THE INVESTOR ATTENTION/AWARENESS AND LEARNING CHANNELS: EFFECT OF MEDIA COVERAGE ON FUND FLOWS AND PERFORMANCE

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Abstract (137 words)

Media coverage can be an important channel for determining which mutual funds are being considered for purchase or retention by less sophisticated individual investors. We find that media coverage is more likely for bigger, older and fee-waiving Open Ended Mutual Funds (OEMFs). Consistent with the investor attention hypothesis, we find that the existence, frequency and tone of media articles, and also excluding those that do not mention holdings, significantly affect future OEMF flows and performance more strongly during the following-day. Over longer periods of time, we find that the fund-performance effect of learning based on the tone of news article is more pronounced. We find significant but small spill-over effects from news mentions of other same-family funds. We also find that funds with negative coverage are not punished as much as funds with positive coverage are rewarded.

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1. INTRODUCTION

A common belief is that media influences individual perceptions (e.g. Tetlock, 2007) and affects the social, economic and financial landscapes (e.g. Stiglitz, 2002; Engelberg and Parsons, 2011). Many studies examine the effects of media coverage on the performance of different financial institutions, securities, and investors. In discussing stocks, Merton (1987) mentions that a newspaper or other mass media story about a firm that reaches many investors who are not currently shareholders could induce some of these potential investors to incur the set-up costs to follow and invest in the firm. Barber and Odean (2004) posit that news is a primary mechanism for attracting the attention of investors and provide evidence that investors buy stocks which attracted their attention. Tetlock (2007) measures investor sentiment using textual analysis and shows that media pessimism predicts short-term temporary declines in aggregate prices and trading volumes.

This paper investigates the effects of media coverage on open ended mutual funds (OEMFs). The mutual fund industry provides a good setting for testing the effects of media coverage. First, there is no first-order valuation effect on a mutual fund due to investor attention and learning from media coverage which makes it easier to separate the augmented flows and returns due to the attention- and awareness-based buying behaviour of investors. Second, the shareholder base of retail-class OEMFs consists of individual (household) investors who are considered the least sophisticated type of investors in the market (e.g., Barber and Odean, 2013). In that sense, the behavioural effects of media coverage are expected to be more pronounced for OEMFs both in terms of investor attention and learning.

A mutual fund (MF) is a financial vehicle which pools money collected from a large number of investors and invests that money in the market on the behalf of those shareholders. MF managements receive fees which are based on the amount of assets under management (AUM) that typically range between 0.5% and 1% of AUM for equity OEMFs. As management compensation is related directly to a fund's AUM, fund managers have an incentive to outperform to garner more inflows to increase their dollar management fees. This can be done *internally* by exhibiting better fund performance or *externally* by implementing better communication skills that increase AUM through net inflows. The former method is unreliable as the mutual fund literature generally finds that the average MF is unable to earn higher than normal returns on a long-term

basis and that observed outperformances are usually temporary and often based on luck and not skill (e.g. Barras and Scaillet, 2010; Carhart, 2012). Results for the relationship between fund performance and the level of a fund's management expense ratio (MER) are mixed, ranging from negative (Elton et al., 1993; Haslem et al., 2008; Bello and Frank, 2010) to none (Blume and Crockett, 1970; Ippolito, 1989; Edelen et al., 2013). Edelen et al. (2013) also find that fund performance decreases with total trading costs. Then, why do some OEMFs attract inflows when they have higher MERs without outperforming? A possible explanation is the external communication skills of the funds in terms of garnering media coverage.

When search is costly, the appearance of an OEMF in the media may encourage potential investors to include the OEMF in their limited "consideration set" (Merton, 1987) and thus increase the likelihood that the OEMF will be included in an investor's investment portfolio.[1] Media coverage can be about the mutual fund itself or about its holdings. If OEMF holdings that are disclosed to the SEC quarterly are mentioned in the media, the expectation is that investors will become more aware of the OEMF and increase their flows into the OEMF. Solomon, Soltes, and Sosyura (2014) find evidence of a significant correlation between media mentions of fund holdings and the subsequent flows into the fund. Unlike their paper, we focus mainly on the media coverage of the mutual fund itself and test whether news articles that refer to an OEMF or its family in the first 500 words of an article result in increased flows to the fund and affect the OEMF's subsequent performance. To support our conjecture that our results are not due to media coverage of fund-holding disclosures, we obtain supportive results from a set of robustness tests using a cleansed media mentions database which excludes articles that mention both an OEMF and its holdings.

We first examine the number of news articles that mention an OEMF's name on each day to begin to capture the absolute effect of investor attention. We separately compare the cash inflows and performances of OEMFs based on the level of attention they receive through different channels of media coverage that differ from fund to fund. To illustrate, a fund's rating affects a fund's inflows (e.g. Del Guercio and Tkac, 2008, for changes in Morningstar's 5-star ratings; and Kaniel

[1] This is also referred to as information awareness (e.g., Blankespoor, Dehaan, Wertz and Zhu, 2019). The SEC, e.g., has implemented regulations like FD (Fair Disclosure) and XBRL (an easier way to view, access, and explore the contextual information in SEDAR) to facilitate information awareness and reduce search costs for investors. The SEC FD differs from, for example, the Canadian National Policy 51-201 in terms of the methods used for disclosure.

and Parham, 2017, for presence in the top 10 rankings of the Wall Street Journal). We expect that a higher rated (older) fund would benefit less from increased media coverage than a lower ranked, lesser known (younger) fund as the higher rated (older) fund has already garnered much attention. Therefore, we control for the different characteristics of funds to better extract the pure effects of investor attention from media mentions by ensuring that our results are not driven by differences in fund characteristics or other channel mentions.

To identify which OEMF characteristics lead to media coverage, we use Poisson and negative binomial regressions to examine the relation between *Count* (number of news articles covering an OEMF in each trading day) with size, age, performance, and controls. To help address endogeneity issues in the form of reverse causation, we use the lags of the independent variables. We also use panel regressions with fixed effects and the log of the count data as a robustness check of our results. We find that media coverage for an OEMF tends to be persistent, and that media coverage is higher for funds that are bigger, older, with worse prior performance, with lower management fees, with higher previous-day absolute net flows (proxy for the level of "trading" volume), with a higher number of funds in their family, and with higher-than-average Morningstar 5-star ratings. Our results are not significantly different when we run separate tests on funds with different prospectus objectives of Income, Growth and Aggressive Growth.

We also assess how the extent and tone of OEMF media coverage affects subsequent net cash flows, cash redemptions and benchmark-adjusted returns. We find that both the existence and frequency of media articles significantly increases the flows to (consistent with the attention hypothesis) and decreases the performance of the OEMF. To examine tone, we carefully analyze each news article separately using a dictionary-based sentiment analysis technique following Loughran and McDonald (2011) to determine if the message tone is positive or negative. We hypothesize that after publication of a positive/negative news article about a given OEMF, we will observe higher/lower inflows to and lower/higher redemptions from that fund in the following days. We find that both the existence and frequency of media articles in the previous trading day significantly increases the flows to the OEMF and that the effect is stronger for the existence of media articles. In contrast, fund performance diminishes following a news-date irrespective of the choice of our regression specification. We assess if our first-day, post-publication results for the effects of the existence, frequency, and sentiment of media coverage on flows and performance

remain over the first trading week and subsequent six-month period. We find that the fund-performance based on the tone of news article is more pronounced over these longer periods (consistent with the learning hypothesis).

We use a two-stage least squares setting to address potential endogeneity issues caused by the omission of potentially influential variables in our panel regressions. Since we expect management skill to be positively related to both OEMF size and performance, we use an instrumental variable approach and the recursive demeaning procedure of Pastor and Stambaugh (2015) to deal with the resulting bias because we cannot measure skill directly. We find that fund shareholders act based on the tone and sentiment of the conveyed message since funds with more previous-day positive news mentions overperform their counterparts both in terms of their net flow percentages and benchmark-adjusted returns. We also find that our results remain intact when we examine the effect of fund news that does not mention a fund's holdings.

We consider the spillover effects from news about funds within the same fund family and those managed by the same management company.[2] We find significant effects from spillovers among funds from the same management company at the 1%-level which represent a small fraction of the total effect of the frequency and existence of the media coverage on flows of the OEMFs.

Our paper contributes to the literature that examines how media exposure through the "investor attention/awareness" channel proposed by Gilbert et al. (2012), amongst others, and the "information digestion" channel proposed by Del Guercio and Tkac (2008) can affect individual investment behavior (i.e. fund flows) and subsequently mutual fund investment decisions and performances.[3] Our findings differ from the findings of Blankespoor, Dehaan, Wertz and Zhu (2019) who conclude that their results for the Associated Press's (AP's) staggered rollout of nationally distributed "robo-journalism" articles of firms' earnings announcements raises questions about the efficacy of regulations that aim to aid less sophisticated investors by increasing their awareness of and access to accounting information. Moreover, we contribute to a strand of

[2] The former are those funds belonging to the same management company but having a different fund manager and/or advisor. The latter are those funds belonging to the same management company.
[3] Thus, our study further complements a parallel literature which finds that the media can provide efficient signals to outside stakeholders about managerial behaviour and firm performance that may change firms' behavior and outcomes (e.g., Bednar, Boivie and Prince, 2013; Liu and McConnell, 2013; You, Zhang and Zhang, 2017; Chen, Goyal, Veeraraghavan and Zolotoy, 2020).

the literature that measures the impact of news sentiment on the performance of financial securities (e.g., Tetlock, 2007; Fang and Peress, 2009; Kaniel and Parham, 2017).

