

Mutual Fund Shareholder Letters: Flows, Performance, and Managerial Behavior

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Fund companies regularly send shareholder letters to their investors. We use textual analysis to investigate whether these letters matter for fund flows and whether they predict performance and investment styles. We find that fund investors react to the writing style of shareholder letters; a less negative tone and a personal writing style lead to higher net flows. Thus, fund companies can use shareholder letters as a strategic instrument to avoid redemptions. Letter writing style is informative for fund investors as it predicts changes in fund managers' risk taking and investment styles. A personal writing style additionally predicts better fund performance.

JEL-Classification Codes: G23, G11

Keywords: Fund Flows, Textual Analysis, Shareholder Letters, Investment Styles, Form N-CSR, Fund Performance

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Abstract

Fund companies regularly send shareholder letters to their investors. We use textual analysis to investigate whether these letters matter for fund flows and whether they predict performance and investment styles. We find that fund investors react to the writing style of shareholder letters; a less negative tone and a personal writing style lead to higher net flows. Thus, fund companies can use shareholder letters as a strategic instrument to avoid redemptions. Letter writing style is informative for fund investors as it predicts changes in fund managers' risk taking and investment styles. A personal writing style additionally predicts better fund performance.

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1 Introduction

Shareholder letters are part of the semi-annual shareholder reports (Form N-CSR and N-CSRS filings) that registered management investment companies file with the SEC and send to their investors. In these letters, fund managers discuss the general economic environment and outlook, as well as individual stocks that they hold 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 relevant. The writing style of these letters varies greatly from very technical to almost literary.¹ In this paper, we examine whether fund investors are influenced by the writing style of these letters and whether they are predictive of future fund performance and investment styles.

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)), the writing style of mutual funds' shareholder letters has not caught any attention in academic studies so far. This is surprising, given that, according to the Investment Company Institute, in 2014 more than 40% of all households in the US own mutual funds and receive shareholder letters.² They are sent out regularly to investors and are frequently quoted in the business press.³ It thus seems plausible that the writing style of these letters has an impact on investment decisions and capital flows.

If shareholder letters indeed influence mutual fund investors' investment decisions, they are an important strategic tool for fund companies to manage mutual fund flows, specifically for fund companies that are concerned with redemptions forcing them to engage in fire sales

¹For example, Wintergreen Advisers' shareholder letters are written by a co-founder with a college minor in English language resulting in a letter full of "inspirational quotes". See <http://online.barrons.com/article/SB50001424053111904009804579248280874966654.html>

²For a detailed view on the Investment Company Institute's annual statistics on households' mutual fund holdings, see <http://www.ici.org/research/stats>

³For example, Morningstar offered a list of great shareholder letters to its readers: http://news.morningstar.com/articlenet/article.aspx?id=4793&_QSBPA=Y

(e.g., Coval and Stafford (2007)). Shareholder letters can potentially help fund companies to influence investor behavior—and specifically to avoid redemptions—as they allow them to directly address a large number of investors and explain the fund’s development in more detail. Furthermore, if shareholder letter writing style is predictive of fund managers’ behavior and performance, this would be of foremost importance for fund investors interested in learning about the funds’ future investment styles and performance.

In this paper, we use a dictionary-based computer linguistic program to measure two important dimensions of the writing style of shareholder letters. Specifically, we classify the tone of a letter based on its negativity and search for personal pronouns to determine whether it is written in a personal or impersonal (i.e., more technical and legalese) style. Our sample comprises all actively managed US open-end equity funds between 2006 and 2013 that publish a shareholder letter (which is the case for almost all funds).

We find that mutual fund investors react strongly to the tone of shareholder letters. We document robust evidence that flows are significantly lower the more negatively a shareholder letter is written. Specifically, a one standard deviation increase in negativity leads to a nearly 3 million USD reduction of subsequent monthly fund flows which is equivalent to a decrease in fund size by 0.2%. This is a substantial effect given that fund growth due to flows is only 0.17% on average per month during our sample period. Thus, a more positive tone can more than double inflows in the respective month for the average fund in our sample. Our findings are obtained after controlling for variables that might influence letter tone and at the same time investor flows such as past fund performance and after including fund fixed effects.

We also find that fund flows are higher if the letter is written in a personal rather than in an impersonal writing style. This result indicates that investors prefer being addressed more personally and is consistent with results from the communications literature (e.g., Crow (1988), and Benson and Kessler (1987)).

For a subset of funds in our sample, we have daily flow data available and show that the tone induced flow reaction is observed immediately following the publication of a shareholder letter and lasts for about 5 days. The immediate flow reaction following right after the date letters are sent out suggests a causal interpretation of the impact of letter tone on flows. Furthermore, we find the flow reaction to be persistent as it does not reverse over the long run.

The impact of letter tone on net-flows is mainly observed for underperforming funds and after periods of poor market returns, when the industry usually experiences outflows. This finding suggests that a letter with a more optimistic tone can prevent existing investors from redeeming their fund shares. Furthermore, we find some evidence that a personal writing style can reduce the adverse impact of negatively written letters on flows. This result is consistent with investors' being more willing to accept negative news if somebody takes responsibility. 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

We also examine whether letter tone contains any information about the future behavior of the fund manager or about future fund performance. We find that more negative shareholder letters do not predict worse future fund performance.⁵ However, there is some evidence that a personal writing style predicts better future fund performance.

Finally, we analyze whether letter writing style is also informative about fund managers' risk-taking behavior and other dimensions of a fund's investment style. Arguing that negative tone is associated with a generally more negative and more risk averse attitude of a

⁴see <http://online.barrons.com/articles/SB5000142405311904009804579248280874966654>.

⁵An alternative interpretation would be that negative tone predicts a worse performance that would have occurred if flows had not reacted, but an equilibrium mechanism as described in Berk and Green (2004) leads investors to withdraw exactly so much money from the fund that performance does not change. However, in our later performance regressions we control for the direct impact of flows and fund size. Furthermore, the equilibrium mechanism described in Berk and Green (2004) has been questioned recently (e.g., Reuter and Zitzewitz (2015)).

fund manager, one might expect that negative tone predicts less future risk-taking of fund managers.

We indeed find that a negative tone strongly predicts less idiosyncratic risk-taking of fund managers, indicating that they make fewer benchmark-deviating bets after writing a negative shareholder letter. This finding is consistent with Scharfstein and Stein (1990) who show that more risk-averse managers tend to herd more. Furthermore, we find consistent evidence that a negative tone leads to lower tracking error, less extreme style bets, and lower industry concentration of funds. Generally, these results indicate that letter tone allows investors to draw conclusions about the current attitude of fund managers and eventually their future investment behavior.

We also examine the impact of a personal writing style on risk taking and investment styles. Our results indicate managers writing in a more personal style tend to take more idiosyncratic risks and have higher tracking errors in the future. Furthermore, there is also some evidence that they tend to follow more extreme investment styles. These findings suggest that managers writing in a more personal style tend to be more daring in the future.

Our results have important implications for mutual fund companies and fund investors. They underline the importance of verbal information that fund companies provide to their investors. A significant number of investors seems to react strongly to the way in which a shareholder letter is written. Given that these letters are legally regulated to portray a fair and truthful picture of the current economic situation of a fund, fund companies are restricted in the wording used in these letters. This explains why not all shareholder letters are always written in an extremely optimistic and positive tone as funds might otherwise face a significant litigation risk. Nevertheless, it might pay for fund companies to devote time to a careful creation of these letters. This is particularly true in difficult times as we find that net-flows are mainly influenced by a letter's writing style during periods of poor market returns when funds are typically facing outflows. Our results show that letter tone

can be an efficient method to keep investors from redeeming fund shares, i.e., it is an efficient tool for asset retention. Our findings also show that fund letter tone can be informative for the future investment style and performance and should thus be taken into account by fund investors.

Our paper contributes to several strands of the literature. We closely relate to the large literature on the determinants of mutual fund flows. Many papers examine the impact of past performance on fund flows (e.g., Sirri and Tufano (1998)). Ivkovic and Weisbenner (2009) find that investors (irrationally) chase funds that outperformed in the past although there is barely 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) and Gallaher, Kaniel, and Starks (2015)), a fund's media coverage (Kaniel, Starks, and Vasudevan (2007)), and fund manager characteristics (e.g., Wermers (2003), Kumar, Niessen-Ruenzi, and Spalt (2015), and Niessen-Ruenzi and Ruenzi (2018)). Solomon, Soltes, and Sosyura (2014) examine the impact of the media coverage of fund holdings on investor flows. We contribute to this literature by showing for the first time that writing styles of mutual funds' shareholder letters, i.e., their negativity and whether they are written in a personal or impersonal style, have a significant impact on mutual fund flows.

We also contribute to the literature trying to predict managerial behavior or performance based on textual disclosures. Regarding performance of firms, Davis, Piger, and Sedor (2012) and Davis, Ge, Matsumoto, and Zhang (2015) provide evidence that an optimistic tone of earnings press releases and of earnings conference calls, respectively, predicts better returns on assets among publicly traded firms.⁶ Ours is the first paper to provide evidence that fund investors can infer future fund performance from fund managers' writing style.

⁶Huang, Teoh, and Zhang (2014) question these findings.

Regarding mutual fund managers, we are not aware of any study that examines the predictive power of narrative statements on fund managers' investment styles. We show that the tone of shareholder letters is informative about future risk-taking and investment behavior of fund managers and should thus be taken into consideration by potential investors.

Methodologically, our paper contributes to the recently burgeoning literature on textual analysis in finance. There are several papers implying that investors react to soft information in financial texts. For example, Bodnaruk, Loughran, and McDonald (2015) develop a text-based measure of financial constraints based on 10-K filings and find that it predicts subsequent liquidity events, while Loughran and McDonald (2013) analyze the language in form S-1 disclosures and their impact on IPO first-day returns, offer-price revisions, and volatility. Furthermore, Loughran and McDonald (2014a) suggest a new measure for the complexity of 10-K filings.

Interestingly, the interpretation of investors' reaction to financial texts differs greatly across papers. For example, Tetlock, Saar-Tsechansky, and Macskassy (2008) find that price reactions to firm specific news reports depend on the negativity of these reports and interpret this reaction as rational given that linguistic content in these news stories predicts the firm's earnings. Tetlock (2007) and Garcia (2013) also find that high media pessimism leads to downward pressure on market prices. However, Tetlock (2007) observes a reversion to fundamentals later on and thus interprets the initial price reaction as being driven by (irrational) sentiment. A similar result is observed by Tetlock (2011) who shows that individual investors in particular trade on stale news which leads to price pressure and subsequent return reversals. Most importantly, all previous studies do not directly observe investor behavior but infer investor reactions from price responses to news reports. Our paper is the first to directly examine investor reactions to textual disclosures in a mutual fund setting. The mutual fund industry offers an ideal new test setting for the impact of textual disclosures on investment decisions and for the predictive power of those disclosures for managerial behavior for several reasons: (1) the letters are contained in annual and

semi-annual reports that are automatically sent to a large number of investors with known timing, (2) quantitative information relevant to investors when making investment decisions (e.g., fund performance, stock market performance) can exactly be controlled for, i.e., the soft- and hard information content can be separated, (3) the predictive content of writing styles for managerial behavior (e.g., investment styles) and performance can be easily quantified, (4) investor behavior can be directly observed at the fund level because information on net-flows is available, while all other existing studies on the impact of textual information on investor behavior have to rely on price reactions, and (5) the letters are prepared by individuals directly involved with the management of the fund (and not external parties as is the case when analyzing, e.g., newspaper article tone as in Tetlock (2007)), i.e., they are informative about the opinion and mood of these individuals and eventually their behavior.

