number of words per sentence (WPS). All fund characteristics are defined in detail in Appendix B. P-values are provided in parentheses.

Variables	LMD^-	HVD^-	Words	WPS	Time Diff	Fund Flow	Fund Flow^{adj}	Fund Size	Fund Age	Exp. Ratio	Vola 12m	Return RP
LMD^-	1.000											
HVD^-	0.715	1.000										
	(0.000)											
Words	0.046	0.078	1.000									
	(0.000)	(0.000)										
WPS	-0.183	-0.188	-0.104	1.000								
	(0.000)	(0.000)	(0.000)									
Time Diff	0.008	-0.018	-0.083	0.069	1.000							
	(0.166)	(0.001)	(0.000)	(0.000)								
Fund Flow	-0.028	-0.027	-0.006	-0.003	0.004	1.000						
	(0.000)	(0.000)	(0.263)	(0.606)	(0.470)							
Fund Flow^{adj}	-0.029	-0.028	-0.008	-0.004	0.004	0.891	1.000					
	(0.000)	(0.000)	(0.164)	(0.465)	(0.490)	(0.000)						
Fund Size	-0.015	0.010	-0.002	-0.048	-0.157	-0.101	-0.100	1.000				
	(0.006)	(0.063)	(0.764)	(0.000)	(0.000)	(0.000)	(0.000)					
Fund Age	0.052	0.021	-0.002	-0.028	-0.105	-0.191	-0.190	0.436	1.000			
	(0.000)	(0.000)	(0.755)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)				
Exp. Ratio	-0.006	-0.017	0.018	-0.028	0.085	0.009	0.010	-0.400	-0.086	1.000		
	(0.287)	(0.003)	(0.001)	(0.000)	(0.000)	(0.078)	(0.064)	(0.000)	(0.000)			
Vola 12m	0.139	0.107	0.015	0.013	-0.018	-0.017	-0.014	-0.059	0.113	0.078	1.000	
	(0.000)	(0.000)	(0.006)	(0.015)	(0.001)	(0.001)	(0.006)	(0.000)	(0.000)	(0.000)		
Return RP	-0.183	-0.142	0.005	0.018	0.010	0.058	0.054	0.068	0.024	0.016	0.071	1.000
	(0.000)	(0.000)	(0.319)	(0.001)	(0.066)	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)	(0.000)	

Table 3: Determinants of Shareholder Letter Tone

This table reports regression analyses of shareholder letter tone on various fund characteristics. Tone is measured by the number of negative words according to the Loughran and McDonald (columns (1) and (3)) or the Harvard (columns (2) and (4)) negative word lists divided by the total number of words. The control variables are defined in detail in Appendix B. Columns (1) and (2) include ten dummy variables for the different investment objective categories. Columns (3) and (4) include fund fixed effects. All regressions include time-fixed effects for the month of the fiscal (half-) year end (Report Month) and for the month when a letter is filed with the SEC (Filing Month). Standard errors are clustered on the fund level. t statistics are provided in parentheses. $***$, $**$, and $*$ represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	LMD^-	HVD^-	LMD^-	HVD^-
	(1)	(2)	(3)	(4)
Return Reporting Period	-0.003***	-0.004***	-0.003***	-0.003***
	(-3.52)	(-3.03)	(-3.22)	(-2.82)
Flow Reporting Period	0.000	0.000	-0.001**	-0.000
	(0.91)	(0.66)	(-2.37)	(-0.77)
Volatility past 12 Months	0.012	0.006	-0.007	-0.011
	(1.48)	(0.62)	(-1.08)	(-1.27)
Fund Size	-0.000*	-0.000**	-0.000	-0.000
	(-1.78)	(-2.26)	(-0.06)	(-0.43)
Company Size	0.000***	0.001***	0.001***	0.001***
	(4.15)	(8.90)	(5.03)	(5.11)
Fund Age	0.000	-0.000	-0.001	-0.001
	(1.42)	(-0.43)	(-1.23)	(-1.42)
Expense Ratio	0.037	0.100**	-0.059	0.025
	(1.06)	(2.19)	(-1.14)	(0.36)
Δ Funds per Segment	0.000	-0.002	0.000	-0.000
	(0.19)	(-1.03)	(0.16)	(-0.27)
Constant	-0.053***	-0.116***	-0.023***	-0.061***
	(-4.11)	(-5.77)	(-2.79)	(-4.62)
Segment FE	Y	Y	N	N
Fund FE	N	N	Y	Y
Report Month FE	Y	Y	Y	Y
Filing Month FE	Y	Y	Y	Y
R^2	0.145	0.125	0.209	0.159
Observations	32,088	32,088	32,088	32,088

Table 4: Letter Tone and Investor Reactions - Monthly Flows

This table shows regressions of monthly fund flows on shareholder letter tone and various fund characteristics. The dependent variable in columns (1) and (2) is net fund flow in the month of the SEC filing. In columns (3) and (4) we replace flows of the filing month by flows in the subsequent month whenever the filing of the shareholder letter takes place after the 15^{th} calendar day. LMD^{-} (HVD^{-}) is the fraction of negative words in the shareholder letter based on the Loughran and McDonald (Harvard) negative word list. In Panel A the tone measure is LMD^{-} (columns (1) and (3)) and HVD^{-} (columns (2) and (4)). In Panel B we first orthogonalize LMD^{-} and HVD^{-} in a regression and then use the residual from that regression as adjusted tone measure. The adjusted tone regression includes the controls and fixed effects from Table 3 (columns (3) and (4)) and in addition the return rank (instead of the raw return), the squared return rank, the value-weighted return of the fund family, and the fund return between the fiscal (half-) year end and the filing date. All control variables are defined in detail in Appendix B. All regressions include fund fixed effects and time fixed effects for the month of the fiscal (half-) year end (Report Month) and for the month of the SEC filing (Filing Month). Standard errors are clustered on the fund level. t statistics are provided in parentheses. $***$, $**$, and $*$ represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 4: Letter Tone and Investor Reactions - Monthly Flows (cont'd)