Our paper also makes an important contribution to the communication practices and coverage of OEMFs and corporations given that mutual funds own a sizeable share of U.S. corporate equity (31% in 2017) and represent a significant component of the financial holdings of many households (e.g., 45.4% of U.S. households in 2017, *ICI Factbook 2018*). Various studies (e.g., Bodnaruk and Ostberg, 2008) support the Merton (1987) model prediction that the cost of equity increases with a decrease in the number of shareholders, which in turn depends upon investor attention or awareness which leads to less limited investor "consideration sets" and potentially to a broader shareholder base. We are, to the best of our knowledge, the first paper to use a comprehensive dataset of daily media coverage of funds and their families to examine fund flows and performance in the mutual fund industry.

Our paper also contributes to the spill-over effects of information revelation about "peer" entities by examining the effects of news articles about other funds on the flows and performancs of the fund of interest. The current literature examines the effects of spillover about the strategies or techniques used by hedge funds (e.g. Glode and Green, 2011), stellar performance of other funds in the same family (Nanda, Wang and Zheng, 2004), demand spillover for the retail segment of the U.S. mutual fund industry (Gavazza, 2011), knowledge spillovers in the mutual fund industry through labor mobility (Cici, Kempf and Peitzmeier, 2022) and asset participation spillovers from retirement account ownership to other stockholding modes (Dimitris, Georgarakos, and Haliassos, 2011).

The rest of the paper is structured as follows. In section 2 we develop the hypotheses to be tested. In section 3 we discuss sample selection and data manipulation including the hand-collected news database consisting of over 300,000 articles. Section 4 reports the empirical results and discusses their significance. Section 5 provides additional robustness tests. Section 6 concludes.

2. DEVELOPMENT OF THE HYPOTHESES

Media coverage of OEMFs can be divided into news covering the OEMF itself or its holdings. The belief is that investors are more attentive or aware of the OEMF if the OEMF itself or assets

included in the OEMF's portfolio that are publicly revealed quarterly are mentioned in the media. Edelen (1999) finds an inverse relation between OEMF abnormal returns and their net flows. We posit that media coverage of OEMFs itself affects the flows based on the attention it solicits from individuals which Sirri and Tufano (1999) use as a proxy for the magnitude of search costs. We build on Solomon, Soltes, and Sosyura (2012) who find a significant correlation between media mentions of OEMF holdings and the subsequent flows into the OEMF by examining the effect of news covering the OEMF itself with and without the including of news about holdings. Solomon et al. find that extra flows respond to past returns, only if the holdings are covered in major newspapers.

Any communication between fund sponsors and fund investors, whether directly through advertisements or fund mailings, or indirectly through newspapers articles and fund ratings, is generally designed to affect the expectations of investors about the fund's ability to generate competitive returns, and subsequently to increase the inflows to the fund. Therefore, everything else held equal, an investor who has direct or indirect communications from an OEMF is more likely to consider that OEMF when making his/her capital allocation decision (Merton, 1987). Both positive and negative messages are expected to change the expectations and subsequent response of fund investors in terms of cash inflows or redemptions. As a result, media coverage can directly affect the OEMF's asset base, and indirectly affect the OEMF's ability to generate returns, and the risk-taking behavior of its managers. Hence:

> **H1:** The absolute flows to/from an OEMF and the performance of the OEMF are related to the existence and the volume of media coverage of the OEMF itself.

The expected change of such communications on the expectations and subsequent response of fund investors will depend on an assessment of their content in terms of the positivity or negativity of their tones. This leads to the following hypothesis in its alternate form:

> **H2:** The absolute flows to/from an OEMF and the performance of that OEMF depend upon the message tone which can affect investor sentiment towards that OEMF.

3. SAMPLE AND DATA MANIPULATION

3.1. OEMF Sample

The OEMF sample is drawn from Morningstar Direct for the period from 2010 to 2018 for US OMEFs with a Global Broad Category of Equity.[4] About 87% of the sample of equity OEMFs consists of growth funds and the remainder are income funds. We obtain daily price and net assets for a sample of 5563 share classes that represent 1730 funds and 448 distinct fund families. Our sample has no survivorship bias since it includes active, merged, and liquated OEMFs. We obtain each OEMF's rating, type of share class, inception date, and respective benchmarks to be used as control variables. We use two measures for the cash flows to and from the OEMFs, the net dollar flows (TNF) which are equal to the exact amount of cash absorbed by the fund, and the percentage flows (TNFP) which are the percentage increases in OEMF assets not driven by their internal returns. Although TNFP use is more prevalent in the mutual fund literature, we also include TNF in its absolute form as it can serve as a measure for trading volume. Tetlock (2007) finds that extreme media sentiment affects the trading volume of stocks. We calculate the two flow measures using the following formulas:

$$TNF_{i,t} = AUM_{i,t} - AUM_{i,t-1} * \left(1 + FndRet_{i,t}\right) \quad (1)$$

$$TNFP_{i,t} = \frac{AUM_{i,t} - AUM_{i,t-1} * (1 + FndRet_{i,t})}{AUM_{i,t-1}} \quad (2)$$

where $AUM_{i,t}$ is the total net assets of share-class *i* for day *t* and $FndRet_{i,t}$ is the realized return of fund *i* for day *t*. The values generated using equation (1) conform to the values that are reported in the MorningStar database. The daily returns, trading volumes and volatilities for the S&P500 and Russell indexes are downloaded from CRSP.

Our mutual fund database has 8,133,208 share class–day observations. When we combine the observations for the different share classes associated with an OEMF into a single observation we are left with 2,718,146 OEMF-day observations. While we conduct the main analyses at the OEMF level, we also conduct analyses with the 800,464 fund family-day observations. Table 1 shows the summary statistics for our equity OEMF sample and the covariates used in the subsequent empirical analyses.

<Table 1 about here.>

3.2. News Sample

[4] Time period is dictated by downloading restrictions on the Factiva license used to download news data.

We download the articles covering every fund family in our sample during the period of 2010 to 2018 using the Factiva search engine. Our criteria restrict the search to identify articles in the English language, financial industry, and United States region. We search for fund-family mentions as the majority of the news articles cover the family in general, rather than the OEMF itself or its share classes. We include an article as media coverage for an OEMF if it mentions the fund family's name in the first 500 words, in order to exclude the less significant and tabular mentions in longer articles. Due to the prevalence of the internet and online news sources, and their extended reach to individual and institutional investors, we do not restrict our news sample to the major newspapers and periodicals. Each downloaded article is analyzed using the Loughran and McDonald (LM) (2011) dictionary to categorize the article into positive, neutral or negative sentiment news. Two separate surveys on textual analysis, Loughran and McDonald (2016) and Guo et al. (2016) show that the LM dictionary outperforms the Harvard General Inquirer (GI) for sentiment analyses in accounting and finance. Guo et al. (2016) also show that while neural network-based approaches are the best in terms of sentiment analysis, a dictionary-based approach using the LM dictionary produces very similar results.

We extract 319,647 separate news articles covering 397 distinct fund families consisting of 111,347 with positive sentiments, 166,763 with negative sentiments, and 41,517 with neutral sentiments. We set the dates of articles published on weekends or holidays to the next Monday or the next working day, respectively, to conform to the trading-day data available for the OEMFs. Combining articles with the same date, we have 119,884 fund family-day observations with one or more news articles which represent 15% of our total fund family-day observations. Table 2 reports the summary statistics for media coverage and Figure 2 graphs the source and time-series distributions of the news articles.

<Table 2 and Figure 2 about here.>

Before we merge the OEMF data with the media coverage data, we delete OEMF-day observations with missing daily prices. When net daily assets are missing, we interpolate linearly. We remove data points for days before the inception of the OEMF as well as observations for OEMFs with a NAV less than one million dollars (e.g. Fang, Peress, and Zheng, 2014). This results in a deletion of 20,713 observations (0.7%) and 16 distinct OEMFs. Also, some of these data points which have a NAV of 10 dollars seem to be filled manually as placeholders for unreported data.

Consistent with the findings of Niessner and So (2018), we observe that negative news articles account for a greater portion of our news sample. Arguments given to support this finding include corporate managers accumulate and withhold bad news but leak and immediately reveal good news to investors (Kothari, 2005), and the media needs to cover more bad news compared to good news to hypothetically remove informational asymmetry about a firm since information asymmetry between managers and shareholders is higher for negative information (Tetlock, 2010).

4. MODEL AND EMPIRICAL RESULTS

4.1. Flow-Performance Model

We base our regression specification of the relationship between performance and flows on Berk and Green (2004), assuming that investors are rational and seek excess returns (α) where α is a measure of an OEMF's ability to generate excess returns. The excess return at a given date equals α* + € where € is normally distributed with mean zero. Supposing that there are no incoming or outgoing flows, the total increase in the wealth of an OEMF equals its realized return minus its total costs including management fees:

$$NetFnd\$Ret_t = AUM_{t-1} * FndRet - AUM_{t-1} * MER \quad (3)$$

where AUM is the fund's net assets under management, *FndRet* is the fund's gross return which does not reflect the cost of actively managing the fund and is assumed to have a convexly increasing relation with AUM (Berk and Green, 2004); and MER is the fund's management expense ratio. The net fund return per dollar invested *NetFndRet* is equal to Net Fund Dollar Return (*NetFnd$Ret*) divided by AUM. The excess fund return is then calculated by finding the difference between *NetFndRet* and a benchmark return:

$$ExFndRet_t = NetFndRet_t - BenchmarkRet_t = \alpha^* + € = \alpha \quad (4)$$

If rationale, market participants are assumed to exploit any opportunity to allocate more capital to funds with an expected positive α and to redeem their investments from those with a negative α. If investors' expectations of future α are based on realized α, we expect a relationship between an OEMF's net inflows and lagged realized returns. Several studies using monthly returns, including Ippolito (1992) and Sirri and Tufano (1998), find that fund flows respond to prior performance. Kothari (2005) and to a lesser extent Fant and O'Neal (2014) identify an asymmetric relationship where funds with great performance are highly rewarded with increased flows while

the worst performers are not punished to the same extent. Spiegel and Zhang (2013), however, argue that the asymmetry in the flow-performance relationship is a statistical artifact due to the choice of estimation method. Berk and Green (2004) show that an OEMF's size has a convex relation with its MER. Therefore, we include OMEF size in the model as flows may be affected by the relation of MER with firm size.