Interpreting our findings results in a nuanced picture: On the one hand, our results support the view that shareholder letter tone as measured by its negativity can influence (irrational) sentiment among mutual fund investors, since we do not find any predictive power of this information for future fund performance. On the other hand, investors seem to react rationally to a personal writing style of a letter by investing more in funds that write in such a style and these funds subsequently outperform. These findings suggest to carefully distinguish different dimensions of writing styles when analyzing investor reactions to textual information.

2 Data and summary statistics

2.1 Shareholder letters

We obtain mutual funds' shareholder letters from 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 shareholders at least semiannually. These reports include information on the portfolio

composition, a statement of income, and a balance sheet. Most importantly in our context, they usually include a letter directly addressing the fund’s shareholders. These letters vary largely in terms of their content. For example, they can discuss the fund’s performance relative to a benchmark, give reasons for 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. Sometimes they even talk about global developments such as wars and other international conflicts. Inclusion of such a letter, classified as “narrative disclosure” by the SEC, is voluntary but must not contain any untrue statements and has to be certified by the mutual fund’s principal executive and financial officers.⁷

Since shareholder letters are not mandatory, there is no clear-cut section or item of the 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.⁸ 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.

Since the automatic extraction results in some implausibly short or long letters we drop letters with a length below (above) the 5th (95th) percentile which corresponds to letters with less than 103 (more than 4,622) words. Furthermore, we exclude letters with more than 39.17 words per sentence (WPS) on average which corresponds to the 95th WPS percentile. After these filters, we find a shareholder letter for 78% of the N-CSR and N-CSRS filings.⁹

⁷Certification requirements are described in detail by the SEC; see <https://www.sec.gov/rules/final/34-47262.htm>.

⁸Common phrases include, for example, “Dear Shareholders”, “Dear Investors”, “Sincerely”, or “Yours Truly”.

⁹In Table IA-1 in the Internet Appendix, we examine whether there are differences in net-flows or absolute flows following the filing of reports that do or do not contain a letter. We find no evidence for this to be the case.

We also collect information on who signs the shareholder letter. In most of the cases (37.4%), the president of the fund company signs the shareholder letter, while fund managers sign in 10.0% of the cases. Other people in charge of signing shareholder letters are Chief Executive Officers (15.2%), and Chairmen (16.4%). It is also possible that two or more individuals sign a letter, or that one individual signs a letter in multiple roles (for example, “CEO and Chairman”). More details on who signs the shareholder letter are provided in Appendix A. Although the president or some other senior executive often signs the letter for legal reasons, it is plausible to assume that the letters are typically prepared by the manager in charge of the respective fund.

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., 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. We extract both dates from the N-CSR filings. The distribution of financial reports over calendar months is displayed in Appendix B. While most reports are filed in March (13.6%) and December (12.8%), report dates are fairly evenly distributed across the year otherwise. The fewest reports are filed in October (3.3%).

According to SEC regulations, the maximum time span between the day on which the fund company sends off a fund’s financial report to investors and the day on which the letter is filed with the SEC is 10 days. As fund companies have no incentives to postpone the filing of their reports with the SEC after they sent them out to shareholders, it is likely that this typically happens on the same day. Thus, the filing date can be assumed to be equivalent (or very close) to the day on which the fund’s shareholders also receive the respective reports. Our later analysis of daily fund flows in section 4.2.1 supports this assumption.

After extracting the shareholder letters from the N-CSR filings, 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. We rely on the “bag of words” technique following the approach of prior papers on textual analysis in finance (Tetlock (2007), Tetlock, Saar-Tsechansky, and Macskassy (2008), Loughran and McDonald (2011)). These papers collect words that are used to express negativity and combine these words in a dictionary which is then used to systematically measure the tone of a text. We use the Loughran and McDonald (2011) negativity dictionary to measure the tone of shareholder letters.¹⁰ We focus on dictionaries capturing negative tone as previous work has shown that negations are quite frequent around positive statements, which makes it much harder to precisely capture positive tone with textual analysis (see, e.g., Loughran and McDonald (2011), Loughran and McDonald (2015)).

We compute a tone measure for each shareholder letter based on the fraction of negative words a letter contains. This negativity measure is labeled as LMD^- . For each letter, we also compute two language complexity measures. First, we compute the logarithm of the average number of words per sentence, $LN(WPS)$, arguing that longer sentences are more difficult to read. Second, we compute the logarithm of a letter’s total number of words, $LN(Words)$, to measure the overall length of a letter.¹¹ All variables are described in more detail in Appendix C.

We also classify each letter according to whether it is written in a personal writing style or not. Letters are classified as being written in personal writing style if they are written in first person singular or plural. Specifically, we require that the fraction of first person singular pronouns (I, me, myself, my, mine) is above the median across all fund letters or that the fraction of first person plural pronouns (we, our, ours, ourselves) is above

¹⁰In Panel A of Table 4, we show that our results remain statistically significant if we use alternative word lists such as the Harvard IV-4 Psychosociological Dictionary, which was developed to measure negative emotions in a general context.

¹¹We do not focus on other text complexity measures suggested in the previous literature like the Fog index (see, e.g., Li (2008)), as Loughran and McDonald (2014a) show that these measures do a poor job in capturing complexity in a financial disclosure context. They suggest using simple metrics based on document length instead.

the median. 52.1% of all letters are written in a personal writing style according to this definition.

2.2 Mutual fund data

We use mutual fund data from 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.

To merge shareholder letters with 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.¹² Over the period from 2006 to 2013, we identify 6,653 fund portfolios in CRSP/MF Links. Excluding funds with missing ticker symbols reduces the number of funds to 6,328. After matching CRSP and SEC data via ticker symbol, we conduct several plausibility checks to make sure that SEC Series ID and CRSP WFICN indeed correspond to the same fund portfolio.¹³ Overall, 85.80% of funds in the CRSP/MFLinks universe can be matched to SEC N-CSR filings. Balanced funds, money market funds, fixed income funds, index funds, and exchange traded funds are dropped from the sample. We focus on actively managed 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 are below one million USD. Our final sample comprises 3,527 matched open-end equity funds from 2006 to 2013.

In some of our later analysis we also look at daily flows. We use Morningstar data on daily TNAs and returns in these cases, as CRSP does not provide daily TNAs of funds.

¹²More details on the matching process are provided in Appendix D.

¹³For 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.

2.3 Summary statistics

Summary statistics on all major variables are presented in Table 1. In Panel A, we present summary statistics on the shareholder letters extracted from the N-CSR filings. The mean percentage of negative words in a given shareholder letter according to the LMD^- dictionary amounts to 1.96%.¹⁴ The fraction of negative words varies substantially between virtually zero and more than 5%.

To get a better impression on how negativity varies over our sample period, Figure 1 plots average negativity according to our tone measure as well as lagged 6-month S&P 500 returns. Visual inspection shows that negativity and lagged stock market returns are negatively related: After periods of low stock market returns, negativity increases substantially, while the opposite holds for periods after high stock market returns. These patterns show that our tone measure performs well in capturing the general tendency of market conditions, i.e., when S&P 500 returns turn sharply negative, the tone of the subsequent letters is more negative as well. At the same time, the correlation between letter tone and market returns mandates to control for the general market environment and we do so in our later analysis by including various sets of time-fixed effects.

The average shareholder letter includes about 933 words and an average of 25.5 words per sentence. With respect to the two dates that are included in the N-CSR filings, we find that there are on average 64 days time difference between reporting period end date (report date) and the filing date for a given shareholder letter.

In Panel B, we present summary statistics on fund characteristics. The sample includes all funds to which we are able to link a shareholder letter. We find that average monthly flows amount to 0.172%. The average monthly flow of less than 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

¹⁴These numbers are comparable to Loughran and McDonald (2011) who find an average negativity of 1.57% for 10-K filings.

of the mutual fund industry during recent years that comprise our sample period (see, e.g., Barber, Huang, and Odean (2016), Berk and van Binsbergen (2016), and Sialm, Starks, and Zhang (2015)). The average fund in our sample has total net assets of 1,392 million USD, is nearly 14 years old, and has an annual expense ratio of about 1.27%. Average fund returns over the reporting periods of six months amount to 4.0%. The rest of the table shows summary statistics on variables capturing the risk-taking behavior and investment strategies of fund managers that we later analyze and that are described in detail in Appendix C. Table IA-2 in the Internet Appendix shows pairwise correlations between our main variables of interest.

3 Determinants of shareholder letters' writing style

We start our empirical investigation by looking at the determinants of different dimensions of a shareholder letters' writing style. After reading some randomly selected shareholder letters we find that they largely differ in their writing styles. For example, some letters use a very personal writing style while others are written in a more impersonal style. Furthermore, 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. They also differ largely with respect to their tone, i.e., whether they are written in a more negative or more positive tone.

Appendix E presents reports from two funds as examples. Words that are included in the negativity dictionary are printed in bold font. Both funds had significant negative returns over the 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 very similar return of -33% . In the filing month of the shareholder letters, the American Century fund faced only 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. Interestingly, 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) makes several positive and encouraging statements, e.g., that “we are financially strong” and that the fund is expected to “identify attractive investment opportunities regardless of market conditions”. In contrast, the second letter (Virtus) contains more negative statements. 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 by the negativity measure which is 2.78% for the first letter, and 4.33% for the second letter, respectively. Compared to the average negativity of all fund letters in the same month, which amounts to 2.84%, the first shareholder letter is slightly less pessimistic than the average, while the second letter is much more pessimistic. We conjecture that the first fund manager will find it easier to avoid redemptions than the latter.

To investigate the determinants of a shareholder letter’s writing style formally, we conduct a multivariate analysis where we use our tone measure, LMD^- , and our personal writing style dummy, respectively, as dependent variable and then relate them to past performance as well as several fund and fund company characteristics. To take into account that some fund managers might write in a generally more positive and optimistic tone or always tend to write in a more personal style, we include fund fixed effects in all regressions. Thus, any effect we find is purely driven by within-fund variation of letter writing style. In addition, we also include time fixed effects to control for the overall performance of equity markets and general time trends in writing style. 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 the writing style 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 economic conditions at the moment the report is actually filed. This distinction is important, as for example a very

negative market return after the reporting period end but before the filing date, i.e., in the period during which the letter is actually written, might well have an impact on the tone of the letter, too. Furthermore, we also include individual fund returns in the first month after the reporting period end date, Return_{m+1} , as well as in the second month up to the filing date, $\text{Return}_{m+2,fm}$. Standard errors are double-clustered at the fund and time dimension.

Results on the determinants of shareholder letter tone are presented in Table 2. In the first column, we find that fund returns over the reporting period are significantly negatively related to tone, i.e., a higher fund return leads to significantly fewer negative words. This finding illustrates that funds do not simply always write extremely positive letters irrespective of how the fund actually performed. Otherwise, fund investors might perceive fund managers to be less trustworthy and Guiso, Sapienza, and Zingales (2008) show that trust generally is an important determinant of investment decisions. Furthermore, regulation prescribes fund managers to portray a fair and truthful picture of the fund's situation.

While expected, this finding also shows that the tone measure, LMD^- , actually does seem to do a good job of capturing performance-induced differences in letter writing style. There also is a negative impact of flows during the reporting period on the tone of shareholder letters, suggesting that if a fund receives relatively high flows the tone of the letter becomes less negative - even after controlling for past performance. This result is consistent with letter writers feeling more confident and eventually writing more positive prose about a fund if the fund recently experienced large inflows. However, the impact is only significant at the 10% level. Fund volatility and size of the fund or of the fund family do not have a significant impact on letter tone. We also include a fund's age, its expense ratio, and the growth rate of its segment to analyze whether more established funds, more expensive funds, or funds in a growing market segment tend to be written about more positively; we generally do not find any significant impact. We also do not find a significant impact of fund returns between a fund's report date and the date it is filed with the SEC on the tone of a shareholder letter. The main impact on negativity comes from individual fund

returns over the reporting period, highlighting the importance of carefully controlling for these variables in our following analysis of the impact of tone on fund flows. The impact of the same variables on personal writing style is presented in the second column. The only significant coefficient estimate is for the impact of fund age, indicating that older funds are less likely to use a personal writing style.