Panel A: Unadjusted Tone				
	Flow Filing Month		Flow adj. Filing Month	
	(1)	(2)	(3)	(4)
LMD^{-}	-0.121***		-0.134***	
	(-3.01)		(-3.39)	
HVD^{-}		-0.058**		-0.072**
		(-1.98)		(-2.55)
Return Rank	0.005	0.005	0.009*	0.009*
	(0.92)	(0.94)	(1.65)	(1.67)
Return Rank Squared	0.015***	0.015***	0.010*	0.010*
	(2.73)	(2.73)	(1.84)	(1.83)
Fund Size	-0.012***	-0.012***	-0.012***	-0.012***
	(-9.41)	(-9.40)	(-9.23)	(-9.22)
Company Size	0.004***	0.004***	0.003***	0.003***
	(3.02)	(2.96)	(2.64)	(2.58)
Fund Age	-0.023***	-0.023***	-0.023***	-0.023***
	(-6.78)	(-6.78)	(-7.16)	(-7.15)
Expense Ratio	0.488	0.497	0.564*	0.575*
	(1.59)	(1.62)	(1.76)	(1.79)
Segment Flow	0.820***	0.819***	0.833***	0.831***
	(8.45)	(8.44)	7.84)	(7.83)
Constant	0.092	0.093	0.095**	0.094**
	(1.40)	(1.41)	(0.50)	(2.12)
Fund FE	Y	Y	Y	Y
Report Month FE	Y	Y	Y	Y
Filing Month FE	Y	Y	Y	Y
R^2	0.051	0.051	0.050	0.050
Observations	31,754	31,754	31,726	31,726

Table 4: Letter Tone and Investor Reactions - Monthly Flows (cont'd)

Panel B: Adjusted Tone				
	Flow Filing Month		Flow adj. Filing Month	
	(1)	(2)	(3)	(4)
$LMD^{-}_{adj.}$	-0.105**		-0.116***	
	(-2.52)		(-2.82)	
$HVD^{-}_{adj.}$		-0.049		-0.061**
		(-1.62)		(-2.11)
Return Rank	0.004	0.004	0.008	0.008
	(0.61)	(0.61)	(1.39)	(1.39)
Return Rank Squared	0.017***	0.017***	0.011*	0.011*
	(2.91)	(2.91)	(1.93)	(1.93)
Fund Size	-0.012***	-0.012***	-0.012***	-0.012***
	(-9.09)	(-9.08)	(-8.97)	(-8.97)
Company Size	0.004***	0.004***	0.003**	0.003**
	(2.73)	(2.72)	(2.30)	(2.29)
Fund Age	-0.023***	-0.023***	-0.023***	-0.023***
	(-6.41)	(-6.40)	(-6.76)	(-6.76)
Expense Ratio	0.632*	0.632*	0.667*	0.668*
	(1.80)	(1.80)	(1.79)	(1.79)
Segment Flow	0.918***	0.916***	0.922***	0.920***
	(8.91)	(8.90)	(8.10)	(8.08)
Constant	0.192***	0.192***	0.182***	0.182***
	(4.92)	(4.91)	(4.89)	(4.88)
Fund FE	Y	Y	Y	Y
Report Month FE	Y	Y	Y	Y
Filing Month FE	Y	Y	Y	Y
R^2	0.053	0.052	0.051	0.051
Observations	29,643	29,643	29,612	29,612

Table 5: Letter Tone and Monthly Fund Flows - Robustness

This table shows regressions of monthly fund flows on shareholder letter tone and various fund characteristics. The dependent variable in columns (1) and (2) is net fund flow in the month of the SEC filing. In columns (3) and (4) we replace flows of the filing month by flows in the subsequent month whenever the filing of the shareholder letter takes place after the 15^{th} calendar day. LMD^- (HVD^-) is the fraction of negative words in the shareholder letter based on the Loughran and McDonald (Harvard) negative word list. In Panel A the tone measure is LMD^- (columns (1) and (3)) and HVD^- (columns (2) and (4)). In Panel B we re-run the regression from Table 4 for different subsamples. In columns (1) and (3) ((2) and (4)) the sample period is from January 2006 to June 2009 (July 2009 to December 2012). The control variables are defined in detail in Appendix B. All regressions include fund fixed effects and time fixed effects for the month of the fiscal (half-) year end (Report Month) and for the month of the SEC filing (Filing Month). Standard errors are clustered on the fund level. t statistics are provided in parentheses. $***$, $**$, and $*$ represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Piece-wise Linear Performance Flow Relationship				
	Flow Filing Month		Flow adj. Filing Month	
	(1)	(2)	(3)	(4)
LMD^-	-0.141***		-0.152***	
	(-3.47)		(-3.84)	
HVD^-		-0.071**		-0.083***
		(-2.45)		(-3.02)
Return Quintile 1	0.027***	0.027***	0.030***	0.030***
	(2.67)	(2.68)	(2.93)	(2.94)
Return Quintiles 2 to 4	0.015***	0.015***	0.014***	0.014***
	(6.84)	(6.89)	(6.54)	(6.59)
Return Quintile 5	0.049***	0.049***	0.045***	0.045***
	(4.70)	(4.71)	(4.34)	(4.35)
Controls	Y	Y	Y	Y
R^2	0.050	0.050	0.050	0.049
Observations	32,139	32,139	32,107	32,107
Panel B: Subperiods				
	2006/01-2009/06	2009/07-2012/12	2006/01-2009/06	2009/07-2012/12
LMD^-	-0.194***	-0.111*	-0.213***	-0.131**
	(-3.30)	(-1.77)	(-3.68)	(-2.15)
Controls	Y	Y	Y	Y
R^2	0.081	0.046	0.076	0.047
Observations	16,216	15,538	16,201	15,525