The baseline model for the net percentage flows of an OMEF is given by:

$$TNFP_{i,t} = \alpha + \beta_1 * FndRet_{i,t-1} + \beta_2 * logAUM_{i,t-1} + \beta_3 * MER_{i,t-1} + \beta_. * Controls_{i,t-1} + e_{i,t} \quad (5)$$

where $TNFP_{i,t}$ is the net percentage flows to OEMF i in day t, AUM is the total assets under management, and $FndRet_{i,t-1}$ is the daily return of OEMF i in day $t-1$. The coefficient β_1 (β_3), which captures the relation between flows and lagged returns (MER), is expected to be a positive (negative) value if fund investors are rational. The sign of β_2 is indeterminate due to the expected convex relation of fund AUM with MER (Berk and Green, 2004). We also control for fund characteristics that the literature shows has an effect on the level of fund flows. We control for the age of the OEMF (Chevalier and Ellison, 1997, among others), volatility of returns (Huang, Wei and Yan, 2004), and family size (Nanda, Wang and Zheng, 2004). The incentive for managers to outperform their competitors is the increase in their management fees with greater market share. However, as the costs of portfolio management increase in a convex fashion with increasing AUM, outperforming is more difficult with an increasing AUM (Chen et al., 2004) whose difficulty becomes stronger for less liquid funds (Yan, 2008; Edelen, 1999). Berk and Green (2004) show theoretically that the flows to/from an OEMF in a perfectly efficient market continue to the point where the expected excess returns for the marginal fund investor converge to zero. At an equilibrium with no excess returns, the flows based on the return expectations of individual investors cease. Therefore, we expect the performance of an OEMF to be inversely affected by its past flows. The performance of an OEMF is also expected to depend on its investment objective and trading strategy (Brown and Goetzmann, 1997). Also, to account for the effect of market movements, we adjust the returns of the OEMFs against the Fama-French 5 factors.

Thus, we use the following model to test for the determinants of fund alphas:

$$Alpha_{i,t} = a + \beta_1 * TNF_{i,t-1} + \beta_2 * logAUM_{i,t-1} + \beta_3 * PODummy_{i,t} + \beta_. * Controls_{i,t-1} + e_{i,t} \quad (6)$$

where $Alpha_{i,t}$ is the benchmark-adjusted return of OEMF *i* in day *t* where the benchmark is the 5-factor model of Fama and French (FF, 2015), *POdummy* is an indicator variable for the investment objective of the OEMF that takes the value of 2 if the objective is Income, 1 if it is Growth, and 0 if it is Aggressive Growth; and all other variables are as previously defined. It is worth noting that all share classes of an OEMF share the same investment portfolio and objective. We control for the investment objective of an OEMF based on a strand of literature which shows that funds with more aggressive objectives tend to generate higher mean excess returns (McDonald, 1974). We control for an OEMF's MER as risk-adjusted returns are found to be inversely related to the expense ratios (Elton et al., 1993). We control for prior day and monthly returns although the evidence for performance persistence is mixed. While Carhart (1997) finds no fund persistence after controlling for FF3 factors and momentum, Berk and Tonks (2007) document performance persistence, especially for the worst performers. Finally, we control for Morningstar ratings although there is no consensus in the literature as to whether Morningstar ratings are good predictors of performance. Blake and Morey (2000) provide evidence that OEMFs with low ratings underperform significantly while those with top ratings do not outperform. In contrast, Morey (2003) reports that a 5-star Morningstar rating causes future performance to fall off severely. Kräuss and Sandelowsky (2006) conclude that the predictive performance of this rating system does not beat a random walk.

4.2. Determinants of Media Mentions

The literature suggests the use of Poisson or negative binomial regressions to model count data, especially for those with high dispersion (e.g. Cameron and Trivedi, 1998). The main advantage of these models is that they do not predict negative values for the count variable (Manner, 2010). Thus, as our main estimation methodology, we examine the determinants of an OEMF's mentions in the media using a log-linear model. Therefore, we estimate the parameters of the following Poisson regression model by maximum likelihood:

$$Count_{i,t} = a + \beta_0 * Count_{i,t-1} + \beta_1 * FndRet_{i,t-1} + \beta_2 * MonthRet_{i,t-1} + \beta_3 * absTNF_{i,t-1} + \beta_4 * Age_{i,t-1} + \beta_5 * Size_{i,t-1} + \beta_6 * Rating_{i,t-1} + \beta_. * Controls_{i,t-1} + e_{i,t} \quad (7)$$

where Count is the total number of news articles mentioning the OEMF, FndRet and MonthRet are the daily and monthly returns of the OEMF, absTNF is the absolute daily flows to the OEMF, Size is the logarithm of assets under management of the OEMF, Rating is the OEMF's Morningstar 5-star Rating, and Age is the age of the OEMF's oldest share class. Our control variables include the management expense ratio, S&P500 daily return, volatility, and prospectus objective of the OEMF. Since the variance of *Count* is high compared to its mean, we also estimate model (7) using the possibly more appropriate negative binomial regression.[5] To address the problem of the null becoming more likely to be rejected for an increasingly large sample size for a given level of significance (Connolly, 1989; Leamer, 1978, Ch. 4; Shanken, 1987), we draw inferences throughout the paper based on significance levels of 0.05%, 0.01% and 0.001%.[6]

Our results reported in Table 3 find persistence in *Count* for both regression specifications of model (7). This is expected as a firm with a news day has a higher than random probability of being followed by another news day in our news sample. Based on consistency in sign and significance for the two estimation methods, we find that media coverage is positively associated with lagged fund size, lagged fund age, lagged S&P500 returns, fund fee waiver, and number of funds in the family, and negatively associated with lagged fund returns, lagged fund volatility, lagged fund monthly return, and fund rating. The positive coefficients for older and larger OEMFs and those from bigger fund families are expected, as these funds interact with a bigger number of investors and possible followers of the media providing the coverage (e.g., Merton, 1987). Jain and Wu (2000) find that the advertised funds in their sample have similar characteristics to the control group, except that they are older and larger. The negative effect from prior returns is logical as the media needs to cover more bad news compared to good news to hypothetically remove informational asymmetry about a firm. In line with this and consistent with the findings of Niessner and So (2018), we observe that negative news articles account for a greater portion of our news sample. We find more support for this finding in the literature, namely, Kothari (2005) argues that corporate managers accumulate and withhold bad news but leak and immediately reveal good news to investors. This suggests that information asymmetry between managers and shareholders is

[5] The data are overdispersed and better estimated using a negative binomial model than a Poisson model if the dispersion parameter, alpha, is significantly greater than zero as is the case in Table 3 where a LR test of the estimated alpha of 5.113 has a p-value of 0.000.

[6] This also helps to address the p-hacking problem that has recently received renewed attention by Harvey (2017) in this presidential address to the American Finance Association.

higher for negative information. Tetlock (2010) views news as a tool which eliminates the information asymmetry among market participants. The higher media coverage for stocks with lower volatility is surprising and is not driven by the effect of volatility on returns. This differs from the finding of Blitz et al. (2020) that stocks with lower return-volatility and higher risk-adjusted returns have lower media mentions. We also run similar tests replacing MER with Distribution Fees (DistFees) of the OEMF and report the results in the Online Supplementary Appendix (OSA) Table A3 which show that DistFee is a stronger predictor of media coverage compared to MER.

<Table 3 about here.>

4.3. Effect of Media Mentions and Their Frequency on OEMF Flows

As grounded in the literature dealing with investor attention (e.g. Merton, 1987), the extra attention received as a result of media coverage serves as a factor which can lead to inflows or outflows to/from the OEMF. Solomon et al. (2012) show that OEMFs whose holdings are covered in the media have extra inflows. Kaniel et al. (2015) report that funds mentioned in the Wall Street Journal "Category Kings" ranking list (and other same-complex funds) earn significant abnormal flows compared to similar funds that just missed the list. Thus, we include two measures of media mentions in Eq. (5) to capture shifts in flows from media-mentions that have changed investors' perceptions of a manager's ability to generate α.

The augmented model becomes:

$$TNFP_{i,t} = \alpha + \beta_0 * AnyArt\ (or\ ArtCnt)_{i,t-1} + \beta_1 * FndRet_{i,t-1} + \beta_2 * MonthRet_{i,t-1} + \beta_3 * Age + \beta_4 * Size + \beta_5 * Rating + \beta_6 * MER_{i,t-1} + \beta_. * Controls_{i,t-1} + e_{i,t} \quad (8)$$

Where *ArtCnt* is the log of the number of news articles mentioning the OEMF plus one and *AnyArt* is a dummy variable which takes the value of 1 if any articles mention the OEMF in a given day and 0 otherwise; and all the other variables are as previously defined. The Hausman test on whether Random or Fixed effects regressions should be chosen favors the RE specification as our baseline model. While a random-effects specification assumes that the omitted variables are uncorrelated with the explanatory variables in the model, a fixed-effects specification reduces concerns about omitted time-invariant variables that impede causal inference. However, as the dollar flows are related to OEMF characteristics such as age and size, we also test a FE specification to ensure that

the results are not driven by firm characteristics rather than media mentions. We control for year-fixed effects in all models and OEMF fixed effects in the fixed-effects estimations. Standard errors are clustered at the OEMF level to alleviate any sampling bias due to the residuals within each OEMF being correlated across years.