4 The impact of shareholder letter writing styles on fund flows

In the following, we investigate whether mutual fund investors are sensitive to variations in writing styles and eventually base their investment decisions on the way in which fund companies communicate with them. In section 4.1, we look at the reaction of monthly flows to letter tone measured by its negativity. In Section 4.2, we examine the temporal dynamics of this relationship in more detail. In section 4.3, we investigate the impact of a more versus less personal writing style on mutual fund flows.

4.1 Shareholder letter tone and fund 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, correctly specifying the time structure in our empirical model is thus very important. In our main specification, 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 files the letter with the SEC before and including day 15 of a given month. If a fund files 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 .¹⁵ This specification helps

¹⁵In Table IA-3 in the Internet Appendix, we alternatively relate fund flows in month t (irrespective of when in month t a letter is filed) to the tone of a shareholder letter filed with the SEC in the same month

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 after they receive and read it, or not at all.¹⁶

The dependent variable in our main regressions is monthly fund flows winsorized at the top and bottom 1%. Flows are adjusted for fund mergers as in Lou (2012). We relate fund flows to our negativity measure, LMD^- , and a set of controls: various papers show that past performance ranks have a positive and convex impact on inflows (e.g., Sirri and Tufano (1998)). Thus, we control for past performance in all regressions. We also include lagged fund size, lagged company size, fund age, and the fund's expense ratio. Furthermore, we add the logarithm of the number of words a letter contains as well as the logarithm of the number of words per sentence as language complexity measures and control for the number of days between the shareholder letter's reporting and filing date. Finally, we include flows of new money into the whole segment of the fund. Standard errors are clustered two-dimensionally at the fund and time (i.e., filing month) dimension.¹⁷

The regressions are estimated with fund, report month, and filing month fixed effects. The inclusion of fund fixed effects takes care of the possibility that letters about some funds are always written in a certain style. Thus, our identification comes from within fund time-series variation in the tone of the shareholder letter. Results are reported in Table 3.

In columns (1) and (3), we relate fund flows to our raw tone measures, i.e., the fraction of negative words that are included in a shareholder letter according the Loughran and McDonald (2011) dictionary, LMD^- . We find that fund flows are significantly negatively related to the negativity of a shareholder letter, i.e., the more negative the tone of a letter, the lower its subsequent flows. This result is statistically significant at the 1% level. The

and our results remain statistically significant. The drawback of this approach is that funds filing their shareholder letters with the SEC at the very end of month t are less likely to experience the complete flow effect within the same month.

¹⁶In our later analysis in section 4.2.1, we investigate daily fund flows that circumvent the problem of properly defining a time structure based on monthly data as described above. However, daily flows are only available for a subsample of funds and a shorter time period.

¹⁷For detailed definitions of all control variables, see Appendix C.

impact of letter tone on flows is also economically meaningful: Comparing the average fund from the top decile of letter tone to the average fund from the bottom decile of letter tone shows that the latter receives monthly flows that are by 10.154 million USD lower. This is equivalent to a growth rate which is by 0.71 percentage points lower. Similarly, a one standard deviation increase in the fraction of negative words according to the LMD⁻ dictionary leads to flows in the subsequent month which are 2.95 million USD lower for a fund of average size which is equivalent to a reduction in the growth rate of 0.21 percentage points. Given that the average fund in our sample grows by less than 0.2 percent per month (see Table 1, Panel B), this effect is economically meaningful. Since the decision to send out shareholder letters is typically made at the fund family level, these numbers suggest that fund families could avoid a potentially large amount of redemptions by devoting more attention to how these letters are written. The average fund family in our sample holds 31 funds. If such a family decreased the fraction of negative words by one standard deviation, flows in the family's funds would be about 91 million USD higher.

Our previous results in Table 2 show that shareholder letters tend to be more positive after good fund performance. In addition, fund flows also predict the tone of a shareholder letter. Thus, one concern regarding our result could be 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 our flow regressions from Table 3 do control for the impact of the variables that had an impact on tone in Table 2. Nevertheless, to further rule out this explanation, we re-run our main regression using an orthogonalized measure of a shareholder letter's negativity. That is, we first run a multivariate regression similar to the specification presented in Table 2 where the negativity measure is the dependent variable.¹⁸ From these regressions, we obtain the residuals as our orthogonalized measure of a letter's negativity, which we label as LMD_{adj}^- . We then use this orthogonalized tone measure as independent variable in our main flow

¹⁸We follow the specification in Table 2 but for reasons of consistency with the specification in Table 3 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 value-weighted return. None of these modifications affects our results.

regressions. Results are presented in columns (2) and (4) of Table 3. They portray a picture consistent with our earlier results. We still observe a significantly negative coefficient of shareholder letter tone on mutual fund flows for both negativity measures. Results are only slightly weaker, but still meaningful in economic and statistical terms.

As letter tone is driven by individual fund performance (see Table 2) and performance is a key driver of fund inflows (e.g., Sirri and Tufano (1998)), it is crucial to carefully control for the impact of past performance on flows. In columns (1) and (2), we therefore include the fund's return rank and squared return rank within its investment objective. Return ranks are based on fund returns over the shareholder letter's reporting period, i.e., the six months before the report date. Results confirm the positive and convex performance flow relation for the monthly level which was found in earlier studies for a yearly frequency (e.g., Sirri and Tufano (1998)). In columns (3) and (4), we check the stability of our results when using an alternative specification to control for past performance. Specifically, we replace the linear and squared performance rank by three piecewise-linear regression coefficients which allow us to separately estimate the impact of performance on flows for the bottom, the three middle, and the top quintile of past performance (as in Sirri and Tufano (1998)). We find a significant impact of performance within all three segments and the impact is weakest for the middle three quintiles and strongest in the top quintile.¹⁹

With respect to our other control variables, we observe a negative impact of fund size, fund age, and fund risk on fund flows, while segment flows have a significantly positive impact on fund flows. Overall, results on control variables are broadly in line with the previous literature.

In the next step, we conduct several robustness checks. Results are presented in Table 4. For brevity, we only report the coefficients on negativity and on those control variables that are newly added to the baseline specification displayed in columns (1) and (2) of Table 3.

¹⁹The convexity is less pronounced as compared to studies like Sirri and Tufano (1998) that focus on earlier sample periods, but very similar to the shape of the performance-flow relationship documented in studies focusing on more recent sample periods (e.g., Sialm, Starks, and Zhang (2015)).

In the first two columns of Panel A in Table 4, we use an alternative tone measure based on the Harvard IV-4 Psychosociological Dictionary as in Tetlock (2007). Unlike the dictionary we use in our main analysis, this dictionary was not designed to capture negative tone in financial texts, but in a general context. The results we obtain are significant but somewhat weaker than in Table 3. This finding supports the argument of Loughran and McDonald (2011) that dictionaries specifically designed to capture tone in financial contexts are more appropriate than general negativity dictionaries.

In the next two columns we follow Garcia (2013) and Solomon, Soltés, and Sosyura (2014) and use an alternative tone measure, LMD^{+-} , defined as the fraction of positive minus the fraction of negative words according to the Loughran and McDonald (2011) dictionaries. As this measure captures positive tone relative to negative tone (rather than negative tone only, as our previous measures do), we expect a positive impact on flows. We indeed find a strong positive impact of the LMD^{+-} measure on flows using the raw as well as the orthogonalized LMD^{+-} measure. The coefficient is always statistically significant at the 1%-level. However, as Loughran and McDonald (2015) caution against the use of net tone measures like LMD^{+-} , we stick to our standard negativity measure in the following analyses.

Finally, if investors read shareholder letters on a regular basis, they might be particularly sensitive to changes in tone. Therefore, as an alternative specification, in the last three columns of Panel A we use the change in negativity as an explanatory variable for fund flows. Results are based on the same regression specification as in the first columns but do not include fund fixed effects. Instead, they include the lagged dependent variable. We still observe a significantly negative impact of letter tone on mutual fund flows for all three tone measures, LMD^- , HVD^- , and, LMD^{+-} .

In Panel B, we present results from additional robustness tests. In columns (1) and (2), we control for the fact that a shareholder letter can be written on more than one fund at the same time. Thus, we also include the logarithm of the number of funds covered

by a shareholder letter. The results still show a significant impact of our raw as well as the orthogonalized negativity measure on fund flows. Furthermore, the number of funds covered in a letter has a negative impact on flows, suggesting that fund investors dislike getting relatively unspecific reports for a larger number of funds rather than a report more focused on the specific fund they invested in.

In columns (3) and (4) of Panel B, we exclude shareholder letters where a manager change took place during the reporting period or up to three months after the reporting period. If a manager change occurred before the shareholder letter was filed, the letter could have been written by the new fund manager and differences in writing style or the manager change per se might induce subsequent changes in fund flows. Results show that coefficients on negativity substantially increase (in absolute terms) from -0.167 to -0.206 (-0.135 to -0.169) for raw (orthogonalized) tone if manager changes are excluded from the sample. This finding might be due to the fact that investors have more difficulties in interpreting the writing style of a new manager, or because manager changes per se cause noise in estimating the letter tone-flow relationship.

According to Garcia (2013), investors' general sensitivity to news is most pronounced during difficult times. Therefore, in columns (5) through (8) of Panel B, we split the sample according to past fund performance. This allows us to examine whether fund investors react more strongly to shareholder letters after their fund performed poorly. We find that the negative impact of shareholder letter tone on fund flows is indeed much more pronounced for funds with below median performance than for funds with above median performance over the reporting period.²⁰ This finding has two implications: first, as mutual funds are more likely to face outflows after bad performance, a less negative tone in bad times can stop investors from withdrawing money. Second, as only existing fund shareholders can sell shares, it is plausible that our result is driven by this group of investors (rather than by

²⁰In table IA-4 in the Internet Appendix, we show that this result is similar if we condition on the stock market return instead of the funds' performance to classify good and bad times.

new investors that might have searched for and read the respective shareholder letter).²¹ Generally, these findings show that shareholder letters can play an important role in asset retention.²²

In columns (9) and (10) we replace the linear and squared performance rank by the past raw return and the past CAPM alpha instead. We focus on the CAPM alpha (rather than multi-factor alphas), as Berk and van Binsbergen (2016) show that this measure is the most relevant performance measure for mutual fund investors when making investment decisions. Both performance measures have a highly significant positive impact on flows. More importantly in our context, the impact of negativity remains significantly negative at the 1% level for LMD^- and at the 5% level for LMD_{adj}^- . The size of the coefficients is very similar to the one in our baseline specifications, showing that our results on the dependence of flows on letter tone are not driven by the specific way in which we model the impact of past performance on flows.

4.2 Temporal dynamics: How long does the effect last?

In this section, we analyze 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 short-term analysis of how daily fund flows react to shareholder letters after the filing date (section 4.2.1). We then conduct a long-term analysis of flows over several months after the filing of a shareholder letter (section 4.2.2). The short-term analysis 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

²¹As there are no data on separate in- and outflows on a high frequency, we cannot test these implications explicitly.