Table 6: Temporal Dynamics

This table shows regressions of fund flows on shareholder letter tone and various fund characteristics. In Panels A and B, the dependent variables are daily net fund flows from t+1 to t+5 (columns (1) and (2)), from t+6 to t+10 (columns (3) and (4)), and from t+11 to t+15 (columns (5) and (6)), where t is the SEC filing date. LMD^- (HVD^-) is the fraction of negative words in the shareholder letter based on the Loughran and McDonald (Harvard) negative word list. In Panel A, the tone measure is LMD^- (columns (1), (3), and (5)) and HVD^- (columns (2), (4), and (6)). In Panel B we first orthogonalize LMD^- and HVD^- in a regression and then use the residual from that regression as adjusted tone measure. The adjusted tone regression includes the controls and fixed effects from Table 3 (columns (3) and (4)) and in addition the return rank (instead of the raw return), the squared return rank, the value-weighted return of the fund family, and the fund return between the fiscal (half-) year end and the filing SEC date. In Panels C and D, the dependent variable is the monthly net fund flow from one to five months after the SEC filing (columns (1) and (2)) or from six to eleven months after the SEC filing (columns (3) and (4)). In Panel C, tone is measured by LMD^- (columns (1) and (3)) and HVD^- (columns (2) and (4)). In Panel D, tone is measured by the adjusted LMD^- (columns (1) and (3)) and HVD^- (columns (2) and (4)). All control variables from Table 4 are always included in the regressions and defined in detail in Appendix B. All regressions include fund fixed effects and time fixed effects for the month of the fiscal (half-) year end (Report Month) and for the month of the SEC filing (Filing Month). Standard errors are clustered on the fund level. t statistics are provided in parentheses. $***$, $**$, and $*$ represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Tone and daily flows						
Daily flow from	t1-t5	t1-t5	t6-t10	t6-t10	t11-t15	t11-t15
	(1)	(2)	(3)	(4)	(5)	(6)
LMD^-	-0.026***		-0.020**		-0.006	
	(-2.81)		(-2.17)		(-0.64)	
HVD^-		-0.013*		-0.019**		-0.012
		(-1.75)		(-2.50)		(-1.56)
Controls	Y	Y	Y	Y	Y	Y
R^2	0.061	0.060	0.041	0.042	0.039	0.040
Observations	15,063	15,063	15,120	15,120	15,130	15,130

Table 6: Temporal Dynamics (cont'd)

Panel B: Adjusted Tone and daily flows						
Daily Flow from	t1-t5	t1-t5	t6-t10	t6-t10	t11-t15	t11-t15
	(1)	(2)	(3)	(4)	(5)	(6)
$LMD^{-}_{adj.}$	-0.028***		-0.019**		-0.005	
	(-2.92)		(-1.98)		(-0.54)	
$HVD^{-}_{adj.}$		-0.015**		-0.018**		-0.011
		(-2.00)		(-2.29)		(-1.33)
Controls	Y	Y	Y	Y	Y	Y
R^2	0.062	0.062	0.041	0.041	0.040	0.040
Observations	13,837	13,837	13,905	13,905	13,906	13,906
Panel C: Tone and monthly flows						
Monthly flow from	t1-t5	t1-t5	t6-t11	t6-t11		
	(1)	(2)	(3)	(4)		
LMD^{-}	-0.243*		0.007			
	(-1.93)		(0.05)			
HVD^{-}		-0.207**		0.111		
		(-2.22)		(1.00)		
Controls	Y	Y	Y	Y		
R^2	0.103	0.103	0.111	0.111		
Observations	30,806	30,806	28,303	28,303		
Panel D: Adjusted tone and monthly flows						
Monthly flow from	t1-t5	t1-t5	t6-t11	t6-t11		
	(1)	(2)	(3)	(4)		
$LMD^{-}_{adj.}$	-0.187		0.109			
	(-1.46)		(0.12)			
$HVD^{-}_{adj.}$		-0.161*		0.109		
		(-1.73)		(0.72)		
Controls	Y	Y	Y	Y		
R^2	0.103	0.103	0.141	0.141		
Observations	30,806	30,806	26,496	26,496		

Table 7: Writing Style and Investor Reactions

This table shows regressions of monthly fund flows on shareholder letter tone and various fund characteristics. The regressions correspond to those reported in Table 4. Additionally, we include a dummy variable to capture a fund letter's personal writing style. This dummy variable is equal to one if a letter is written in first-person singular or plural, and zero otherwise. We also include an interaction term of the fund's writing style dummy and its tone. "Team managed" is a dummy variable equal to one if a fund is managed by a team, and zero if it is single managed. All regressions include fund fixed effects and time fixed effects for the month of the fiscal (half-) year end (Report Month) and for the month of the SEC filing (Filing Month). Standard errors are clustered on the fund level. t statistics are provided in parentheses. $***$, $**$, and $*$ represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Unadjusted Tone				
	Flow Filing Month		Flow adj. Filing Month	
	(1)	(2)	(3)	(4)
LMD^-	-0.180***		-0.193***	
	(-3.45)		(-3.77)	
HVD^-		-0.094***		-0.104***
		(-2.67)		(-3.11)
Personal Writing Style	0.000	-0.001	-0.001	-0.002
	(0.09)	(0.54)	(-0.72)	(-0.89)
Personal x Tone	0.123*	0.090*	0.120*	0.076
	(1.92)	(1.81)	(1.90)	(1.57)
Team managed	0.002	0.002	0.002	0.002
	(1.41)	(1.34)	(1.35)	(1.27)
Controls	Y	Y	Y	Y
R^2	0.052	0.052	0.051	0.050
Observations	31,509	31,509	31,482	31,482
Panel B: Adjusted Tone				
	Flow Filing Month		Flow adj. Filing Month	
	(1)	(2)	(3)	(4)
LMD^-	-0.172***		-0.186***	
	(-2.87)		(-3.20)	
HVD^-		-0.094**		-0.098**
		(-2.35)		(-2.57)
Personal Writing Style	0.003***	0.003***	0.002	0.002
	(2.79)	(2.73)	(1.61)	(1.52)
Personal x Tone	0.137	0.109*	0.143*	0.085
	(1.57)	(1.76)	(1.67)	(1.43)
Team managed	0.002	0.002	0.002	0.002
	(1.48)	(1.434)	(1.41)	(1.35)
Controls	Y	Y	Y	Y
R^2	0.053	0.053	0.051	0.051
Observations	29,641	29,641	29,610	29,610