The results from the baseline model (8) for the effects of the existence (frequency) of news articles are presented in Table 4. The even and odd numbered columns in Table 4 are estimated using random effects and fixed effects, respectively. Consistent with the information awareness hypothesis, we find that both the existence ($AnyArt_{t-1}$) and frequency ($ArtCnt_{t-1}$) of articles during the previous trading day significantly increase the net dollar flows scaled by AUM (TNFP) to the OEMF, with existence being a stronger predictor of flows. We find that an OEMF's current day's TNFP is positively associated with the OEMF's lagged *TNFP*, *MonthRet*, *AbsTNF* (total value of all sales and redemptions), and *FeeWaiver*, which is consistent with the findings that fee waivers enhance an OEMF's competitiveness (Christoffersen, 2001; Wahal and Wang, 2011). We find that an OEMF's current day's *TNFP* is negatively associated with the previous day's *S&P500* (a relationship between security returns and unexpected flows to mutual funds is found by Warther, 1995) and size of the OEMF (Siri and Tuffano, 1998; Dahlquist et al., 2000). We find no (or no consistently) significant association between an OEMF's current *TNFP* and its lagged *Age* as in Webster (2002) who finds no relation between fund age and objective-adjusted returns, *Rating* which many not be an unbiased measure of a fund's ability as Morey (2002) finds a significant relationship between rating and fund age, *Net MER*, *Vol* and *Funds in Family*. We also run our tests of model (8) replacing *Net MER* with *DistFee* as reported in OSA Table A6 and still find no relationship with flows.

<Table 4 about here.>

4.4. Effect of Media Mentions and Their Frequency on OEMF Performance

We expect that any effect of media mentions on the future performance of OEMFs will be indirect through changes in fund inflows/outflows. Fang and Peress (2009) report "no-media premium" for stocks since stocks with no media coverage outperform highly covered stocks consistent with the "investor recognition" hypothesis of Merton (1987). OEMFs, however, trade at the market value of their holdings and their returns are reliant upon the performance of their

investment portfolios. Therefore, the only ways that the news can affect the returns of an OEMF are either by news covering the holdings of the OEMF (Solomon, Soltes, Sosyura, 2014) or news covering the OEMF itself which increase fund flows and indirectly affect fund returns. An OEMF which is not covered by the media can compensate for the lack of attention by attempting to increase the flows through actions such as window dressing (Carhart, 2002; Duong, Meschke, 2020) or risk shifting (Lee, 2016). However, this might affect the fund's returns adversely as the trading strategies might not be expandable to higher fund sizes (Chen et al., 2004). We extend our model by adding *ArtCnt* to equation (6). Thus, the model used to predict the effect of media mentions on performance is now:

$$Alpha_{i,t} = a + \beta_0 * AnyArt\ (or\ ArtCnt)_{i,t-1} + \beta_1 * TNF_{i,t-1} + \beta_2 * logAUM_{i,t-1} + \beta_3 * POdummy_{i,t} + \beta_. * Controls_{i,t-1} + e_{i,t} \quad (9)$$

where $Alpha_{i,t}$ is the benchmark-adjusted return for fund *i* in period *t* obtained from a two-step procedure using the 5-factor model of Fama and French (FF, 2015) and all the other variables are as previously defined. The five factors in the FF model are the excess return on the market portfolio ($RM_t - RF_t$), the return on a diversified portfolio of small minus big stocks (SMB_t), the difference between the returns on diversified portfolios of high and low book-to-market stocks (HML_t), the difference between the returns on diversified portfolios of stocks with robust and weak profitability (RMW_t), and the difference between the returns on diversified portfolios of the stocks of low and high investment firms (CMA_t). Model (9) is estimated using year-fixed effects without and with OEMF fixed effects.

Our two-step procedure for calculating the benchmark-adjusted returns for fund *i* for day *t* avoids a look-ahead bias and is consistent with those used by Gil-Bazo and Ruiz-Verdu (2009), Ferreira, Keswani, Miguel, and Ramos (2013) and Ayadi, Kryzanowski and Mohebshahedin (2018).[7] In the first step we estimate the standard 5-factor FF (henceforth FF-5) model to obtain the 5-factor betas or sensitivities to be used in the second step for fund *i* and day *t* by running a regression using the excess returns for the fund and the five factors for the last 250 trading days ending with day t-1. In the second step, we compute the benchmark-adjusted daily excess return for fund *i* and day *t* by subtracting the expected return for fund *i* for day *t* from it actual return for

[7] Brennan et al. (1998) propose that our "out-of-sample" method for calculating benchmark-adjusted excess returns eliminates any bias caused by errors in the estimation of factor betas associated with in-sample estimations.

that day where the expected return for fund *i* for day *t* is the sum of the five products of the actual return for a factor in day *t* times its estimated beta from the first step of the procedure. Based on the first-step results presented in OSA Table A1, we find that the five factors explain from 83% to 87% of the variations in excess returns for the funds and that the estimated coefficients for all five factors are significant (OSA Table A1).[8] Based on the summary statistics presented in OSA Table A2, we observe that all fund categories have positive mean net returns (Panel A) but significantly negative mean FF-5 alphas with the Income funds having the most negative mean alphas (Panel B). We also observe that the mean betas are significantly different from zero for all five FF factors.

We report the results for model (9) with the 5-factor alphas as the dependent variable in Table 5. We observe that the existence and higher frequency of media mentions lead to lower performance in the following trading day.[9] This is expected as media coverage will affect performance indirectly through changes in flows and size of the fund, and fund performance has been found to be inversely related to flows and to have a convex relationship with size (Berk and Green, 2004).

<Table 5 about here.>

We also address the endogeneity caused by the omitted variable bias in our panel data. We expect management skill to be positively related to both the size of the OEMF and its performance. However, as we cannot measure skill directly, we need to use an instrumental variable approach to deal with this bias. We follow Pastor and Stambaugh (2015) in using an empirical strategy based on a recursive demeaning procedure to examine the size-performance relationship rigorously. We use two-stage least squares regressions in which the AUM of the OEMFs is used as our instrument. AUM qualifies as a good instrument as it is strongly correlated with the forward-demeaned AUM of the OEMF and is independent of the error term. In our 2SLS setting, we follow Zhu (2018) in the choice of our instrumental variable and in not suppressing the constant to zero. The model we use is as follows:

$$fdAUM_{i,t} = a + \beta_1 * AUM_{i,t} + \beta_. * Controls_{i,t-1} + e_{i,t} \quad (10)$$

[8] In untabulated results, we observe that all fund types have negative alphas with Income funds having the lowest alphas.

[9] As a test of robustness, we use fund net returns as well as excess returns (i.e. in excess of the daily risk-free rate) as the dependent variable in regression specification (9). The results summarized in OSA Tables 7 and 8 are consistent with those using the FF-5 benchmark.

$$fdAlpha_{i,t} = a + \beta_0 * AnyArt\ (or\ ArtCnt)_{i,t-1} + \beta_1 * fdAUM_{i,t} + \beta_. * Controls_{i,t-1} \quad (11)$$

where *fdAUM* is the forward-demeaned assets under management of the OEMF and *fdAlpha* is the forward-demeaned FF-5 benchmark-adjusted returns of the OEMF and the rest of the variables are as defined before. We also run the same 2SLS regression using *fdExFndRet* (i.e., the forward-demeaned excess return of the OEMF) as our dependent variable in the second-stage regression. Based on the results reported in Table 6, we observe that the effect of the size of an OEMF becomes insignificant when using FF-5 excess returns as the dependent variable and that the negative effect of media mentions becomes slightly more pronounced.

<Table 6 about here.>

4.5. Effect of Media Sentiment on OEMF Flows

After considering the attention effect of media coverage, we analyze the learnings of investors based on the media mentions of the OEMFs. The literature arrives at no consensus as to whether individual investors and institutions only become aware of an entity mentioned in the media or they also trade based on the information relayed in the news. Solomon et al. (2014) argue that attempting to infer the content of media mentions relies on an interpretation algorithm which could be problematic. Fang, Peress and Zheng (2014) do not find a significant difference in buys and sells of mutual funds when faced with positive or negative media coverage about stocks. Kaniel and Parham (2017) who report that funds in the top 10 WSJ ranking absorb more flows, do not differentiate between attention and learning effects. If our second hypothesis holds, we expect individual investors to not only pay attention to OEMFs which are covered in the media, but also to rely on the information covered in the news. If that is the case, we expect the positive (negative) news to translate into positive (negative) flows to/from the OEMF in the form of net sales (redemptions). We categorize each of the articles into the three groups of positive, negative, and neutral using a dictionary-based sentiment analysis approach. We use the LM (2011) dictionary for the categorization as it is specifically designed for financial and accounting texts. We use the total number of positive and negative articles as the measure of media sentiment towards an OEMF in a given day. We include our sentiment measures into equation (3) to obtain:

$$TNFP_{i,t} = \alpha + \beta_P * PosCnt_{i,t-1} + \beta_N * NegCnt_{i,t-1} + \beta_1 * FndRet_{i,t-1} + \beta_2 * logAUM_{i,t-1} + \beta_3 * MER_{i,t-1} + \beta_. * Controls_{i,t-1} + e_{i,t} \quad (12)$$

where *PosCnt* (*NegCnt*) is one plus the log of the total number of positive (negative) news articles mentioning OEMF *i*; and the rest of the variables are as defined previously. If the "learning hypothesis" holds, we expect that positive (negative) news have a positive (negative) relation with sales and a negative (positive) relation with redemptions. *TNFP* is winsorized at the 1% level to make sure that the results are not caused by extreme values of *PosCnt* and *NegCnt*.