²²Many asset managers do not seem to be aware of this mechanism as a recent Cerulli survey shows: “(...) asset managers are failing to communicate their investment philosophy to buyers, an omission that is especially costly during short-term underperformance when a deep understanding of the managers’ process can help retain the client,” (Barbara Wall, Cerulli).

from section 4.1, that flows react very rapidly to tone. This setting also helps us to identify the causal impact of letter tone more clearly in an event-study-like setting. The long-term analysis addresses the question of whether the tone-driven flow effects reverse over time or whether the lower flows to funds with more negative letters lead to a persistent difference of assets under management.

4.2.1 Short-term reaction based on daily flow data

While CRSP only contains monthly TNA data, a proxy for daily flows can be calculated based on daily TNA and return data provided in the Morningstar database. Daily flow data for most funds (4,375 funds or 61.84% of funds in Morningstar with information on daily flows) become broadly available in Morningstar in 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.

Figure 2 shows 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. Visual inspection shows a strong divergence of flows during the first few days. Funds with above-median negativity face strong outflows, while funds with below-median negativity show no significant flow reaction. The strongest reaction for the more negatively written letters is observed during the first 5 days. Afterwards, the difference in cumulative flows only slightly increases further, which 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 for the first five 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 Table 5.

We use the orthogonalized tone measures as our main independent variable. Results 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 and the coefficient is statistically significant at the 5% level. We still observe a negative flow reaction for the subsequent days, i.e., days 6 to 10 and days 11 to 15 after the filing date, but coefficients are not statistically significant and decrease in economic terms. These results confirm the general patterns from Figure 2 and show that most of the flow reaction occurs immediately after the filing date, supporting a causal link between letter tone and flow reactions.

4.2.2 Long-term reaction of fund flows to shareholder letters

In the next step, we investigate the reaction of flows to letter tone for non-overlapping long-term horizons from one month after the filing to five months after the filing (i.e., before the next semi-annual N-CSR report is published) and from months 6 to 11 after the filing (including the next N-CSR report), respectively.

Results in column (1) of Table 5 show a significant impact of negativity on flows within the first five months after the filing date. Looking at months 6 to 11 after the filing (in column (2)), we find an insignificant and small negative coefficient, confirming that there is no subsequent offsetting long-term flow effect in opposite direction. This finding shows that from the point of view of the fund company, it is important to carefully crafting shareholder letters as tone induced flow effects lead to permanently higher assets under management and eventually higher fee income.

Our results hitherto raise the question why fund letters are not always written in an extremely positive style. In this context, it is important to note that all of our regressions include fund fixed effects, i.e., the effects we document are driven by within-fund variation in letter tone, and it seems very unlikely that a fund can write letters that continuously sound more positive over time. Our results on the impact of past performance on letter tone

(see Table 2) clearly show that letter tone does reflect how the fund performed. Otherwise, the discussion would probably not appear credible to investors. Furthermore, the N-CSR filing (of which the fund letter is a part) needs to be signed and the signee certifies that “this report does not contain any untrue statement of a material fact”.²³ Thus, fund companies might face litigation risk if they always write extremely positive letters. In a corporate context, Rogers, van Buskirk, and Zechman (2011) show that overly optimistic tone in earnings announcements can indeed increase litigation risk for companies.

4.3 Personal writing style and fund flows

In this section, we investigate whether mutual fund investors also react to other dimensions of a shareholder letter’s writing style in addition to its negativity, particularly focusing on personal writing styles. While some shareholder letters are written in an impersonal style with rather bureaucratic and legalese expressions using a lot of passive constructions, others are written in very personal language. Some researchers argue that readers might have a preference for either a personal or impersonal writing style (e.g., Chartprasert (1993)). Furthermore, in October 1998, the SEC implemented a rule requiring firms to use plain English—which emphasizes the use of personal pronouns (see section 6 of the SEC’s ‘A Plain English Handbook’, Securities and Exchange Commission (1998))—in their prospectus filings. The rule is supposed to increase investors’ ability to read and understand corporate disclosures. Subsequent research has shown that managers changed stylistic components of 10-K filings in response to the new rule (Loughran and McDonald (2014b)).

Thus, it is possible that mutual fund investors judge the content of a shareholder letter differently if it is written in a personal style that conveys the impression that the letter writer is directly talking to the investor. To investigate whether personal writing styles

²³See, the form provided by the SEC for the filing of the N-CSR: <https://www.sec.gov/about/forms/formn-csr.pdf>.

matter for mutual fund flows, we re-run our main flow regression from column (2) in Table 3 and include a personal writing style dummy variable (defined above in section 2.1).

Shareholder letters of team managed funds are slightly more likely to be written in a personal writing style (53.06%) than the letters from single managed funds (49.57%). Thus, to make sure that we are not just capturing differences in flows that arise due to the management structure of a fund (Massa, Reuter, and Zitzewitz (2010), Baer, Kempf, and Ruenzi (2011)), we also include a dummy variable indicating whether a fund is managed by a team. Results are presented in Table 6.

In column (1), we only include the personal writing style dummy variable and find that it is significantly positively related to future fund flows. The coefficient estimate implies that a letter with a personal writing style attracts net-flows that are by 0.22% higher than letters with an impersonal tone. Given that the average fund during our sample period only grows by 0.17% per month this is again an economically meaningful effect. However, the coefficient is only significant at the 10% level (t -statistic: 1.93). This finding suggests that shareholders prefer a personal writing style which might convey the impression that the fund manager personally takes responsibility for the fund's performance. Our finding is also consistent with Massa, Reuter, and Zitzewitz (2010) who point out that investors prefer a named individual to be associated with a financial product and that the media and investors prefer investments that come with plausible stories about their performance.

In column (2), we add our orthogonalized negativity measure in addition to the personal writing style dummy variable. Results show that negativity still leads to significantly lower fund flows, while a personal writing style leads to somewhat higher fund flows. Finally, in column (3), we include an interaction term of the personal writing style dummy and the tone measure to investigate whether a personal writing style can mitigate the negative impact of shareholder letter tone on fund flows, i.e., investors react less negatively to a letter with a negative tone if it is written in a personal style. As the previous literature in communications points out, communication appears more honest and responsive to most

readers, if it is written in plain English and a personal writing style (Crow (1988), and Benson and Kessler (1987)). Thus, investors might interpret a personal writing style in a negative letter as evidence that somebody takes responsibility and is honestly telling them the truth - and show appreciation of this by not withdrawing money. Consistent with this idea, we find that the interaction term of the personal writing style dummy and the tone measure is positive and large, alleviating the negative impact of tone by nearly 80%. However, the effect is not statistically significant at conventional levels as long as we use our conservative approach of double-clustering standard errors two dimensionally at the fund and time dimension.²⁴

Overall, the findings on personal writing style show that they have a mildly positive impact on investor behavior. Thus, our results also imply that it is a good idea for funds to follow the SEC suggestions to use personal pronouns to ease readability of textual disclosures.

5 Are shareholder letters predictive of fund performance?

The results in the previous section clearly show that mutual fund investors do indeed react to the way in which shareholder letters are written. However, at this point it is still an open question whether the writing styles of shareholder letters are informative and should be taken into account by mutual fund investors when making their investment decisions. Thus, we now investigate the predictive power of shareholder letters for future fund performance.

We relate various performance measures of a fund as dependent variable to the lagged writing styles of the letter as captured by the orthogonalized LMD²⁵ negativity measure and the personal writing style dummy of the previous shareholder letter as well as control variables. As performance measures, we use the 6-month performance over the period starting with the month after the filing month, i.e., from $t+1$ to $t+6$, based on (1) raw returns,

²⁴The coefficient is significant at the 10% level if we cluster standard errors at the fund dimension only.

²⁵Using raw tone instead does not affect our main result (see table IA-5 in the Internet Appendix).

(2) the CAPM 1-factor alpha, (3) the Fama and French (1993) 3-factor alpha, and the Carhart (1997) 4-factor alpha.²⁶ For example, if a fund files a shareholder letter in January 2010, we define performance over the period February 2010 to July 2010 (that is, until the next shareholder letter is sent out). As control variables we include fund size, family size, a fund's expense ratio and fund age. We further include language complexity measures as well as the time difference between a letter's report date and filing date and control for the impact of flows during the reporting period to which the letter refers. To capture any impact that tone-induced flows might have on performance, we also include contemporaneous flows over the performance measurement period. Finally, we include report month and filing month fixed effects as well as fund fixed effects. The latter control for the impact of all non-time-varying individual fund characteristics on performance, i.e., any potential cross-sectional effects are filtered out. Standard errors are double-clustered at the fund and time dimension. Results are presented in Table 7.

Coefficient estimates for the impact of negativity on future performance in columns (1) through (4) are all insignificant. This shows that the observed pattern of investors retaining their shares in funds with less negative letter tone is not concentrated on funds with superior performance. However, at the same time these funds also do not underperform subsequently.

In contrast, a personal writing style seems to have some predictive power for future fund performance.²⁷ Specifically, we find a significantly positive impact of a personal writing style on raw returns (column (1)). The effect is statistically significant at the 5% level and also economically meaningful: funds with letters written in a more personal style outperform by 0.31% over the following six months (0.63% p.a.). This finding suggests that managers might be more optimistic when they use a personal writing style due to positive information they obtained about the future prospects of their fund or that they put in more effort to perform

²⁶Note that examining excess returns over the market return would be 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.

²⁷In tables IA-6 and IA-7 in the Internet Appendix, we present results of regressions where we only include either negativity or the personal writing style dummy (instead of both as in Table 7). Results are very similar.

well after taking responsibility by writing in such a style. We will explore this possibility by looking at the way in which fund managers manage their funds in more detail in section 6.

We obtain similar results if performance is measured based on the CAPM 1-factor. The effect is somewhat weaker for the Fama and French (1993) 3-factor alpha and particularly for the Carhart (1997) 4-factor alpha, where the coefficient is still positive but not significant at conventional levels (*t*-statistic of 1.59). However, the latter result is less relevant in the context of mutual fund investors: Recent evidence convincingly shows that, for fund investors, the CAPM 1-factor alpha is the most important performance metric and that they do not take into account exposures to factors other than the market factor when making their investment decisions (see Barber, Huang, and Odean (2016) and Berk and van Binsbergen (2016)).

With respect to control variables, we find that fund 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 over the reporting period have a negative impact. The latter finding can be explained by flow-induced liquidity trading leading to inferior stock picks (Alexander, Cici, and Gibson (2007)). The coefficient estimate for the impact of contemporaneous flows is significantly positive. This effect can be explained by flows reacting to short-term performance within the same six month period. The other control variables show no significant impact on performance.²⁸

While a personal writing style seems to convey at least some fundamental information about future fund performance that investors rationally react upon by investing more in funds using such a style, our earlier finding that shareholders invest less in a fund if the tone of the fund's shareholder letter is more negative cannot be rationalized based on the performance results in this section.

²⁸Expense 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 expense ratios on performance in Table 7.

6 Are shareholder letters predictive of manager behavior?

We now examine whether shareholder letters also offer insights into the future investment behavior of mutual fund managers. Such predictive power of writing styles would be helpful for investors to learn about the way in which they can expect their funds to be managed. Specifically, we investigate whether the writing style of shareholder letter predicts fund managers' risk-taking behavior (section 6.1) and whether it signals changes in managers' investment styles (section 6.2).

6.1 Writing style and managerial risk taking

We start by analyzing whether the tone of a shareholder letter as measured by its negativity predicts mutual fund managers' risk-taking behavior. We conjecture that the tone in which a letter is written proxies for pessimism of the manager. The previous literature suggests that pessimism is linked to higher risk aversion (Eisenberg, Baron, and Seligman (1998) and Campbell, Gallmeyer, Johnson, Rutherford, and Stanley (2011)). If a fund manager uses a more negative tone, we thus expect her to be more pessimistic and less willing to take risk, i.e., we hypothesize that a negative tone of a shareholder letter predicts less risk-taking of the fund manager. Furthermore, Scharfstein and Stein (1990) show that risk averse managers herd more towards the market, i.e., we expect low levels of idiosyncratic risk taking if letter tone is more negative.