Table 8: Shareholder Letter Tone and Future Fund Performance

This table shows regressions of fund performance on shareholder letter tone and various fund characteristics. The dependent variable is the fund's return (1), the fund's CAPM 1-factor alpha (2), the fund's Fama and French 3-Factor-Model alpha (3), and the fund's Carhart 4-Factor-Model alpha (4). Performance is measured from one month after the SEC filing (t+1) to six months after the SEC filing (t+6). The alphas are estimated using daily fund returns over the previous twelve months (t-12 to t-1). LMD^- (HVD^-) is the fraction of negative words in the shareholder letter based on the Loughran and McDonald (Harvard) negative word list. In Panel A, the tone measure is LMD^-. In Panel B, the tone measure is HVD^-. All control variables are defined in detail in Appendix B. All regressions include fund fixed effects and time fixed effects for the month of the fiscal (half-) year end (Report Month) and for the month when the filing takes place (Filing Month). Standard errors are clustered on the fund level. t statistics are provided in parentheses. $***$, $**$, and $*$ represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 8: Shareholder Letter Tone and Future Fund Performance (cont'd)

Dependent Variable	Raw Return	1-Factor Alpha	3-Factor Alpha	4-Factor Alpha
	(1)	(2)	(3)	(4)
Panel A: LMD^-				
LMD^-	0.009	0.046	0.079*	0.054
	(0.19)	(1.05)	(1.65)	(1.10)
Fund Size	-0.020***	-0.015***	-0.011***	-0.011***
	(-16.34)	(-13.18)	(-10.12)	(-10.23)
Company Size	-0.000	-0.000	-0.001	-0.001
	(-0.25)	(-0.15)	(-0.86)	(-0.76)
Fund Age	0.017***	0.019***	0.010***	0.009**
	(5.10)	(5.32)	(2.63)	(2.56)
Expense Ratio	-0.085	0.109	0.155	0.001
	(-0.21)	(0.29)	(0.43)	(0.00)
Flow Reporting Period	-0.008***	-0.009***	-0.014***	-0.009***
	(-3.58)	(-3.59)	(-5.69)	(-3.90)
$Flow_{t+1,t+6}$	0.034****	0.041***	0.040***	0.033***
	(10.51)	(12.78)	(12.18)	(9.85)
Constant	-0.102*	-0.055	-0.004	-0.021
	(-1.90)	(-1.04)	(-0.07)	(-0.40)
R^2	0.857	0.208	0.192	0.188
Observations	30,662	30,660	30,660	30,660
Panel B: HVD^-				
HVD^-	0.010	0.046	0.066*	0.032
	(0.30)	(1.42)	(1.85)	(0.88)
Controls	Y	Y	Y	Y
R^2	0.857	0.208	0.192	0.188
Observations	30,662	30,660	30,660	30,660

Table 9: Letter Tone and Performance - Variations of the Tone Measures

This table shows regressions of fund performance on shareholder letter tone and various fund characteristics. The dependent variable is the fund's return (1), the fund's CAPM 1-factor alpha (2), the fund's Fama and French 3-Factor-Model alpha (3), and the fund's Carhart 4-Factor-Model alpha (4). Performance is measured from one month after the SEC filing (t+1) to six months after the SEC filing (t+6). The alphas are estimated based on coefficients obtained from a regression using daily fund returns over the previous twelve months (t-12 to t-1). LMD^- (HVD^-) is the fraction of negative words in the shareholder letter based on the Loughran and McDonald (Harvard) negative word list. We first orthogonalize LMD^- and HVD^- in a regression and then use the residual from that regression as adjusted tone measure in all Panels of this table. The adjusted tone regression includes the controls and fixed effects from Table 3 (columns (3) and (4)) and in addition the return rank (instead of the raw return), the squared return rank, the value-weighted return of the fund family, and the fund return between the fiscal (half-) year end and the filing date. In Panels A and C, the tone measure is adjusted LMD^- (adjusted HVD^-). In Panels C and D, we estimate the performance over the period from t+2 to t+7 whenever the filing of the shareholder letter takes place after the 15th calendar day. All control variables from Table 8 are included in the regressions and are defined in detail in Appendix B. All regressions include fund fixed effects and time fixed effects for the month of the fiscal (half-) year end (Report Month) and for the month of the SEC filing (Filing Month). Standard errors are clustered on the fund level. t statistics are provided in parentheses. $***$, $**$, and $*$ represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	Raw Return	1-Factor Alpha	3-Factor Alpha	4-Factor Alpha
	(1)	(2)	(3)	(4)
Panel A: adjusted tone				
$LMD^-_{adj.}$	-0.009	0.033	0.061	0.030
	(-0.17)	(0.71)	(1.22)	(0.58)
Controls	Y	Y	Y	Y
R^2	0.861	0.214	0.198	0.194
Observations	28,653	28,653	28,653	28,653
Panel B: adjusted tone				
$HVD^-_{adj.}$	0.008	0.041	0.055	0.028
	(0.23)	(1.25)	(1.52)	(0.74)
Controls	Y	Y	Y	Y
R^2	0.861	0.214	0.198	0.194
Observations	28,653	28,653	28,653	28,653