The multivariate results reported in Table 7 show that only positive articles mentioning an OEMF significantly increase the percentage of flows to the OEMF. Negative articles significantly decrease flows after controlling for the total number of news articles. The effects in terms of Sales and Redemptions are not as pronounced except for a slightly significant negative effect on sales from negative news articles. These results provide partial support for the untabulated univariate findings of an increase in sales, redemptions, and "trading" activity. We can infer from these results that investors pay attention to funds mentioned in the media as there are more flows for funds with more media coverage as shown in Table 5, and that investors increase trade activity when either positive or negative news is observed. We also run t-tests to test whether $\beta_P \neq \beta_N$. The results of the t-tests provided in Appendix B show that observations with positive or negative articles have significantly higher flows than those without news, and that β_P and β_N are significantly different from each other with $\beta_P > \beta_N$. In order to test the differential significance of positive and negative news articles on OEMF flows more rigorously, we next run tests using measures pertaining to the differences in the number of positive and negative news articles covering an OEMF in a given day.

<Table 7 about here.>

When an OEMF is mentioned in both positive and negative news articles on an observation date, we cannot differentiate between the individual effects of *PosCnt* and *NegCnt* using regression formulation (12). To address this concern, we estimate the following two models:

$$TNFP_{i,t} = \alpha + \beta_P * PCntDum_{i,t-1} + \beta_N * NCntDum_{i,t-1} + \beta_1 * ArtCnt_{i,t-1} + \beta_2 * FndRet_{i,t-1} + \beta_3 * logAUM_{i,t-1} + \beta_4 * MER_{i,t-1} + \beta_. * Controls_{i,t-1} + e_{i,t} \quad (13)$$

$$TNFP_{i,t} = \alpha + \beta_{P-N} * P - NCnt_{i,t-1} + \beta_1 * AnyArt_{i,t-1} + \beta_2 * FndRet_{i,t-1} + \beta_3 * logAUM_{i,t-1} + \beta_4 * MER_{i,t-1} + \beta_. * Controls_{i,t-1} + e_{i,t} \quad (14)$$

where *PCntDum* (*NCntDum*) is a dummy variable which equals one if there are more positive (negative) news covering an OEMF in a given day and 0 otherwise. *P-NCnt* is equal to the number of positive minus negative news items covering an OEMF on a given day. If investors trade based on message tone, we expect a significant effect on flows based on $\beta_{P\text{-}N}$ and a significant difference between observations with *PCntDum*=1 and *NCntDum*=1. In order to extract the effect of news sentiment, we control for the total level of media coverage by including $ArtCnt_{i,t-1}$ and $AnyArt_{i,t-1}$ in models (13) and (14), respectively.

The results reported in Table 8 show that having net positive or negative media coverage increases the flows to the funds. More importantly, we observe that OEMFs with more positive (negative) than negative (positive) news items in the previous trading day (do not) have significantly higher (lower) flows compared to those without media mentions. We can infer from these results that negative sentiment does not affect the flows to the funds as strongly as positive sentiment. This also is consistent with findings of a similar asymmetric relationship between fund flows and performance (Kothari, 2005; Fant and O'Neal, 2014). Also, we find a significant relation between $P\text{-}NCnt_{i,t-1}$ and $TNFP_{i,t}$ after controlling for the effect of the existence of media coverage in the previous trading day. The results extend the results reported in Table 7 by suggesting that investors do trade based on the tone of the message, but the effect of sentiment is not as strong as the effect of the existence and frequency of media coverage. To further test this inference, we run a series of robustness tests using $PCntDum \geq k$ and $NCntDum \geq k$ which are dummy variables that take the value of 1 if the number of positive (negative) minus negative (positive) news items covering an OEMF in a given day is greater or equal to k, for k=2 and 3. The results reported in OSA Table A8 do not show a significant change in flows based on the intensity of the tone of the message for these additional tests.

<Table 8 about here.>

4.6. Weekly Effects of Media Coverage

We now run tests on the effect of media mentions on flows and performance of the OEMFs in the next few days after the news date. In order to run these tests, we use *CAF*, which is the Cumulative Net Flows Percentage of the OEMF in the 5-day period following the news-date, and *CAR*, which is the cumulative abnormal returns of the OEMF in the same period. We capture the

effect of four different measures of media coverage and sentiment on weekly flows and performances of the OEMFs. To test the attention hypothesis, we use *AnyArt* and *ArtCnt*, and to test the learning hypothesis, we employ *PCntDum* and *NCntDum* first, and *P-NCnt* next. The results of tests on *CAF* are provided in Table 9 while the regression results with *CAR* as the dependent variable are summarized in Table 10.

<Tables 9 and 10 about here>

The Table 9 results show that the positive effect of media mentions on flows to the OEMFs persist over the one-week period after the news date, while the difference between positive and negative tone media coverage remains a partial factor in terms of flows to the funds. Similar to the results of the daily analyses, we observe that the funds with more positive than negative news articles have significantly higher flows than those without media mentions. Larger funds absorb more weekly flows, while *Age* and *Rating* of the OEMFs are insignificant predictors of flows. The results provide strong support for the Attention hypothesis and limited support for the Learning hypothesis. The results provided in columns (1) and (2) of Table 10 suggest that the negative effect of the existence of media mentions on subsequent performance disappears in the 5-day period following the event, but that the negative effect of frequency remains significant although it diminishes in magnitude. Column (3) shows that news-dates dominated by negative tone articles lead to slightly lower 5-day performance and column (4) shows that the net difference between the number of positive and negative news articles has a significant positive effect on the cumulative abnormal returns of the OEMFs. Combining this result with our previous tests, we can infer that some level of learning based on the tone of the news articles does exist in terms of OEMF performance, and that the effect of such learning is more pronounced on fund performance over longer periods compared to that for a one-day period.

As robustness tests, we use *CAFn* (*CARn*) which excludes the first trading day after the news-date to ensure that the results are not driven by first-day effects. We also create two measures to capture the average weekly flows and performances of the OEMFs. *TNFP_W* (*Alpha_W*) is the average percentage flows to (average FF-5 benchmark-adjusted returns of) the fund in the next five trading days following the news dates. In the few cases where there are not enough observations available or there is another news-date in the subsequent five-day period, we decrease the number of observations used in the estimation of these measures to a minimum of three days.

The results of tests on *CAFn*, *CARn*, *TNFP_W,* and Alpha_*W* are provided in the OSA Tables A10 through A13, respectively. In general, the results are consistent with those of the main tests presented in Tables 9 and 10 with some minor differences.

4.7. Longer-Term Effects of Media Coverage

Media mentions and news articles covering OEMFs may have longer term effects on their flows and performance. To test this, we calculate the monthly flows and returns of each OEMF in our sample and combine our news metrics at monthly and semi-annual levels. In an ideal world, the best approach would be to examine each different news article and observe its effect on the quarterly or annual performance and flows of the mutual funds. However, it is not possible to capture such effects in isolation due to the fact that the long-term flows and performances are affected by other news articles during the period and other factors.

We first test the effect of the existence of media mentions on flows and performances of the OEMFs using variants of the regression models (8) and (9). We calculate the monthly market adjusted returns and flows. We use four different measures of media coverage. The first variable of interest is *AnyArt* which is a dummy variable taking the value of 1 if there are media mentions of an OEMF in a given month and 0 otherwise. *News Months* is the number of months with at least one news article covering an OEMF in the six-month prior period. *ArtCnt* is one plus the log of the total number of news articles covering an OEMF in a given month. *ArtCnt_6m* is the aggregate value of *ArtCnt* in the six-month period. We use the same controls as our daily analysis and use a fixed-effect setting as suggested by the Hausman and F-tests. The results for the effect of media coverage on flows and performances are reported in Tables 11 and 12, respectively.

<Tables 11 and 12 about here.>

The results provided in column (1) of Table 11 show that the existence of media mentions has an effect on the flows of the OEMF in the subsequent month. Moreover, in column (3) we observe that being mentioned in the media in consecutive months leads to more investors investing in the shares of a given OEMF, although the effect is not sizeable compared to that of news articles in the previous months. This is logical if we accept that markets are efficient to some extent and most of the news information is incorporated into prices in the very first month after their publication.

In columns (2) and (4) we observe the effect of the frequency of media mentions in the previous month and the previous semi-annual prior period. The results confirm that news articles mentioning the OEMF in both the previous month and the previous six-month period have a positive effect on the flows of the fund, with the effect of the former being more pronounced as expected. While we find strong persistence in monthly net flow percentages of the OEMFs, we do not observe any significant effect on OEMF flows based on *Age*, *Rating*, or *MER* of the funds. Also as expected, and similar to the daily analyses, OEMFs with a *FeeWaiver* have higher flows and more volatile funds get a lower percentage of flows. In summary, the results of Table 1 support the effect of media coverage on flows through the attention-based channel.

Columns (1) and (2) of Table 12 support the negative effect of media coverage existence and frequency on OEMF performance. From a theoretical standpoint, we expect that the negative effect is caused by the increase in flows and OEMF size and subsequently a decrease in performance. The results conform to what is obtained at the daily level. However, columns (3) and (4) show that these negative effects are diminished at the six-month period. Also, we observe that smaller funds and Income funds outperform their counterparts.

Finally, we test the effects of news sentiment on the flows and performances of OEMFs using variants of regression models (12), (13), and (14). Although we do not find any significant learning effects in our daily setting, there is a possibility that the learning based on the news articles takes more time to be reflected in the flows of the mutual funds. In our long-term analysis we try to capture the learning effects which are not pronounced at the daily level. We use six different measures of News sentiment. The first variable of interest is *PCntDum* (*NCntDum*) which is a dummy variable equal to 1 if there are more positive (negative) news covering an OEMF in a given month and 0 otherwise. *P-NCnt* is equal to the number of positive minus negative news items covering an OEMF during a given month. *Pos Months (Neg Months)* is the number of months with more positive (negative) news article covering an OEMF in the six-month prior period. *P-NCnt_6m* is the aggregate value of *P-NCnt* in the six-month period. The results for the effect of media sentiment on flows and performance are reported in Tables 13 and 14, respectively.