In our empirical model, we relate managerial risk-taking to the tone of the last preceding shareholder letter. As dependent variables we use three proxies for fund manager risk taking measured over the six month period starting one month after the filing month: the fund's 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 from the same model. We include various fund and fund company characteristics as

control variables. We again control for the funds' management structure by adding a team dummy as management structure can impact fund risk (Baer, Kempf, and Ruenzi (2011)). Furthermore, we also include flows and past performance during the reporting period. It is important to control for past performance, as the realized performance in the last period might lead to a change in managerial behavior because of strategic risk-taking incentives (see, e.g., Brown, Harlow, and Starks (1996)).

All regressions include the same time fixed and fund fixed effects as our previous regressions and standard errors are again double-clustered at the fund and time dimension. Results are presented in Table 8.

We find a negative coefficient estimate for the impact of negativity on all risk measures. However, the estimates for the impact of negativity on total fund risk and systematic risk are not significant at conventional levels (columns (1) to (4)). For idiosyncratic risk (columns (5) and (6)), we find a highly significantly negative coefficient, i.e., a high negativity score of a shareholder letter predicts significantly less idiosyncratic risk taking in the subsequent six months. The effect is statistically significant at the 1% level. This finding suggests that fund managers deviate from the market 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 (Scharfstein and Stein (1990)).

To examine whether a personal writing style is also informative for future risk taking behavior, in columns (2), (4), and (6), we include our personal writing style dummy as additional explanatory variable.²⁹ We observe that a personal writing style indeed has some predictive power for managerial risk taking: While the impact of the personal writing style dummy variable is insignificant for total fund risk (column (2)), we find that it has a weak negative impact on systematic risk, which is significant at the 10% level (column (4)). Most importantly, we find evidence that fund managers take significantly more idiosyncratic risk if the shareholder letter is written in a personal writing style (column (6)). Particularly

²⁹Table IA-8 in the Internet Appendix shows that our results are stable if we analyze regressions where we only include the personal writing style dummy (but not negativity).

the latter result is in line with evidence from the psychology literature suggesting that an individual's linguistic style provides a meaningful way to predict behavior (e.g., Pennebaker and King (1999)).³⁰ Taken together, our findings suggest that managers seem to be more confident in their investment decisions if they choose a more personal writing style. As a result, fund managers take more idiosyncratic bets.

6.2 Writing style and investment styles

In this section, we investigate whether shareholder letter writing styles predict managerial investment styles other than risk-taking. Specifically, in the following we analyze a fund's tracking error, style extremity, and industry concentration as additional dimensions of managerial behavior.

Our previous result that managers' idiosyncratic risk taking can be predicted based on writing styles suggests that they alter their active deviations from benchmarks. Thus, in columns (1) and (2) of Table 9, we investigate whether shareholder letter negativity and a personal writing style predict changes in a fund's tracking error. A fund's tracking error regarding its benchmark is obtained from Petajisto (2013).³¹ We use the same regression specification as in Table 8 and standard errors are again double-clustered at the fund and time dimension. Results show that a more negative tone also leads to a lower tracking error, and thus less deviation from the fund's declared benchmark. The coefficient on the orthogonalized negativity measure is negative and significant at the 5% level. At the same time, a personal writing style is associated with a significantly higher future tracking error.³² These results are in line with our findings on changes in idiosyncratic risk taking in the previous section.

³⁰In a corporate setting, Chatterjee and Hambrick (2007) show that the use of personal language by CEOs is associated with more risk taking.

³¹These data are available from the author for the period until September 2009 only.

³²Table IA-9 in the Internet Appendix shows that our results are also robust if we only include the personal writing style dummy (but not negativity) in our regressions.

We conjecture that funds with higher tracking error also follow more unconventional investment styles. Thus, we investigate whether writing styles predict a fund's style extremity. We focus on the most important investment styles size, book-to-market, and momentum and follow Baer, Kempf, and Ruenzi (2011) by computing the deviations of a fund's factor-weightings with respect to the three style factors SMB, HML, and MOM from the average across all funds in the same segment and year. A higher style extremity value of a fund with respect to a style factor corresponds to a more extreme factor weighting on the respective style factor, i.e., to a more extreme style of this fund as compared to the average fund in its segment. We define the style extremity measure at the fund level as the average of the deviations across the three style factors. A fund with average style extremity has, by construction, a style extremity measure of one.³³

Results in columns (3) and (4) show that a negative shareholder letter tone indeed predicts lower future style extremity. The coefficient on the negativity measure is significantly negative in both specifications. Again, a personal writing style predicts the opposite, i.e., the fund manager will engage in more extreme style bets in the future.

Finally, using MF Links, we combine the CRSP mutual fund data with the holdings data from Thomson Reuters to calculate a fund's industry concentration. We follow the definition of Kacperczyk, Sialm, and Zheng (2005) and measure industry concentration as the fund's squared deviation of the portfolio weights of a given industry compared to the weight of that industry in the market. The holdings data from Thomson Reuters are only available to us until March 2012 which considerably reduces the number of observations available for this analysis. Results in columns (5) and (6) show that a negative shareholder letter tone predicts less deviations of a fund's industry weights from the market. However, the effect is only significant at the 10% level. A personal writing style is not significantly related to a fund's industry concentration.

³³For details on the variable construction, see Panel A in Appendix C.

7 Conclusion

This paper investigates whether the writing styles of shareholder letters affect mutual fund investor behavior and whether they are predictive of future performance and managerial behavior. Our results, based on a large and comprehensive sample of actively managed US equity funds, show that mutual fund investors indeed react to the writing style of shareholder letters. Specifically, we find strong evidence that a more negative tone of these letters leads to lower fund flows in the future. We also provide evidence that a personal writing style is positively related to fund flows. These findings suggest that mutual fund investors pay close attention to the content of shareholder letters, i.e., they take the tone of these letters into account when making their investment decisions. This effect is particularly pronounced after periods of poor performance. Consequently, fund companies can use shareholder letters as a strategic instrument to avoid redemptions.

While legal regulations prevent that all shareholder letters are written in a very positive language, we can only speculate why the use of a more personal language has not been exploited by fund companies to a greater extent so far. This is surprising given that the SEC, in an effort to promote the use of plain English, explicitly suggests doing so. Possibly, fund companies are simply not aware of the positive effect of a personal writing style on fund flows due to the lack of clear empirical evidence based on textual analysis.

Our paper also shows that textual disclosures are informative of managers' future performance and investment behavior: we document that a less negative and a more personal writing style indicate managerial optimism and are predictive of more daring investment styles and less herding as reflected in higher idiosyncratic risk, higher tracking errors, more pronounced style extremity, and stronger industry concentration of funds. Furthermore, there is some evidence that a more personal writing style predicts better fund performance.

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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 fraction of negative words according to the Loughran and McDonald (2011) (LMD^-) negativity dictionary in a given letter. Complexity 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 C. The sample includes all US open-end equity funds with CRSP and SEC data. The sample period is from 2006 to 2013.

Variable	mean	sd	p50	p1	p99	N
Panel A: Shareholder letters						
LMD ⁻ (%)	1.955	1.235	1.820	0.000	5.420	36,245
Number of Words	933.464	786.923	646	118	3859	36,245
Words per Sentence (WPS)	25.475	4.52	25.02	16.67	37.60	36,245
Time Difference	64.075	5.475	65.00	47.00	72.00	36,245
Personal Style	0.521	0.500	1	0	1	36,245
Panel B: Fund characteristics						
Fund Flow (%)	0.172	6.206	-0.471	-17.619	28.580	35,733
Fund Size	1392.013	5897.623	232.600	2.800	20273.500	36,245
Fund Size (ln)	5.430	1.915	5.449	1.030	9.917	36,245
Fund Age	13.904	11.896	11.417	0.583	68.417	35,996
Fund Age (ln)	4.811	0.860	4.927	2.079	6.712	35,996
Expense Ratio (%)	1.266	0.440	1.231	0.205	2.690	34,874
Fund Risk	0.049	0.025	0.045	0.012	0.128	35,749
Return Reporting Period	0.040	0.166	0.059	-0.443	0.444	35,395
Tracking Error	0.061	0.040	0.050	0.014	0.204	5,437
Style Extremity	0.983	0.572	0.865	0.172	2.934	36,099
Industry Concentration (%)	2.797	2.105	2.417	0.102	10.795	7,797

Table 2: Determinants of shareholder letter tone

This table shows regressions of shareholder letter tone (column (1)) and personal writing style (column (2)) on various fund characteristics. Tone is measured by the Loughran and McDonald (2011) dictionary of negative words. Personal writing style is a dummy variable that is equal to one if a letter is written in first person singular or plural, and zero otherwise. The control variables are defined in detail in Appendix C. All regressions are OLS panel regressions and include fund-fixed effects and 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 double-clustered at the fund and time (filing month) dimension. *t*-statistics are provided in parentheses. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	LMD ⁻ (1)	Personal Writing Style (2)
Return Reporting Period	-0.004*** (-3.28)	0.046 (1.21)
Flow Reporting Period	-0.001* (-1.86)	0.020 (1.25)
Fund Risk	-0.010 (-0.90)	-0.085 (-0.27)
Fund Size	0.000 (0.02)	0.003 (0.31)
Company Size	0.000 (0.45)	-0.012 (-1.08)
Fund Age	0.000 (0.12)	-0.058** (-1.99)
Expense Ratio	-0.013 (-0.18)	-2.743 (-0.71)
Segment Growth	0.000 (0.03)	-0.036 (-0.58)
Return _{m+1}	-0.003 (-1.11)	0.013 (0.11)
Return _{m+2,fm}	0.001 (0.19)	-0.023 (-0.20)
R ²	0.475	0.452
Observations	34,377	34,377
Fund FE	Y	Y
Report Month FE	Y	Y
Filing Month FE	Y	Y

Table 3: Shareholder letter tone and monthly fund flows

This table shows regressions of monthly fund flows on shareholder letter tone and various fund characteristics. The dependent variable is net fund flow in the month of the SEC filing. We replace flows of the filing month by flows of the subsequent month whenever the filing of the shareholder letter takes place after the 15th calendar day. Negativity is the fraction of negative words in a shareholder letter based on the LMD⁻ dictionary. In columns (1) and (3), we use the raw tone measure. In columns (2) and (4), we first orthogonalize the tone measure in a regression and then use the residual from that regression as orthogonalized tone measure. The orthogonalized tone regression includes the controls and fixed effects from column (1) of Table 2 and in addition the fund's return rank (instead of the raw return), the squared return rank, and the value-weighted return of the fund family. In columns (1) and (2), we include the fund's return rank and squared return rank measured within the fund's investment objective during the six month reporting period. In columns (3) and (4), we use piece-wise linear regressions like Sirri and Tufano (1998) based on the fund's performance within its investment objective during the six month reporting period. All control variables are defined in detail in Appendix C. 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 double-clustered at the fund and time (filing month) dimension. *t*-statistics are provided in parentheses. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 3: Shareholder letter tone and monthly fund flows (cont'd)