Table 9: Letter Tone and Performance - Variations of the Tone Measures (cont'd)

Panel C: adjusted tone and time				
$LMD^{-}_{adj.}$	-0.010	0.028	0.064	0.025
	(-0.21)	(0.61)	(1.25)	(0.48)
Controls	Y	Y	Y	Y
R^2	0.858	0.219	0.206	0.200
Observations	28,441	28,441	28,441	28,441
Panel D: adjusted tone and time				
$HVD^{-}_{adj.}$	0.007	0.039	0.058	0.023
	(0.19)	(1.15)	(1.56)	(0.59)
Controls	Y	Y	Y	Y
R^2	0.858	0.219	0.206	0.200
Observations	28,441	28,441	28,441	28,441

Table 10: Letter Tone and Performance - Variations of the Investment Horizon

This table shows regressions of fund performance on shareholder letter tone and various fund characteristics. The dependent variable is the fund's return (1), the fund's CAPM 1-factor alpha (2), the fund's Fama and French 3-Factor-Model alpha (3), and the fund's Carhart 4-Factor-Model alpha (4). In Panels A and B, performance is measured over one month after the filing (t+1). In Panels C and D, performance is measured from one month after the SEC filing (t+1) to three months after the SEC filing (t+3). The alphas are estimated based on coefficients obtained from a regression using daily fund returns over the previous twelve months (t-12 to t-1). LMD^- (HVD^-) is the fraction of negative words in the shareholder letter based on the Loughran and McDonald (Harvard) negative word list. We first orthogonalize LMD^- and HVD^- in a regression and then use the residual from that regression as adjusted tone measure in all Panels of this table. The adjusted tone regression includes the controls and fixed effects from Table 3 (columns (3) and (4)) and in addition the return rank (instead of the raw return), the squared return rank, the value-weighted return of the fund family, and the fund return between the fiscal (half-) year end and the SEC filing date. All control variables from Table 8 are included in the regressions and are defined in detail in Appendix B. Instead of $\text{Flow}_{t+1,t+6}$ we use Flow_{t+1} in Panels A and B and $\text{Flow}_{t+1,t+3}$ in Panels C and D. All regressions include fund fixed effects and time fixed effects for the month of the fiscal (half-) year end (Report Month) and for the month of the SEC filing (Filing Month). Standard errors are clustered on the fund level. t statistics are provided in parentheses. $***$, $**$, and $*$ represent statistical significance at the 1%, 5%, and 10% levels, respectively.

	Raw Return (1)	1-Factor Alpha (2)	3-Factor Alpha (3)	4-Factor Alpha (4)
Panel A: t+1				
$LMD^-_{adj.}$	0.002	0.009	0.035**	0.042***
	(0.11)	(0.56)	(2.15)	(2.67)
Controls	Y	Y	Y	Y
R^2	0.825	0.157	0.155	0.146
Observations	29,461	29,461	29,461	29,461
Panel B: t+1				
$HVD^-_{adj.}$	0.010	0.016	0.029**	0.032***
	(0.80)	(1.32)	(2.51)	(2.87)
Controls	Y	Y	Y	Y
R^2	0.825	0.158	0.155	0.147
Observations	29,461	29,461	29,461	29,461

Table 10: Letter Tone and Performance - Variations of the Investment Horizon (cont'd)

Panel C: t+1 to t+3				
$LMD^{-}_{adj.}$	0.014	0.019	0.034	0.025
	(0.42)	(0.61)	(1.04)	(0.79)
Controls	Y	Y	Y	Y
R^2	0.853	0.196	0.186	0.180
Observations	29,051	29,051	29,051	29,051
Panel D: t+1 to t+3				
$HVD^{-}_{adj.}$	0.034	0.037*	0.035	0.025
	(1.48)	(1.66)	(1.57)	(1.12)
Controls	Y	Y	Y	Y
R^2	0.853	0.196	0.186	0.180
Observations	29,051	29,051	29,051	29,051

Table 11: Letter Tone and Managerial Risk Taking

This table shows regressions of fund risk on shareholder letter tone and various fund characteristics. The dependent variable is the fund's total risk (columns (1) and (2)), the systematic risk (columns (3) and (4)), and the idiosyncratic risk (columns (5) and (6)). Total risk is the standard deviation of daily returns from one month after the SEC filing (t+1) to six months after the SEC filing (t+6). Systematic (idiosyncratic) risk is the market beta (standard deviation of residuals) obtained from estimating a Carhart 4-Factor-Model from t+1 to t+6 where t represents the SEC filing month. LMD^- (HVD^-) is the fraction of negative words in the shareholder letter based on the Loughran and McDonald (Harvard) negative word list. In Panel B, we first orthogonalize LMD^- and HVD^- in a regression and then use the residual from that regression as adjusted tone measure. The adjusted tone regression includes the controls and fixed effects from Table 3 (columns (3) and (4)) and in addition the return rank (instead of the raw return), the squared return rank, the value-weighted return of the fund family, and the fund return between the fiscal (half-) year end and the filing date. All control variables are defined in detail in Appendix B. All regressions include fund fixed effects and time fixed effects for the month of the fiscal (half-) year end (Report Month) and for the month of the SEC filing (Filing Month). Standard errors are clustered on the fund level. t statistics are provided in parentheses. $***$, $**$, and $*$ represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 11: Letter Tone and Managerial Risk Taking (cont'd)