<Tables 13 and 14 about here.>

The results reported in Table 13 do not find any significant effect on OEMF flows based on the directional tone and sentiment of the news, irrespective of the choice of the model. In the first two

columns we test the effects of the existence of more positive (negative) news articles in the previous month as well as the net number of positive articles minus negative articles in that period and find a positive but insignificant effect on OEMF flows based on positive message tone. In column (3) we use *P-NCnt* for a six-month period, and in columns (4) and (5) we observe the number of positive (negative) news months. The results, in general, do not find any evidence supporting investor learning theory regarding OEMF flows over the longer-term periods.

However, the results of Table 14 point to the existence of strong learning effects by market participants in terms of OEMF performance at the longer horizons. In column (1) we observe that having more positive compared to negative news articles in the previous months leads to higher FF-5 benchmark adjusted returns of OEMFs. Columns (2) and (3) show that the net number of positive articles minus negative articles in the previous months has a positive effect on fund performance, but this effect is smaller in the six-month period analysis. Providing more evidence for the effect of media sentiment, columns (4) and (5) show that having a higher number of positive (negative) news months in the previous six months, leads to a significantly higher (lower) benchmark-adjusted return. Although the results of Table 4 show the existence of strong learning effects in terms of fund performance, these results should be interpreted with caution as it is very likely that there is heterogeneity in terms of an omitted unobservable variable correlated with both news coverage and performance in our setting.

5. Additional Tests

5.1. Are our Results Due to Media Coverage of OEMF Holdings

Our previous tests of the possible effects of the media coverage of OEMFs on their flows and performances focused on all the news articles mentioning a given OEMF or its fund family and the sentiment of those mentions. In this section, we conduct some tests of the robustness of the obtained results. First, we account for the aggregate level of daily media coverage surrounding the mutual fund industry. To do so, we construct *AggCnt* as the total number of news articles covering any US mutual fund in each trading day. As previously discussed, we expect the aggregate level of news to have a negative effect on the flows to the mutual fund industry as negative news articles are the predominant part of total coverage. By controlling for the aggregate level of coverage while capturing the effect of a given OEMF's news mentions, we remove the effect of general news

surrounding the industry and the possibility of those news affecting the flows and performances of a specific OEMF.

Moreover, to ensure that we isolate the effect of the news articles directly mentioning and discussing a given OEMF or its fund family from the given OEMF's holdings, we screen all the downloaded news and remove those articles that discuss a mutual fund's holdings rather than the mutual fund itself. This allows us to rerun the tests of flows and performances using OEMF-specific news articles only which we refer to as cleansed media coverage. Similar to our previous variable constructions, we use *ArtCnt-ex* as the log of the number of news articles mentioning the OEMF, and not its holdings, plus one; and *AnyArt-ex* as a dummy variable which takes the value of 1 if any articles mention the OEMF, and not its holdings, and 0 otherwise, to capture the effects of frequency and existence of OEMF-specific media coverage, respectively.

We now run regressions of the effect of the existence and frequency of cleansed media coverage on OEMF flows and performances using Models 8 and 9, respectively. We also include *AggCnt* in our regressions to control for the time-varying behavior of cleansed media coverage. These results for flows are provided in Table 15, and for performance effects in Table 16. In col. (1) and (2), we use *AnyArt-ex* and *ArtCnt-ex* as our measure of cleansed media coverage. In col. (3) we use *NewsPct* which is a measure of the share of a given OEMF from the total daily media coverage of the mutual fund industry, calculated as the total number of news articles mentioning the OEMF divided by *AggCnt*.

<Tables 15 and 16 about here.>

The results provided in Tables 15 and 16 are almost identical to those previously reported in Tables 4 and 5 with both the existence and frequency of (not) cleansed media coverage being positively associated with OEMF flows and negatively related to the FF-5 benchmark-adjusted alphas. Although the significance of the results drops slightly, our results are consistent with the inference that the effects we observe on flows and performances of OEMFs are driven by the media coverage mentioning the funds and their families and not their holdings. This provides additional evidence supporting our first hypothesis.

We then test the effect of the sentiment of cleansed media coverage on flows and performances of OEMFs using model (14). These results are reported in Table 17. Although we do not find the same level of significance as before for the effect of the tone of news articles on flows and performance, we do find that days dominated with positive sentiment lead to higher subsequent flows and performances in the mentioned OEMFs.

<Table 17 about here.>

5.2. Determinants of *Count*

Previously we used Poisson and Negative Binomial to estimate a model with a count dependent variable. In order to test the validity of our results for the determinants of the number of news articles covering the OEMFs, we conduct a series of robustness checks using the version of model (7) where *ArtCnt* replace *Count* using panel regressions. The Breusch-Pagan test on the coefficients of the Pooled OLS and Random effects regressions shows that heteroskedasticity is present in the linear model and therefore that a random effects model is the more efficient estimation method. Nevertheless, we present in OSA Table A4 three panel regression estimations of model (7) with year fixed-effects and the addition of the Growth and Income dummy variables.[10] Col. (2) reports the results from a random-effects regression like col. (1) but also has standard errors clustered at the OEMF level. For completeness, col. (3) reports the regression with OEMF-fixed effects and standard errors clustered at the OEMF level. In this regression model specification, we do not obtain estimates for the covariate, *Income*, because it is time-invariant for each OEMF.

The results reported in OSA Table A4 are consistent with those reported previously in col. (3) of Table 3 and discussed in section 4.2 for the major variable of interest *ArtCnt (L1)*. These results support the existence of a significantly positive impact of the number of news articles mentioning an OEMF in the previous year [*ArtCnt (L1)*] on one plus the log of total number of articles published about an OEMF in the current year. As in col. (3) of Table 3, the following hold in OSA

[10] The dummy-variable trap is avoided by not including a dummy variable for OEMFs with an aggressive growth objective.

Table A4: the significantly negative coefficient for *FndRet (L1)* and for *Age (L1)*, the significantly positive coefficient of *Funds in Family* and the positive coefficient for *Size (L1)* that is significant except in col. (3).

5.3. Analysis at the Fund Family Level

Our previous analyses use data at the OEMF level although the news was downloaded at the fund/fund-family level. A concern that could be advanced is that the characteristics of the fund family such as its size could affect how the media coverage influences the flows to/from its individual funds. To address this possible concern, we test for the determinants of net flows at the fund-family level by using variables aggregated to that level when estimating equation (8) including the interactions of different fund family characteristics such as age, size, and volatility with media mentions.

The results from this test which are reported in Tables 18 and 19 are consistent with the significantly positive effect for both the existence and the frequency of media mentions [i.e. *AnyArt (L1)* in Table 18 and *ArtCnt (L1)* in Table 19] on fund flows. Thus, the existence and frequency of media mentions significantly increase the percentage of flows to the fund and to its fund family. The inverse relation of prior returns [i.e., *FndRet (L1)*] with flows also holds in both tables as was the case for the fund-level regressions (see Table 3). The interaction terms of the existence and the frequency of media mentions with age and with fund family size are negative and significant in regression specifications (1) and (2), which indicate that the effects of the existence and the frequency of media mentions are significantly lower for older and bigger fund families. In contrast, the interaction terms of the existence and the frequency of media mentions with the volatility of daily returns of an OEMF fund family are negative and significant in column (3) in both tables, which indicate that the effects of the existence and the frequency of media mentions are significantly lower for fund families with more volatile daily returns.

<Tables 18 and 19 about here.>

5.4. Spillover effects among OEMFs run by the same management company

In the previous section we examined possible spillover effects among OEMFs of the same fund family. In this section, we test whether news articles about other funds managed by the same management company have any spill-over effects on the flows and FF-5 alphas of the OEMF of interest. We expect to observe secondary effects from such media mentions as they are expected to lead to more investor attention for their management company and the funds it manages.

To conduct our analysis, we first remove the OEMFs from our sample for which the management company is the same as the fund advisor, as the former have already been accounted for. We use *MgrArtCnt* as the log of the number of news articles mentioning other funds managed by an OEMF's management company plus one; and *MgrAnyArt* as a dummy variable which takes the value of 1 if any articles mention other funds managed by an OEMF's management company and 0 otherwise. The results for tests of spillover effects both in terms of the flows and performances of the OEMFs of interest are provided in Table 20. We find that news articles mentioning other funds under the management of a given OEMF's management company have a significant effect on the flows to it at the 1% level, but no significant performance effects. The significance holds irrespective of the choice of the model. These results suggest that spillover effects only account for a small fraction of the effects of media coverage for fund flows.

<Table 20 about here.>

6. Conclusion

The literature finds that the media influences individual perceptions and affects the social, economic, and financial landscapes. The mutual fund industry provides an ideal laboratory for testing the effects of media coverage on investor perceptions since the shareholder bases of many funds consist of retail (individual) investors and media coverage has no first-order effects on the valuations of open-ended mutual funds (OEMFs). We examine two channels through which media coverage is expected to affect the cash flows and performances of OEMFs. The first is the effect of awareness-based buying behaviour of investors. As explained by Merton (1987), the appearance of a security in the media may encourage potential investors to include the security in their limited

"consideration set" when search is costly. The second is the learning channel which results from investors being exposed to the message content and its tone (positive, negative or neutral). The literature has previously found significant effects on flows for mutual funds based on the media coverage of fund holdings. In this paper, we examine the effects on fund and family flows and performances when the news coverage is for the OEMFs or their fund families.

We find that both the existence and frequency of media articles in the previous trading day significantly increase the flows to the OEMF and the effect is stronger for the existence of media articles. However, performance diminishes following a news date irrespective of our choice of regression specification. The absolute net flows of the fund in the previous day acting as a proxy for the level of "trading" volume have a positive and significant effect on the level of media coverage. The likelihood of media coverage is higher for bigger and older funds but the effects on their flows are lower from greater media coverage. We find Spillover effects to be responsible for a small fraction of the effects of media coverage on flows and performances. In Our Weekly and Monthly Analyses, we find similar patterns in terms of the effects of existence and frequency of media coverage on flows and performances.