Dependent Variable	Flow Filing Month			
	(1)	(2)	(3)	(4)
LMD ⁻	-0.166*** (-3.02)		-0.163*** (-2.97)	
LMD _{adj.} ⁻		-0.135** (-2.32)		-0.133** (-2.29)
Return Rank	0.008 (1.33)	0.006 (0.96)		
Return Rank ²	0.012** (2.06)	0.014** (2.26)		
Bottom Quintile			0.037*** (3.61)	0.035*** (3.47)
Mid Quintiles			0.012*** (5.83)	0.012*** (5.39)
Top Quintile			0.064*** (5.66)	0.067*** (5.60)
Fund Size	-0.009*** (-7.13)	-0.009*** (-6.42)	-0.009*** (-7.16)	-0.009*** (-6.45)
Company Size	0.003* (1.93)	0.002 (1.25)	0.003* (1.93)	0.002 (1.25)
Fund Age	-0.024*** (-5.43)	-0.024*** (-5.33)	-0.024*** (-5.41)	-0.024*** (-5.31)
Expense Ratio	0.028 (0.06)	0.026 (0.05)	0.003 (0.01)	0.006 (0.01)
Fund Risk	-0.128*** (-3.01)	-0.106** (-2.28)	-0.127*** (-3.02)	-0.105** (-2.27)
LN(Words)	-0.000 (-0.06)	-0.000 (-0.25)	-0.000 (-0.03)	-0.000 (-0.21)
LN(WPS)	0.002 (0.76)	0.003 (1.25)	0.002 (0.79)	0.003 (1.27)
Time Difference	0.000 (0.22)	0.000 (0.18)	0.000 (0.23)	0.000 (0.20)
Flow Segment	0.616*** (5.11)	0.762*** (6.14)	0.611*** (5.07)	0.758*** (6.11)
Fund FE	Y	Y	Y	Y
Reporting Month FE	Y	Y	Y	Y
Filing Month FE	Y	Y	Y	Y
R ²	0.218	0.224	0.219	0.225
Observations	34,058	31,650	34,058	31,650

Table 4: 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 is net fund flow in the month of the SEC filing. We replace flows of the filing month by flows of the subsequent month whenever the filing of the shareholder letter takes place after the 15th calendar day. In Panel A, we use two alternative tone measures (columns (1) to (4)) and analyze changes in tone (columns (5) to (7)). In columns (1) and (2), tone is defined according to the Harvard IV-4 Psychosociological Dictionary of negative words, HVD⁻. In columns (3) and (4), tone is defined as the fraction of positive minus the fraction of negative words according to the Loughran and McDonald (2011) dictionaries, LMD⁺⁻. In columns (5) to (7), we compute changes in tone from the previous letter to the current letter for each of the three tone measures: ΔLMD^- , ΔHVD^- , and ΔLMD^{+-} . In these three columns, we include the lagged flow (the flow in the filing month of the previous letter) as additional control variable. In columns (1) and (2) of Panel B, we include the natural logarithm of the number of funds covered in the letter. In columns (3) and (4), we exclude observations with a fund manager change during the reporting period or up to three months after the reporting period. In columns (5) and (6) ((7) and (8)), we include only funds with a return rank of above (below) 0.5. The return rank is calculated within the fund's investment objective based on the six month reporting period return. In columns (9) and (10), we include the fund's one year raw return and its one year 4-Factor Alpha. The control variables from columns (1) and (2) in Table 3 are always included. All variables are defined in detail in Appendix C. All regressions include fund fixed effects except for columns (5) to (7) in Panel A 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 double-clustered at the fund and time (filing month) dimension. *t*-statistics are provided in parentheses. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Alternative tone measures							
	HVD ⁻ (1)	HVD ⁻ _{adj.} (2)	LMD ⁺⁻ (3)	LMD ⁺⁻ _{adj.} (4)	ΔLMD^- (5)	ΔHVD^- (6)	ΔLMD^{+-} (7)
Tone	-0.078** (-2.30)	-0.063* (-1.67)	0.130*** (3.52)	0.111*** (2.82)	-0.066* (-1.73)	-0.048** (-2.05)	0.075*** (2.73)
Controls	Y	Y	Y	Y	Y	Y	Y
Fund FE	Y	Y	Y	Y	N	N	N
Report Month FE	Y	Y	Y	Y	Y	Y	Y
Filing Month FE	Y	Y	Y	Y	Y	Y	Y
R ²	0.218	0.224	0.218	0.224	0.075	0.075	0.075
Observations	34,058	31,650	34,058	31,650	27,784	27,784	27,784

Table 4: Letter tone and monthly fund flows - Robustness cont'd

Panel B: Alternative specifications and performance measures									
	No. of funds in the letter		Excluding Manager changes		Good Performance		Poor Performance		Return and 1-Factor Alpha
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9) (10)
LMD ⁻	-0.164*** (-3.00)		-0.206*** (-2.91)		-0.121 (-1.43)		-0.221*** (-3.21)		-0.158*** (-2.83)
LMD ⁻ _{adj.}		-0.134** (-2.30)		-0.169** (-2.29)		-0.071 (-0.79)		-0.217*** (-3.03)	-0.116** (-1.97)
LN(No. funds)	-0.003* (-1.75)	-0.003* (-1.78)							
1-year Return									0.022** (2.37) (1.88)
1-year 1-F Alpha									0.020* (2.37) (1.88)
Controls	Y	Y	Y	Y	Y	Y	Y	Y	(3.52) (3.23)
Fund FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Report Month FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Filing Month FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
R ²	0.219	0.224	0.271	0.278	0.303	0.309	0.297	0.303	0.219
Observations	34,058	31,650	22,975	21,301	17,159	16,005	16,899	15,645	33,604
									31,278

Table 5: Letter tone and fund flows - temporal dynamics

This table shows regressions of fund flows on shareholder letter tone and various fund characteristics. In Panel A, the dependent variables are daily net fund flows from day $t+1$ to $t+5$ (column (1)), from day $t+6$ to $t+10$ (column (2)), and from day $t+11$ to $t+15$ (columns (3)), where t is the SEC filing date. In Panel B, the dependent variables are monthly fund flows from month t to $t+5$, and from month $t+6$ to $t+11$, where t is the month of the SEC filing. We replace the monthly flows from t to $t+5$ ($t+6$ to $t+11$) by the flows from $t+1$ to $t+6$ ($t+7$ to $t+12$) whenever the filing of the shareholder letter takes place after the 15th calendar day. LMD_{adj}^- is the orthogonalized fraction of negative words in the shareholder letter based on the Loughran and McDonald (2011) dictionary. The orthogonalized tone regression includes the controls and fixed effects from Table 2 and in addition the return rank (instead of the raw return), the squared return rank, and the value-weighted return of the fund family. Control variables from columns (1) and (2) in Table 3 are always included in the regressions and defined in detail in Appendix C. 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 double-clustered at the fund and time (filing month) dimension. t -statistics are provided in parentheses. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Daily fund flows			
Daily flow from	$t+1;t+5$ (1)	$t+6;t+10$ (2)	$t+11;t+15$ (3)
LMD_{adj}^-	-0.026** (-2.37)	-0.011 (-1.32)	-0.002 (-0.18)
Controls	Y	Y	Y
Fund FE	Y	Y	Y
Report Month FE	Y	Y	Y
Filing Month FE	Y	Y	Y
R^2	0.287	0.276	0.281
Observations	15,731	15,559	15,445

Panel B: Long-term fund flows			
Monthly flow from	$t;t+5$ (1)	$t+6;t+11$ (2)	
LMD_{adj}^-	-0.492** (-2.46)	-0.269 (-1.58)	
Controls	Y	Y	
Fund FE	Y	Y	
Report Month FE	Y	Y	
Filing Month FE	Y	Y	
R^2	0.324	0.336	
Observations	30,702	29,256	

Table 6: Investors' reaction to a personal writing style

This table shows regressions of monthly fund flows on shareholder letter personal writing style, letter tone, and various fund characteristics. The dependent variable is net fund flow in the month of the SEC filing. We replace flows of the filing month by flows in the subsequent month whenever the filing of the shareholder letter takes place after the 15th calendar day. In column (1), we only include “Personal Writing Style” which is equal to one if a letter is written in first person singular or plural, and zero otherwise. In column (2), we add shareholder letter tone. LMD_{adj}^- is the orthogonalized fraction of negative words in the shareholder letter based on the Loughran and McDonald (2011) dictionary. In column (3), we also include the interaction of personal writing style and tone. “Team managed” is a dummy variable equal to one if a fund is managed by a team, and zero if it has a single manager. Control variables from column (2) in Table 3 are always included in the regressions and defined in detail in Appendix C. Standard errors are double-clustered at the fund and time (filing month) dimension. *t*-statistics are provided in parentheses. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent variable	Monthly fund flow		
	(1)	(2)	(3)
LMD_{adj}^-		-0.130** (-2.25)	-0.212*** (-2.63)
Personal Writing Style	0.002* (1.93)	0.002* (1.74)	0.002* (1.73)
Personal Writing Style x LMD_{adj}^-			0.167 (1.35)
Team managed	0.002 (1.51)	0.002 (1.55)	0.002 (1.55)
Controls	Y	Y	Y
Fund FE	Y	Y	Y
Report Month FE	Y	Y	Y
Filing Month FE	Y	Y	Y
R^2	0.224	0.224	0.224
Observations	31,646	31,646	31,646

Table 7: Shareholder letter tone and future fund performance

This table shows regressions of fund performance (in %) on shareholder letter tone, personal writing style, and various fund characteristics. The dependent variable is the fund's return (column (1)), the fund's CAPM 1-factor alpha (column (2)), the fund's Fama and French (1993) 3-factor alpha (column (3)), and the fund's Carhart (1997) 4-factor alpha (column (4)). Performance is measured from one month after a letter's SEC filing ($t+1$) to six months after the SEC filing ($t+6$). Alphas are computed using beta coefficients obtained from a regression using daily fund returns over the previous twelve months ($t-12$ to $t-1$). LMD_{adj}^- is the orthogonalized fraction of negative words in the shareholder letter based on the Loughran and McDonald (2011) dictionary. "Personal Writing Style" is equal to one if a letter is written in first person singular or plural, and zero otherwise. All control variables are defined in detail in Appendix C. 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 double-clustered at the fund and time (filing month) dimension. t -statistics are provided in parentheses. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent variable	Raw return (1)	1-factor alpha (2)	3-factor alpha (3)	4-factor alpha (4)
LMD_{adj}^-	-0.363 (-0.04)	0.427 (0.05)	1.570 (0.16)	-0.027 (-0.00)
Personal Writing Style	0.313** (2.54)	0.263** (2.07)	0.254* (1.66)	0.194 (1.59)
Team managed	-0.113 (-0.63)	-0.110 (-0.59)	-0.130 (-0.64)	0.045 (0.22)
Fund Size	-1.572*** (-7.58)	-1.290*** (-7.44)	-0.962*** (-5.02)	-0.958*** (-5.44)
Company Size	0.037 (0.27)	0.004 (0.03)	-0.064 (-0.45)	-0.004 (-0.03)
Fund Age	1.342*** (3.20)	1.718*** (3.86)	0.972* (1.87)	0.906* (1.85)
Expense Ratio	-9.704 (-0.17)	13.618 (0.24)	38.457 (0.71)	4.572 (0.09)
LN(Words)	-0.014 (-0.14)	-0.038 (-0.39)	-0.020 (-0.22)	-0.081 (-0.91)
LN(WPS)	0.099 (0.27)	0.030 (0.08)	0.242 (0.60)	-0.049 (-0.13)
Time Difference	-0.031 (-1.33)	-0.032 (-1.33)	-0.018 (-0.75)	-0.023 (-0.93)
Flow Reporting Period	-1.221*** (-2.76)	-1.218*** (-2.97)	-1.627*** (-2.91)	-1.182** (-2.13)
Flow $_{t+1,t+6}$	3.663*** (9.05)	4.268*** (10.90)	4.122*** (9.44)	3.445*** (9.69)
Fund FE	Y	Y	Y	Y
Report Month FE	Y	Y	Y	Y
Filing Month FE	Y	Y	Y	Y
R^2	0.858	0.282	0.266	0.261
Observations	30,592	30,592	30,592	30,592