	Total Risk		Systematic Risk		Idiosyncr. Risk	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Raw Tone, t+1 to t+6						
LMD^-	-0.003		-0.037		-0.004***	
	(-1.57)		(-0.47)		(-3.57)	
HVD^-		-0.002		0.024		-0.003***
		(-1.33)		(0.39)		(-3.27)
Fund Size	0.000*	0.000*	0.009***	0.009***	0.000***	0.000***
	(1.91)	(1.90)	(3.43)	(3.43)	(2.61)	(2.60)
Company Size	0.000**	0.000**	0.004	0.004	-0.000	-0.000
	(2.42)	(2.41)	(1.26)	(1.23)	(-0.39)	(-0.42)
Fund Age	-0.000*	-0.000*	-0.025***	-0.025***	-0.000**	-0.000**
	(-1.87)	(-1.87)	(-2.97)	(-2.96)	(-1.98)	(-1.98)
Expense Ratio	0.024	0.024	1.387*	1.388*	-0.005	-0.004
	(1.34)	(1.36)	(1.70)	(1.70)	(-0.39)	(-0.36)
Flow Reporting Period	0.000	0.000	-0.000	-0.000	-0.000	-0.000
	(0.20)	(0.22)	(-0.09)	(-0.09)	(-0.18)	(-0.13)
Return Reporting Period	0.001***	0.001***	0.054***	0.055***	0.000**	0.000**
	(3.47)	(3.48)	(3.57)	(3.58)	(2.40)	(2.41)
Constant	0.012***	0.012***	0.914***	0.916***	0.002*	0.002*
	(5.81)	(5.85)	(7.61)	(7.63)	(1.77)	(1.84)
R^2	0.889	0.889	0.068	0.068	0.464	0.464
Observations	31,173	31,173	31,173	31,173	31,173	31,173
Panel B: Adjusted Tone, t+1 to t+6						
$LMD^-_{adj.}$	-0.003		0.019		-0.004***	
	(-1.45)		(0.24)		(-3.41)	
$HVD^-_{adj.}$		-0.002		0.080		-0.003***
		(-1.12)		(1.28)		(-3.09)
Controls	Y	Y	Y	Y	Y	Y
R^2	0.892	0.892	0.073	0.073	0.466	0.466
Observations	29,092	29,092	29,092	29,092	29,092	29,092

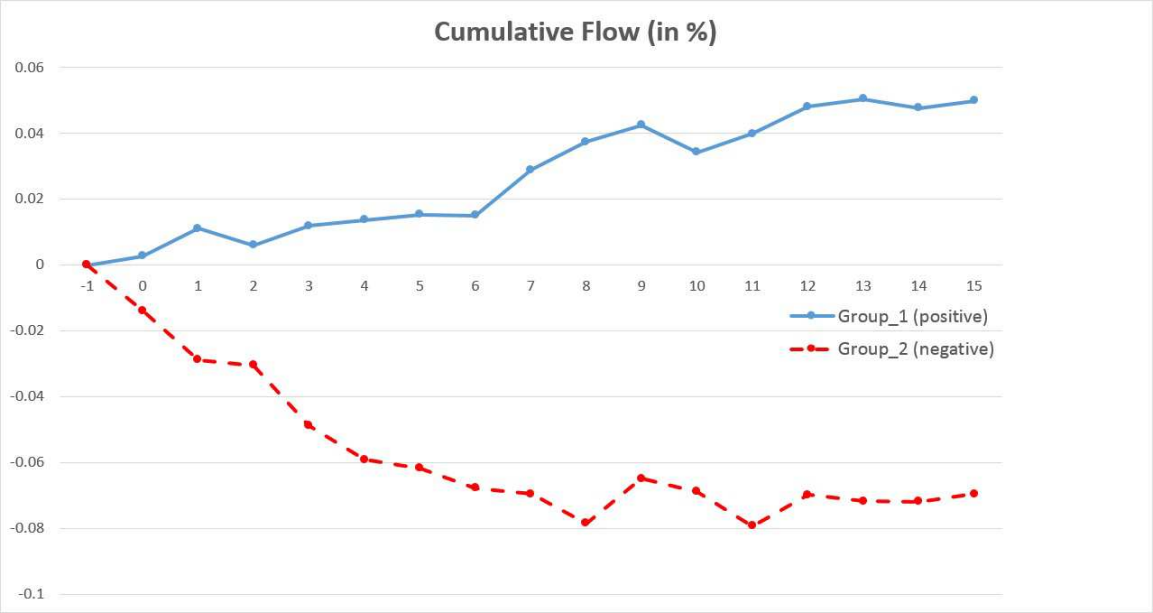
Table 12: Letter Tone and Managerial Risk Taking - Robustness

This table shows regressions of fund risk on shareholder letter tone and various fund characteristics. The dependent variable is total risk (columns (1) and (2)), systematic risk (columns (3) and (4)), and idiosyncratic risk (columns (5) and (6)). Total risk is the standard deviation of daily returns in the month after the SEC filing (t+1) (Panel A) and from one month after the SEC filing (t+1) to three months after the SEC filing (t+3) (Panel B). Systematic (idiosyncratic) risk is the market beta (standard deviation of residuals) obtained from estimating a Carhart 4-Factor-Model in t+1 (Panel A) or from t+1 to t+3 (Panel B). LMD^- (HVD^-) is the fraction of negative words in the shareholder letter based on the Loughran and McDonald (Harvard) negative word list. In this table we first orthogonalize LMD^- and HVD^- in a regression and then use the residual from that regression as adjusted tone measure. The adjusted tone regression includes the controls and fixed effects from Table 3 (columns (3) and (4)) and in addition the return rank (instead of the raw return), the squared return rank, the value-weighted return of the fund family, and the fund return between the fiscal (half-) year end and the SEC filing date. All control variables from Table 11 are included in the regressions and are defined in detail in Appendix B. All regressions include fund fixed effects and time fixed effects for the month of the fiscal (half-) year end (Report Month) and for the month of the SEC filing (Filing Month). Standard errors are clustered on the fund level. t statistics are provided in parentheses. $***$, $**$, and $*$ represent statistical significance at the 1%, 5%, and 10% levels, respectively.