While both "attention" and "learning" effects increase the flows to the OEMF if the tone of the news is positive, their effects are in opposite directions for negative news articles. We also observe significant flows to OEMFs with more positive news coverage in our weekly analysis. Moreover, we find some evidence that the tone of news articles affects OEMF performance over the longer-term. While our results are consistent with the existence of both "Attention-based" buying behaviour and "Learning" effects, the evidence is stronger for the "Investor Awareness" channel. To summarize our findings, the mere mention of an OEMF's name in the media is an important driver of the OEMF's flows and performances, and the sentiment implicit in these mentions is important in determining the directional effects of that news on the OEMF's flows and performances.

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Figure 1: Depiction of media coverage to investor fund flows to OEMF decisions and performance

This figure depicts the relationship of the media coverage of an OEMF with its subsequent net flows and performances.

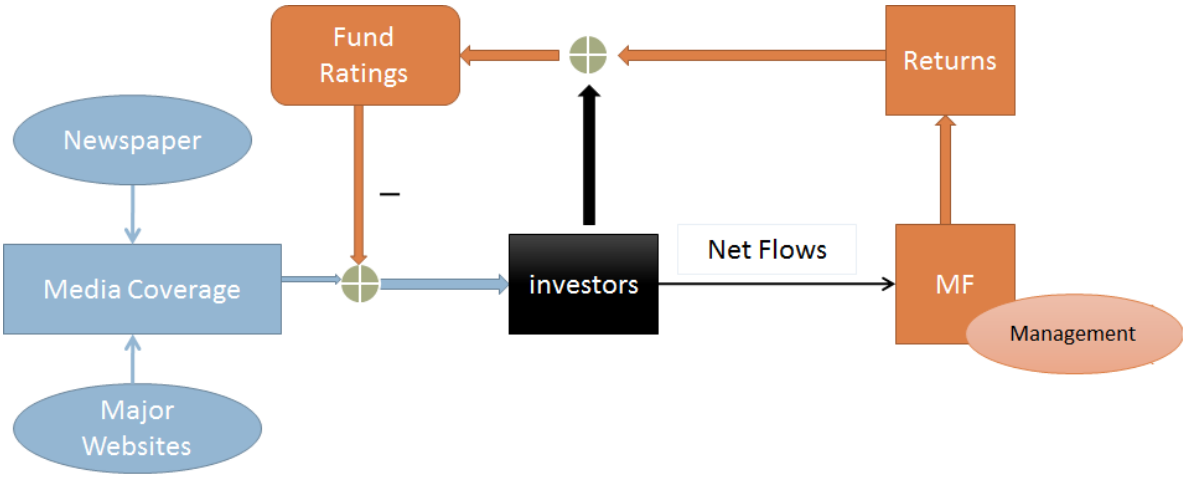
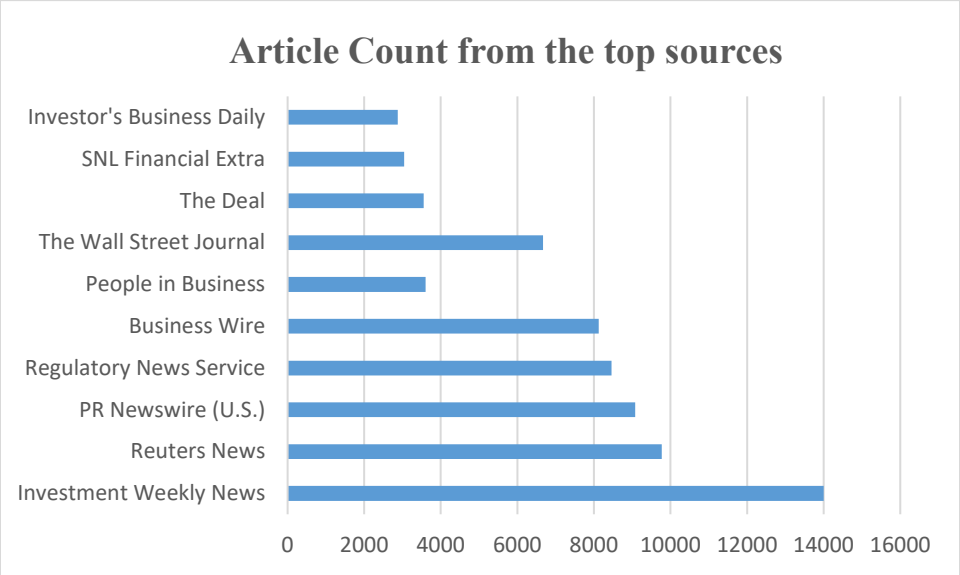


Figure 2: Summary Statistics of Media Coverage by Sources and Dates.

Panel A shows the top sources with more news articles in our sample except Dow Jones which is the top source with 155,672 news articles. Panel B graphs the time-series changes in the total number of news articles covering the mutual fund industry and the average number of new articles per fund during the sample period.

Panel A:



Panel B:

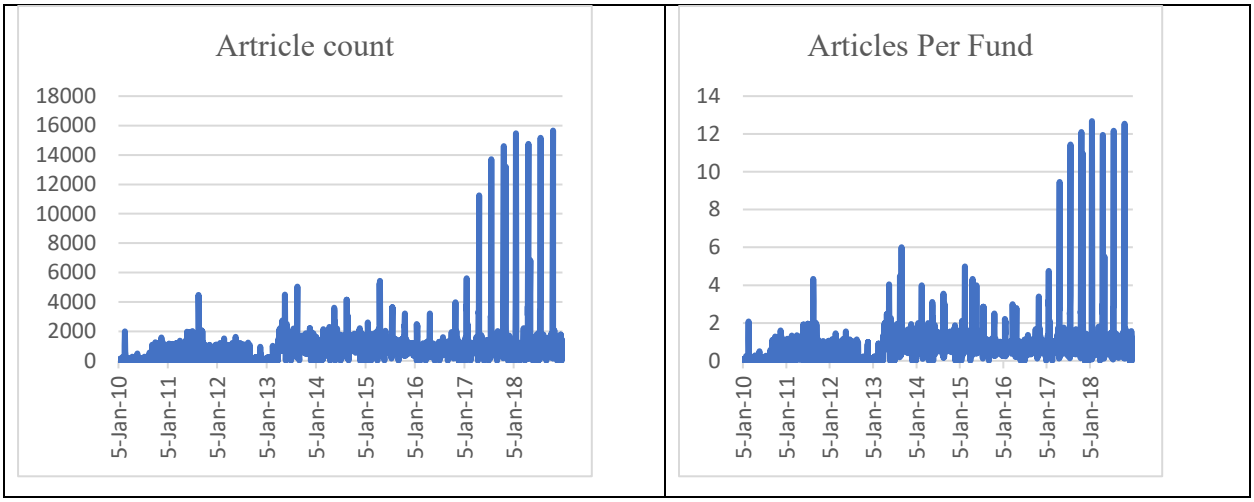


Table 1. Descriptive Statistics for the Sample of Equity OEMFs

This table presents the summary statistics for the OEMF sample characteristics and covariates whose definitions are found in Appendix A. The sample consists of observations for 1505 distinct OEMFs with the Morningstar investment category of "Equity" over the period from 2010 to 2018. The data have been downloaded at the share-class level and aggregated to the OEMF level by combining the share classes of the same OEMF.

Variables	Average	Std. Dev.	Median	Min	Max	Skewness	P1	P99
Shares Outstanding (Mil)	60.710	158.900	16.400	0.000	3918	9.278	0.137	650.800
Net Assets ($Mil)	1233.273	4482.209	276.089	0.001	199889.800	22.090	1.800	13500.150
Funds in Family	9.833	7.986	7.000	1.000	37.000	0.627	1.000	27.000
Size	5.497	2.005	5.620	-6.908	12.210	-0.367	0.588	9.510
DFP ($)	21.500	35.500	15.654	0.930	1151.860	17.430	5.300	79.830
Age (Years)	14.250	11.910	12.273	0.003	94.530	2.211	0.247	64.750
Rating (1-5)	2.933	1.033	3.000	1.000	5.000	-0.024	1.000	5.000
Fee Level (1-5)	3.101	0.953	3.000	1.000	4.000	-0.826	1.000	4.000
NETMER (%)	1.122	0.588	1.140	-2.644	15.150	3.632	-0.335	2.485
GMER (%)	1.635	4.355	1.230	-2.644	233.800	28.600	-0.335	9.485
FeeWaiver (0-1)	0.610	0.488	1.000	0.000	1.000	-0.450	0.000	1.000
DistFee (%)	0.434	0.832	0.443	0.000	56.050	54.320	0.007	0.999
Return Characteristics								
FndRet (%)	0.037	0.992	0.072	-5.000	5.000	-0.306	-2.946	2.569
Vol (%)	0.928	0.474	0.807	0.000	4.666	1.792	0.314	2.589
ExFndRet (%)	0.035	0.992	0.070	-5.006	5.000	-0.306	-2.948	2.568
MonthRet (%)	0.006	0.052	0.010	-0.800	8.126	30.670	-0.138	0.103
Alpha (%)	-0.011	0.311	-0.005	-10.450	7.057	-1.569	-0.889	0.788
ExMktRet (%)	0.048	0.937	0.060	-6.970	5.060	-0.304	-2.680	2.400
SMB (%)	-0.001	0.515	0.000	-1.990	3.620	0.191	-1.320	1.310
HML (%)	-0.008	0.491	-0.030	-1.830	2.390	0.356	-1.220	1.420
RMW (%)	0.004	0.338	0.000	-1.630	1.660	0.013	-0.800	0.880
CMA (%)	0.001	0.304	-0.010	-1.320	1.960	0.337	-0.720	0.790
RF (%)	0.001	0.002	0.000	0.000	0.010	1.798	0.000	0.008
Flows Characteristics								
TNF (%)	0149	23.406	-0.003	-8214.710	20312.630	362.672	-9.746	11.108
AbsTNF ($Mil)	1.458	10.500	0.146	0.000	20312.630	407.052	0.000	18.700
TNFP (%)	1.594	0.370	-0.636	-39.992	99.98	4.405	-8.6200	12.75
AbsTNFP (%)	0.153	0.398	0.059	0.000	42.480	15.080	0.001	1.842
Sales ($Mil)	0.736	10.370	0.015	0.000	11118.000	528.500	0.000	11.540
Redemption ($Mil)	0.717	6.047	0.034	0.000	2874.000	101.300	0.000	10.700
SaleP (%)	0.277	132.200	0.009	0.000	168048.000	994.800	0.000	1.339
RedemP (%)	0.123	47.340	0.018	0.000	65091.000	1171.000	0.000	0.933
News Characteristics								
AnyArt	0.192	0.394	0.000	0.000	1.000	1.568	0.000	1.000
Count	0.685	2.635	0.000	0.000	133.000	11.690	0.000	11.000
ArtCnt	0.240	0.568	0.000	0.000	4.898	2.669	0.000	2.485
NET	-0.098	1.025	0.000	-51.000	35.000	-7.674	-4.000	2.000
PosCnt	0.068	0.254	0.000	0.000	3.611	4.186	0.000	1.386
NegCnt	0.101	0.343	0.000	0.000	3.951	3.900	0.000	1.792