Table 8: Letter tone and managerial risk-taking

This table shows regressions of fund risk on shareholder letter tone, personal writing style, 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)). Fund risk is the standard deviation of daily returns from one month after a letter is sent ($t+1$) to six months after the letter is sent ($t+6$). Systematic (idiosyncratic) risk is the market beta (standard deviation of residuals) obtained from estimating a Carhart 4-Factor-Model using daily data from month $t+1$ to $t+6$ where t is the filing month. Total risk and idiosyncratic risk are expressed in %. LMD_{adj}^- is the orthogonalized fraction of negative words in the shareholder letter based on the Loughran and McDonald (2011) dictionary. "Personal Writing Style" is equal to one if a letter is written in first person singular or plural, and zero otherwise. All control variables are defined in detail in Appendix C. 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 double-clustered at the fund and time dimension (filing month). t -statistics are provided in parentheses. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent variable	Total Risk (1)	Total Risk (2)	Systematic Risk (3)	Systematic Risk (4)	Idiosyncratic Risk (5)	Idiosyncratic Risk (6)
LMD_{adj}^-	-0.257 (-1.37)	-0.257 (-1.36)	-0.038 (-0.34)	-0.049 (-0.43)	-0.384*** (-2.84)	-0.367*** (-2.77)
Personal Writing Style	-0.001 (-0.27)			-0.004* (-1.91)		0.005** (2.02)
Team managed	-0.006 (-1.05)			-0.004 (-1.14)		-0.007* (-1.84)
Fund Size	0.012** (1.97)	0.012** (1.99)	0.011*** (3.47)	0.011*** (3.48)	0.008** (2.50)	0.008** (2.51)
Company Size	0.008* (1.83)	0.008* (1.82)	0.004* (1.66)	0.004 (1.63)	-0.002 (-0.81)	-0.002 (-0.73)
Fund Age	-0.026** (-2.10)	-0.026** (-2.10)	-0.030*** (-3.47)	-0.030*** (-3.46)	-0.016* (-1.85)	-0.016* (-1.82)
Expense Ratio	0.373 (0.19)	0.425 (0.22)	1.550 (1.56)	1.575 (1.58)	-0.373 (-0.32)	-0.322 (-0.28)
LN(Words)	0.000 (0.12)	0.000 (0.06)	0.000 (0.04)	-0.001 (-0.34)	0.000 (0.06)	0.001 (0.52)
LN(WPS)	0.013 (1.24)	0.013 (1.24)	0.002 (0.32)	0.002 (0.25)	0.012** (2.36)	0.013** (2.42)
Time Difference	0.001 (1.04)	0.001 (1.06)	0.000 (1.08)	0.000 (1.08)	0.001 (1.28)	0.001 (1.32)
Flow Reporting Period	-0.004 (-0.40)	-0.004 (-0.40)	-0.008 (-1.52)	-0.007 (-1.50)	-0.004 (-0.77)	-0.004 (-0.78)
Return Reporting Period	0.082 (1.08)	0.082 (1.08)	0.060 (1.13)	0.061 (1.14)	0.032 (0.91)	0.032 (0.91)
Fund FE	Y	Y	Y	Y	Y	Y
Report Month FE	Y	Y	Y	Y	Y	Y
Filing Month FE	Y	Y	Y	Y	Y	Y
R^2	0.938	0.938	0.684	0.684	0.882	0.882
Observations	31,073	31,068	31,073	31,068	31,073	31,068

Table 9: Letter tone and managerial investment style

This table shows regressions of three measures of a fund's investment style on shareholder letter tone, personal writing style, and various fund characteristics. The dependent variable is the fund's tracking error (columns (1) and (2)), style extremity (columns (3) and (4)), and industry concentration (columns (5) and (6)). The tracking error is obtained from Antti Petajisto's webpage (<http://petajisto.net/data.html>) and is described in Petajisto (2013). The tracking error data are only available until September 2009. Style extremity is the absolute difference of a fund's SMB-, HML-, and UMD-Betas from the average Betas in its investment objective. Betas are calculated using daily return data over the six months after the fiscal (half-) year end. For a detailed description of style extremity see Baer, Kempf, and Ruenzi (2011). Industry concentration is the squared deviation of the weight of a given industry in the fund's portfolio from the weight of that industry in the market. It is expressed in % and is available until March 2012. For details see Kacperczyk, Salm, and Zheng (2005). All three variables are measured six months after the report month. LMD_{adj}^- is the orthogonalized fraction of negative words in the shareholder letter based on the Loughran and McDonald (2011) dictionary. "Personal Writing Style" is equal to one if a letter is written in first person singular or plural, and zero otherwise. All control variables are defined in detail in Appendix C. 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 double-clustered at the fund and time dimension (filing month). t -statistics are provided in parentheses. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 9: Letter tone and managerial investment style cont'd

Dependent variable	Tracking Error (1)	Tracking Error (2)	Style Extremity (3)	Style Extremity (4)	Industry Concentration (5)	Industry Concentration (6)
LMD _{adj.} ⁻	-0.201** (-2.50)	-0.196** (-2.41)	-0.650** (-2.08)	-0.608* (-1.95)	-4.153* (-1.92)	-4.134* (-1.91)
Personal Writing Style		0.003** (2.25)		0.013* (1.70)		-0.056 (-0.98)
Team managed		0.001 (0.31)		-0.020 (-1.62)		-0.187* (-1.74)
Fund Size	0.001 (0.59)	0.001 (0.55)	0.007 (0.78)	0.007 (0.78)	-0.037 (-0.55)	-0.030 (-0.46)
Company Size	0.001 (0.33)	0.001 (0.44)	0.005 (0.54)	0.006 (0.61)	0.068 (1.04)	0.072 (1.11)
Fund Age	0.008 (1.29)	0.008 (1.30)	-0.057** (-2.22)	-0.056** (-2.18)	-0.252 (-1.05)	-0.265 (-1.10)
Expense Ratio	0.321 (0.44)	0.305 (0.42)	-0.644 (-0.16)	-0.512 (-0.13)	23.426 (0.77)	21.618 (0.72)
LN(Words)	0.000 (0.08)	0.001 (0.36)	0.008 (1.44)	0.009* (1.76)	-0.039 (-0.77)	-0.045 (-0.86)
LN(WPS)	0.002 (0.49)	0.002 (0.48)	-0.017 (-0.81)	-0.015 (-0.74)	0.181 (1.16)	0.185 (1.19)
Time Difference	-0.000 (-0.35)	-0.000 (-0.34)	-0.003*** (-2.64)	-0.003*** (-2.61)	0.015* (1.95)	0.015** (2.02)
Flow Reporting Period	0.002 (0.77)	0.002 (0.85)	0.008 (0.48)	0.008 (0.47)	0.070 (0.61)	0.068 (0.61)
Return Reporting Period	0.024** (1.98)	0.024** (1.98)	0.038 (0.47)	0.038 (0.47)	-0.075 (-0.15)	-0.098 (-0.19)
Fund Risk	-0.003 (-0.02)	-0.001 (-0.01)	0.964 (1.47)	0.954 (1.45)	-2.941 (-0.71)	-2.867 (-0.68)
Flow _{t+1,t+6}	0.001 (0.25)	0.001 (0.25)	0.002 (0.08)	0.002 (0.08)	-0.083 (-0.66)	-0.068 (-0.54)
Fund FE	Y	Y	Y	Y	Y	Y
Report Month FE	Y	Y	Y	Y	Y	Y
Filing Month FE	Y	Y	Y	Y	Y	Y
R ²	0.862	0.862	0.553	0.553	0.783	0.784
Observations	4,250	4,250	30,966	30,963	6,547	6,546

Figure 1: Average negativity over time

The blue line in this figure shows the average shareholder letter negativity obtained from the Loughran and McDonald (2011) dictionary. The sample period corresponds to the report dates of the shareholder letters in our sample and ranges from November 2005 to December 2013. The orange line shows S&P 500 returns over the previous six months of a given date.

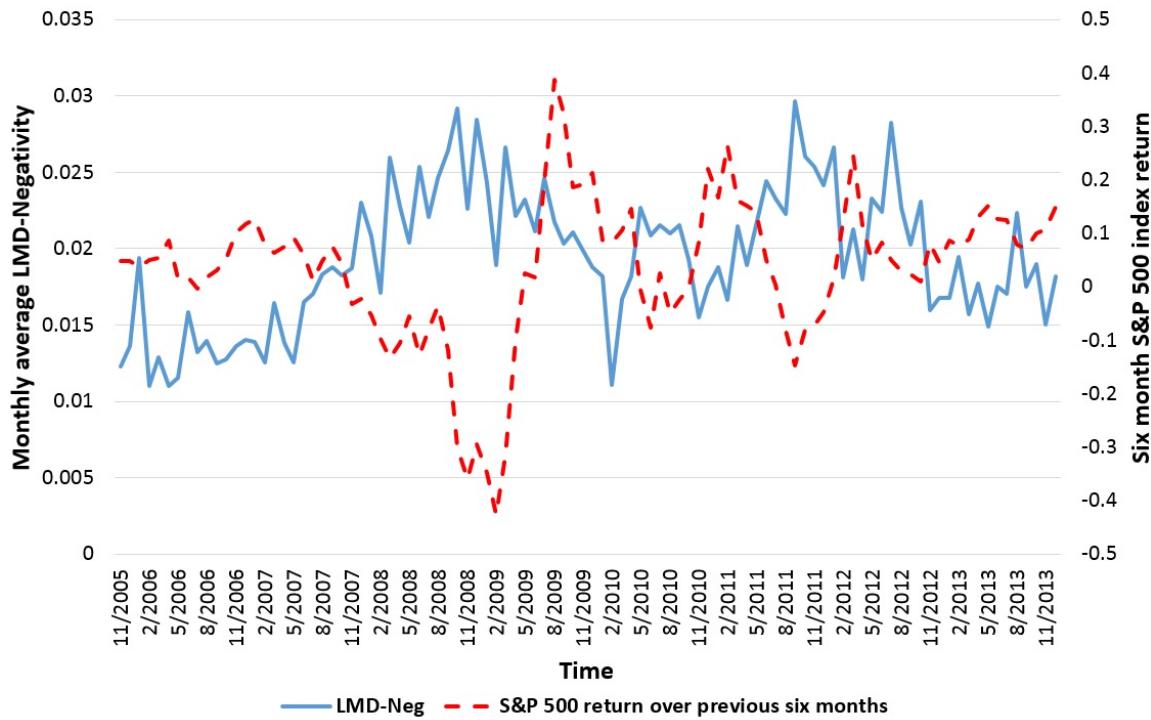
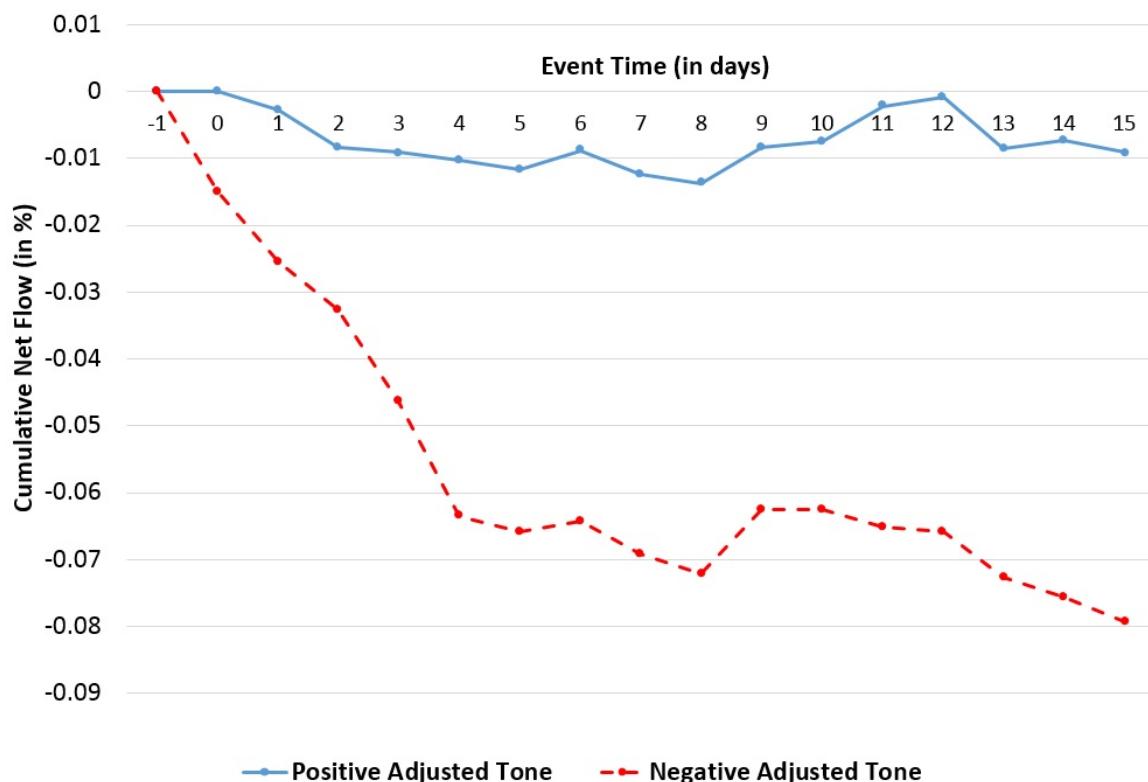