	Total Risk		Systematic Risk		Idiosyncr. Risk	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Adjusted Tone, t+1						
$LMD^-_{adj.}$	-0.006***		-0.103		-0.005***	
	(-2.59)		(-0.70)		(-4.08)	
$HVD^-_{adj.}$		-0.003*		-0.063		-0.003***
		(-1.76)		(-0.56)		(-3.21)
Controls	Y	Y	Y	Y	Y	Y
R^2	0.879	0.879	0.106	0.106	0.376	0.376
Observations	29,596	29,596	29,596	29,596	29,596	29,596
Panel B: Adjusted Tone, t+1 to t+3						
$LMD^-_{adj.}$	-0.004*		-0.094		-0.003**	
	(-1.83)		(-0.96)		(-2.40)	
$HVD^-_{adj.}$		-0.002		0.066		-0.002**
		(-1.12)		(0.86)		(-2.12)
Controls	Y	Y	Y	Y	Y	Y
R^2	0.896	0.896	0.084	0.084	0.448	0.448
Observations	29,342	29,342	29,342	29,342	29,342	29,342

Figure 1: Cumulative daily flows after shareholder letter filing date

This figure shows the subsequent cumulative flows for up to 15 days after the filing date (day 0) of a shareholder letter separately for letters with positive (blue solid line) and negative (red dashed line) adjusted tone. Tone is measured by LMD^- which is the fraction of negative words in the shareholder letter based on the Loughran and McDonald negative word list. In this figure we orthogonalize LMD^- in a regression and then use the residual from that regression as adjusted tone measure. The adjusted tone regression includes the controls and fixed effects from Table 3 column (3) and in addition the return rank (instead of the raw return), the squared return rank, the value-weighted return of the fund family, and the fund return between the fiscal (half-) year end and the filing date. The two groups are obtained by a median split of the letters based on adjusted LMD^- tone.



Appendices

A Timing of N-CSR and N-CSRS Filings

	Report Date		Filing Date	
	Number	Percentage	Number	Percentage
January	1,748	3.5%	4,412	8.9%
February	2,678	5.4%	2,342	4.7%
March	5,685	11.5%	5,876	11.9%
April	6,504	13.2%	2,127	4.3%
May	1,855	3.8%	2,902	5.9%
June	6,496	13.2%	6,824	13.8%
July	1,770	3.6%	4,943	10.0%
August	2,671	5.4%	3,514	7.1%
September	5,724	11.6%	4,732	9.6%
October	5,984	12.1%	2,011	4.1%
November	1,718	3.5%	2,899	5.9%
December	6,555	13.3%	6,806	13.8%

B Variable description

This table briefly defines the main variables used in the empirical analysis. The data sources are:
(i) CRSP: CRSP Survivorship Bias Free Mutual Fund Database
(ii) SEC: Securities and Exchange Commission EDGAR Database
(iii) Estimated: Estimated by the authors
(iv) KF: Kenneth French Data Library
(v) MS: Morningstar Direct Database

Panel A: Main Dependent Variables

Variable Name	Description	Source
Fund Flow	Computed as $(TNA_{i,t} - TNA_{i,t-1})/TNA_{i,t-1} - r_{i,t}$ where $TNA_{i,t}$ denotes fund i's total net assets (TNA) in month t and r_t denotes fund i's return in month t as reported in CRSP. The merger correction proposed in Lou (2012) is applied.	CRSP, Estimated
Daily Fund Flow	Computed as the Dollar Flow on day t (Variable "Estimated Fund-Level Net Flow aggregated from share classes (daily)") divided by the total net assets on day t-1 (Morningstar variable "Fund Size aggregated from share classes (daily)").	MS, Estimated
1-Factor Alpha	Performance alpha from a market model Estimated based on one year of daily market returns. Market returns are from the Kenneth French data library.	CRSP, KF, Estimated
3-Factor Alpha	Performance alpha from a Fama-French 3-factor model Estimated based on one year of daily factor returns. Factor returns are for the market, HML and SMB factors from the Kenneth French data library.	CRSP, KF, Estimated
4-Factor Alpha	Performance alpha from a Fama-French 3-factor model augmented by the Carhart factor Estimated based on one year of daily factor returns. Factor returns are for the market, HML, SMB, and momentum factors from the Kenneth French data library.	CRSP, KF, Estimated
Total Risk	Standard deviation of daily returns. Depending on the regression, the variable is calculated in the month after the filing (t+1), one month after the filing (t+1) to three months after the filing (t+3), and one month after the filing (t+1) to six months after the filing (t+6).	CRSP, Estimated
Systematic Risk	Loading on the excess return of the market in the Carhart Four-Factor-Model. The estimation is based on daily fund returns. Depending on the specification, the estimation windows are the month after the filing (t+1), one month after the filing (t+1) to three months after the filing (t+3), and one month after the filing (t+1) to six months after the filing (t+6).	CRSP, KF, Estimated
Idiosyncratic Risk	A fund's unsystematic risk, Estimated as the standard deviation of the residual in the Carhart Four-Factor-Model. The estimation is based on daily fund returns. Depending on the specification, the estimation windows are the month after the filing (t+1), one month after the filing (t+1) to three months after the filing (t+3), and one month after the filing (t+1) to six months after the filing (t+6).	CRSP, KF, Estimated

Panel B: Main Independent Variable

Variable Name	Description	Source
LMD^-	Number of negative words according to the Loughran and McDonald negative word lists divided by the total number of words	SEC, Estimated
HVD^-	Number of negative words according to the Harvard IV-4 Psychosociological Dictionary negative word lists divided by the total number of words	SEC, Estimated
Adj. LMD^-	Residual of a regression of LMD^- on Flow Reporting Period, Fund Size, Company Size, Fund Age, Expense Ratio, Volatility over the past 12 Months, change in the number of funds per segment, Return Rank, Return Rank Squared, the value-weighted return of the fund family, and the fund return between the fiscal (half-) year end and the filing date. The regression also includes fund fixed effects and time fixed effects for the month of the fiscal (half-) year end (Report Month) and for the month of the SEC filing (Filing Month)	SEC, Estimated
Adj. HVD^-	Residual of a regression of HVD^- on Flow Reporting Period, Fund Size, Company Size, Fund Age, Expense Ratio, Volatility past 12 Months, change in the number of funds per segment, Return Rank, Return Rank Squared, the value-weighted return of the fund family, and the fund return between the fiscal (half-) year end and the filing date. The regression also includes fund fixed effects and time fixed effects for the month of the fiscal (half-) year end (Report Month) and for the month of the SEC filing (Filing Month)	SEC, Estimated