Figure 2: Cumulative daily flows after shareholder letter filing date

This figure shows 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) orthogonalized tone. Tone is measured by LMD^- which is the fraction of negative words in the shareholder letter based on the Loughran and McDonald (2011) dictionary. We orthogonalize LMD^- in a regression and then use the residual from that regression as orthogonalized tone measure. The orthogonalized tone regression includes the controls and fixed effects from column (1) in Table 2 and in addition the return rank (instead of the raw return), the squared return rank, and the value-weighted return of the fund family. The two groups are obtained by a median split of the letters based on orthogonalized LMD_{adj}^- tone.



Appendices

A Who signs the shareholder letter?

	Abs. Frequency	Rel. Frequency
Chief Investment Officier	1539	4.2%
Chief Executive Officer	5513	15.2%
Chief Operating Officer	63	0.2%
Chief Financial Officer	28	0.1%
Fund Manager	3625	10.0%
President	13568	37.4%
Chairman	5934	16.4%
Managing Director	465	1.3%
Position Unknown	13615	37.6%

B Publication Dates of N-CSR and N-CSRS filings

	Report Date		Filing Date	
	Number (1)	Percentage (2)	Number (3)	Percentage (4)
January	1,238	3.4%	3,616	10.0%
February	1,866	5.2%	2,098	5.8%
March	3,601	9.9%	4,943	13.6%
April	4,637	12.8%	1,416	3.9%
May	1,270	3.5%	2,133	5.9%
June	4,959	13.7%	4,385	12.1%
July	1,169	3.2%	3,334	9.2%
August	1,826	5.0%	2,831	7.8%
September	3,793	10.5%	3,495	9.6%
October	4,885	13.5%	1,198	3.3%
November	1,319	3.6%	2,158	6.0%
December	5,682	15.7%	4,638	12.8%

C 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) EST: Estimated by the authors
- (iv) KF: Kenneth French Data Library
- (v) MS: Morningstar Direct Database
- (vi) TR: Thomson Reuters Fund Holdings Database (formerly known as CDA/Spectrum)
- (vii) AUT: data from the webpage of the author of the respective paper

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 $r_{i,t}$ denotes fund i 's return in month t as reported in CRSP. The merger correction proposed in Lou (2012) is applied. The variable is winsorized at the 1st and 99th percentile.	CRSP, EST
Daily Fund Flow	Computed as the USD Flow on day t (MS variable “Estimated Fund-Level Net Flow – aggregated from share classes (daily)”) divided by the total net assets on day $t-1$ (MS variable “Fund Size – aggregated from share classes (daily)”). The variable is winsorized at the 1st and 99th percentile.	MS, EST
1-Factor Alpha	Performance alpha from a market model. The alphas are estimated out of sample, i.e., coefficients to compute alphas for the 6-month period following the filing month are obtained using daily fund returns over the previous twelve months ($t-12$ to $t-1$). Market returns are from the Kenneth French data library.	CRSP, KF, EST
3-Factor Alpha	Performance alpha from a model including factor returns for the market, HML and SMB factors from the Kenneth French data library. The alphas are estimated out of sample, i.e., coefficients to compute alphas for the 6-month period following the filing month are obtained using daily fund returns over the previous twelve months ($t-12$ to $t-1$).	CRSP, KF, EST
4-Factor Alpha	Performance alpha from a model including factor returns for the market, HML and SMB factors from the Kenneth French data library, as well as the Carhart momentum factor. The alphas are estimated out of sample, i.e., coefficients to compute alphas for the 6-month period following the filing month are obtained using daily fund returns over the previous twelve months ($t-12$ to $t-1$).	CRSP, KF, EST
Fund Risk	Standard deviation of daily returns. The variable is calculated from one month after the SEC filing ($t+1$) to six months after the SEC filing ($t+6$). The variable is winsorized at the 1st and 99th percentile.	CRSP, EST
Systematic Risk	Loading on the excess return of the market in the Carhart Four-Factor-Model. The estimation is based on daily returns. The estimation window is from one month after the SEC filing ($t+1$) to six months after the SEC filing ($t+6$). The variable is winsorized at the 1st and 99th percentile.	CRSP, KF, EST

Panel A: Main dependent variables continued

Variable name	Description	Source
Idiosyncratic Risk	Estimated as the standard deviation of the residual in the Carhart Four-Factor-Model. The estimation is based on daily returns. The estimation window is from one month after the SEC filing ($t+1$) to six months after the SEC filing ($t+6$). The variable is winsorized at the 1st and 99th percentile.	CRSP, KF, EST
Tracking Error	Tracking error is the standard deviation of the difference between the fund's return and the return of the fund's benchmark index. The data is obtained from Antti Petajisto's webpage (http://petajisto.net/data.html). The construction details are defined in Petajisto (2013). The variable is winsorized at the 1st and 99th percentile. It is available until September 2009.	AUT
Style Extremity	Style extremity is the average absolute difference of a fund's SMB-, HML-, and UMD-Betas from the average Betas in its investment objective. We follow the construction details of Baer, Kempf, and Ruenzi (2011). Betas are calculated using daily return data over the six months after the fiscal (half-) year end. The variable is winsorized at the 1st and 99th percentile.	CRSP, KF, EST
Industry Concentration	Industry concentration is the squared deviation of the weight of a given industry in the fund's portfolio from the weight of that industry in the market. It is expressed in % and measured six months after the fiscal (half-) year end. We follow the construction details of Kacperczyk, Salm, and Zheng (2005). The variable is winsorized at the 1st and 99th percentile. Due to limited access to the TR fund holdings database the variable is only available until March 2012.	CRSP, TR, EST

Panel B: Main independent variables

Variable name	Description	Source
LMD ⁻	Fraction of negative words in a letter according to the Loughran and McDonald (2011) dictionary.	SEC, EST
LMD ⁺⁻	Fraction of positive minus fraction of negative words in a letter according to the Loughran and McDonald (2011) dictionaries.	SEC, EST
HVD ⁻	Fraction of negative words in a letter according to the Harvard IV-4 Psychosociological dictionary.	SEC, EST
LMD _{adj.} ⁻ , (LMD _{adj.} ⁺⁻ , HVD _{adj.} ⁻)	Residual of a regression of LMD ⁻ (LMD ⁺⁻ , HVD ⁻) on Flow Reporting Period, Fund Size, Company Size, Fund Age, Expense Ratio, Fund Risk, Segment Growth, Return Rank, Return Rank Squared, the value-weighted return of the fund family, and fund returns between the fiscal (half-) year end and the filing date. The regressions also 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).	SEC, EST
Personal Writing Style	Dummy variable which equals one if a letter is written in first person singular or plural, and zero otherwise. A letter is classified as written in first person if the fraction of first person singular words (I, me, myself, my, mine) or the fraction of first person plural words (we, our, ours, ourselves) is above the median across all fund letters.	SEC, EST

Panel C: Other control variables

Variable name	Description	Source
Return Reporting Period	Return over the six months before the fiscal (half-) year end.	CRSP
1-year Return	Return over the twelve months before the fiscal (half-) year end.	CRSP
1-year 1-F Alpha	1-factor alpha estimated using daily return data over the twelve months before the fiscal (half-) year end. Market returns are from the Kenneth French data library.	CRSP, KF, EST
Return Rank	Performance rank of a fund based on its return over the six months before the fiscal (half-) year end in its market segment. This variable is normalized between zero and one.	CRSP, EST
Return Rank ²	Squared performance rank of a fund based on its return over the six months before the fiscal (half-) year end in its market segment. This variable is normalized between zero and one.	CRSP, EST
Return _{m+1}	Return over the month after a report month.	CRSP, EST
Return _{m+2, fm}	Return from two month after the report month to the filing month.	CRSP, EST
Bottom Quintile	Computed as min(Return Rank; 0.2).	CRSP, EST
Mid Quintiles	Computed as min(Return Rank - Bottom Quintile; 0.6).	CRSP, EST
Top Quintile	Computed as Return Rank - (Bottom Quintile + Mid Quintiles).	CRSP, EST
Flow Reporting Period	Flow over the six months before the fiscal (half-) year end.	CRSP, EST
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 in percent. The variable is winsorized at the 1st and 99th percentile.	CRSP
Fund Age	Logarithm of a fund's age computed from the date a fund was first offered (CRSP variable "first_offer_dt").	CRSP, EST
Flow Segment	Growth rate of the fund's segment due to inflows in percent. Calculated based on aggregation of individual fund growth rates due to inflows.	CRSP, EST
Segment Growth	Change in the number of funds per market segment in a given month.	CRSP, EST
LN(Words)	Logarithm of a shareholder letter's total number of words.	SEC, EST
LN(WPS)	Logarithm of a shareholder letter's average number of words per sentence.	SEC, EST
Time Difference	Number of days between the reporting period end date (report date) and the SEC filing date for a given shareholder letter.	SEC, EST
LN(No. funds)	Natural logarithm of the number of funds covered in a shareholder letter.	SEC, EST
Team managed	Dummy variable which is equal to one if the fund is managed by a team and zero otherwise.	CRSP, EST

D Details on extracting shareholder letters from N-CSR filings

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 a Central Index Key (CIK) that can be linked to one or multiple portfolios and thus cannot be used as a unique portfolio identifier. Beginning February 6, 2006, all open-end mutual fund companies have been required to use electronic IDs that allow identification of fund portfolios and share classes when making their filings with the SEC.³⁴ There are two types of identifiers used by the SEC. Series ID is used as an identifier on the fund portfolio level, while 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 2013. Filings that do not include a Series ID are dropped from our sample.

³⁴See adopting release <http://www.sec.gov/rules/final/33-8590.pdf>

E 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 December 31, 2008. It was a time of enormous upheaval and change. We 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 2008. 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%)