Panel C: Other Control Variables

Return Reporting Period	Return over the six months before fiscal (half-) year end.	CRSP
Return Rank	Performance rank of a fund based on its return over the six months before the fiscal (half-) year end relative to its market segment. This variable is bound between zero and one.	CRSP, Estimated
Return Rank Squared	Squared performance rank of a fund based on its return over the six months before the fiscal (half-) year end relative to its market segment. This variable is bound between zero and one.	CRSP, Estimated
Return Quintile 1	Computed as min(Return Rank; 0.2).	CRSP, Estimated
Return Quintiles 2 to 4	Computed as min(Return Rank-Return Quintile 1; 0.8).	CRSP, Estimated
Return Quintile 5	Computed as min(Return Rank-(Return Rank Quintile 1+ Return Rank Quintiles 2 to 4)).	CRSP, Estimated
Flow Reporting Period	Flow over the six months before fiscal (half-) year end.	CRSP, Estimated
Fund Size	Logarithm of a fund's total net assets.	CRSP
Company Size	Logarithm of a fund company's total net assets.	CRSP
Expense Ratio	A fund's annual expense ratio	CRSP
Fund Risk	A fund's annualized standard deviation based on twelve monthly fund returns.	CRSP, Estimated
Fund Age	Logarithm of a fund's age computed from the date a fund was first offered (variable $first\_offer\_dt$).	CRSP, Estimated
Segment Flow	Growth rate of the fund's segment due to inflows in percent. Calculated based on aggregation of individual fund growth rates.	CRSP, Estimated
Δ Funds per Segment	Change in the number of funds per market segment in a given month.	CRSP, Estimated

C Two Excerpts from Letters to Shareholders

"Dear Investor: Thank you for taking time to review the following discussions, from our experienced portfolio management team, of the fund reporting period ended understand and appreciate the challenges you have faced during this historic period, and share your concerns about the economy, the markets, and fund holdings. To help address these issues, I'd like to provide my perspective on how we have managed–and continue to manage–your investments in these uncertain times. As a company, American Century Investments is well positioned to deal with market turmoil. We are financially strong and privately held, which allows us to align our resources with your long-term investment interests. In addition, our actively managed, team-based approach allows our portfolio teams to identify attractive investment opportunities regardless of market conditions. Our seasoned investment professionals have substantial experience and have successfully navigated previous market crises. These portfolio managers and analysts continue to use a team approach and follow disciplined investment processes designed to produce the best possible long-term results for you. For example, our equity investment teams are working closely with our fixed income group to monitor and assess credit crisis developments. The fixed income team anticipated dislocation in the credit markets and–through its disciplined processes and teamwork–helped reduce our exposure to investments that suffered substantial losses. How soon a sustainable recovery will occur is uncertain. But I am certain of this: Since 1958, we've demonstrated a consistent ability to execute solid, long-term investment strategies and the discipline to remain focused during times of volatility or shifts in the markets. We've stayed true to our principles, especially our belief that your success is the ultimate measure of our success. Thank you for your continued confidence in us." (**AMERICAN CENTURY QUANTITATIVE EQUITY FUNDS, INC. Small Company Fund, December 2008, previous 6-month return: —33.84%**)

"DEAR FELLOW SHAREHOLDERS OF VIRTUS MUTUAL FUNDS: The past year was unprecedented in the financial markets and a sobering period for most investors. And that may be the most flattering description we can give Economies across the globe were buffeted by the severe credit contraction that destabilized financial markets and led to bank closures, failures of financial services companies, and massive government bailouts. Corporations suffered from tightened commercial lending and a sharp drop in consumer demand, and responded with predictable cutbacks in employment and capital spending. The financial markets reflected the scope of these global economic challenges. The Dow Jones Industrial Average was down 31.9 percent in 2008, its worst year since 1931. The Standard & Poor's 500 index dropped 22 percent in the fourth quarter alone, and 37 percent for the full year - its worst performance since 1937. The NASDAQ market had its worst year ever. Investor confidence has been a major casualty of this financial turmoil. Many investors, paralyzed by the constant flow of negative news, have reacted to this extraordinary market volatility by deviating from their long-term financial plans. But just as it is unrealistic to base investment expectations on the market's supercharged returns from much of the 1980s and 1990s, it may be equally misleading to assume that future long-term results will track the market's recent dismal performance. While no one can predict the future, it is important to remember that the market has generally rewarded investors over the long term. Since 1927, stocks have returned 9.6 percent on average annually, and that includes the steep decline experienced through the end of last year. Although the near-term outlook continues to be filled with uncertainties, we believe that investors with long-term goals - such as saving for a child's college education or preparing for one's own comfortable retirement - are best served by structuring and modifying their investment program with an eye to the long-term, rather than giving disproportionate weight to the short-term fluctuations in the marketplace. We strongly recommend that you review your portfolio with your financial planner or representative to ensure that it matches your current long-term objectives and your tolerance for risk. (...) On behalf of the entire team at Virtus Investment Partners, and the investment professionals at our affiliated managers and subadvisers, I thank you for entrusting your assets to us." (**VIRTUS INSIGHT TRUST DISCIPLINED SMALL-CAP OPPORTUNITY FUND, December 2008, previous 6-month return: –33.22%**)