Table 2. Summary Statistics for News and News-date Articles

This table presents the summary statistics for the news sample. Panel A provides the summary statistics for all the individual articles in the sample. Panel B provides the statistics on the article-date observations. The articles with the same date mentioning the same OEMF are combined. N is the number of articles in Panel A and the number of article-date observations in Panel B. Panel C provides the correlation coefficient matrix of OEMF characteristics and news metrics. All the variables are defined in Appendix A.

Variables	Average	Std. Dev.	Min	p25	p50	p75	Max
Panel A: News articles (N = 319,647)							
Word Count	447.70	1,011.61	1	166	215	515	81,300
Positive Words	4.16	11.52	0	0	1	5	753
Negative Words	6.09	16.49	0	1	1	7	1,364
Uncertain Words	3.78	13.99	0	0	0	4	1,807
Avg Syllables	1.82	0.22	1.21	1.64	1.79	2.04	3
Sentiment Score1	-3.69	14.81	-166.67	-6.29	-4.70	0.73	200.00
Sentiment Score2	-0.16	0.45	-0.99	-0.50	-0.23	0.04	0.99
Positive Article	0.17	0.37					
Negative Article	0.30	0.46					
Neutral Article	0.53	0.49					
Panel B: News-date articles (N = 109,342)							
Total Words	1,309	2,286	1	323	669	1,413	95,106
Positive Words	12.17	25.01	0	1	5	14	753
Negative Words	17.82	38.26	0	1	6	19	1,484
Uncertain Words	11.05	29.09	0	0	3	12	2,074
Positive Articles	0.49	0.96	0	0	0	1	36
Negative Articles	0.89	1.72	0	0	0	1	51
Neutral Articles	1.54	3.09	0	0	1	2	92
Sentiment Score1	-0.08	0.41	-0.99	-0.44	-0.06	0.18	0.99
Sentiment Score2	-2.84	13.89	-150.15	-6.89	-1.78	3.71	129.19

Panel C: Correlation Coefficients Matrix

Variables	*Count*	*NEG*	*NTL*	*POS*	*Size*	*Age*	*Rating*	*Return*	*TNF*
(1) Count	1.00								
(2) NEG	0.79	1.00							
(3) NTL	0.90	0.51	1.00						
(4) POS	0.48	0.28	0.24	1.00					
(5) Size	-0.01	-0.01	-0.00	-0.01	1.00				
(6) Age	0.01	0.01	0.01	0.00	0.41	1.00			
(7) Rating	-0.01	0.01	-0.01	0.00	0.15	0.02	1.00		
(8) Return	-0.01	-0.00	-0.00	-0.00	0.00	-0.01	0.01	1.00	
(9) TNF	-0.00	-0.00	-0.00	-0.00	0.01	-0.01	0.01	-0.01	1.00

Table 3. Tests of Count Determinants

This table reports results for the determinants of media coverage based on 2,276,126 observations for 1306 distinct OEMFs. The dependent variable is the number of articles published about an OEMF in a given year. Columns (1) and (2) report results using a Poisson and a Negative Binomial Regression, respectively. Both columns control for year-fixed effects. Since *exponential coefficients* are reported in both columns, a value less than one indicates a negative relation with the dependent variable. Z-statistics are presented in square brackets. (L1) after the variable name denotes that the variable is lagged by one trading day. ∗, ∗∗, and ∗∗∗ indicate statistical significance at the 5%, 1%, and 0.1% level, respectively. All the variables are defined in Appendix A.

Variables	(1) Poisson *Count*		(2) Negative Binomial *Count*	
Count (L1)	1.0594***	[1,332.024]	1.4471***	[341.910]
FndRet (L1)	0.9359***	[-38.174]	0.9225***	[-23.807]
MonthRet (L1)	0.8955***	[-112.252]	0.9362***	[-27.980]
AbsTNF (L1)	1.0034***	[17.206]	0.9997	[-0.160]
Age (L1)	1.0647***	[78.398]	1.0537***	[25.936]
Size (L1)	1.1006***	[98.169]	1.0970***	[41.547]
Rating (L1)	0.8955***	[-127.925]	0.9253***	[-39.334]
Net MER	1.0585***	[36.430]	0.9988	[-0.359]
FeeWaiver = 1	1.5769***	[254.035]	1.2362***	[52.833]
S&P 500 (L1)	1.0639***	[35.901]	1.0635***	[17.880]
Vol (L1)	0.8763***	[-138.396]	0.9264***	[-37.245]
Funds in Family	1.0540***	[502.534]	1.0421***	[150.757]
Growth Fund	1.0125**	[1.973]	0.9240***	[-5.628]
Income Fund	1.0634***	[9.170]	1.0972***	[6.109]
Constant	0.2314***	[-215.642]	0.1969***	[-108.293]
Chi-Squared			3224567.866	
(Pseudo) R^2	0.138		0.074	
Alpha			5.113***	

Table 4. Effect of the Existence and Frequency of Daily Media Mentions on OEMF Flows

This table reports the panel regression results for regression model (8) on OEMF flows from the existence and frequency of daily media mentions and controls based on 2,266,400 observations for 1306 distinct OEMFs. The dependent variable is the net percentage flows to the OEMF. The measure of news existence is *AnyArt* that is a dummy variable which takes the value of 1 if there are any articles mentioning the OEMF during the day and 0 otherwise. The measure of news frequency is *ArtCnt* which is the log of the total number of news articles mentioning the OEMF plus one in each day. Columns (1) and (2) capture the effects of the existence of at least one daily media mention and columns (3) and (4) focus on the frequency of daily media mentions. The odd and even numbered columns are estimated using random effects and fixed effects, respectively. *(L1)* after the variable name shows that the variable is lagged by one trading day. All the variables are defined in Appendix A. Standard errors are clustered at the OEMF level. All the regression specifications control for year-fixed effects. Estimations in columns (2) and (4) also control for OEMF fixed effects. The t-statistics are reported in the parentheses. ∗, ∗∗, and ∗∗∗ indicate statistical significance at the 5%, 1%, and 0.1% level, respectively.

	(1)	(2)	(3)	(4)
Variables	*TNFP*	*TNFP*	*TNFP*	*TNFP*
AnyArt (L1)	0.0474***	0.0480***		
	(12.104)	(12.212)		
ArtCnt (L1)			0.0240***	0.0245***
			(7.062)	(7.174)
FndRet (L1)	-0.0378***	-0.0378***	-0.0378***	-0.0378***
	(-16.696)	(-16.694)	(-16.698)	(-16.696)
TNFP (L1)	0.0220***	0.0219***	0.0220***	0.0220***
	(3.421)	(3.438)	(3.423)	(3.441)
MonthRet (L1)	0.0264***	0.0264***	0.0264***	0.0264***
	(3.073)	(3.072)	(3.072)	(3.071)
S&P 500	-0.0083***	-0.0083***	-0.0083***	-0.0084***
	(-8.658)	(-8.666)	(-8.673)	(-8.680)
AbsTNF (L1)	0.0044**	0.0043**	0.0044**	0.0044**
	(1.981)	(1.968)	(1.990)	(1.977)
Age (L1)	-0.0160*	0.0093	-0.0161*	0.0091
	(-1.689)	(0.489)	(-1.698)	(0.481)
Size (L1)	-0.1211***	-0.1257***	-0.1209***	-0.1254***
	(-7.741)	(-7.593)	(-7.719)	(-7.573)
Rating (L1)	0.0000	-0.0020	-0.0002	-0.0022
	(0.003)	(-0.191)	(-0.020)	(-0.212)
Net MER	-0.0037	0.0032	-0.0037	0.0032
	(-0.277)	(0.262)	(-0.276)	(0.261)
FeeWaiver = 1	0.0384***	0.0392***	0.0383***	0.0391***
	(3.441)	(3.480)	(3.435)	(3.473)
Vol (L1)	-0.0013	-0.0013	-0.0012	-0.0013
	(-0.285)	(-0.296)	(-0.273)	(-0.284)
Funds in Family	-0.0004	-0.0026	-0.0003	-0.0025
	(-0.195)	(-1.022)	(-0.142)	(-0.978)
Growth Fund	0.0643	0.0902***	0.0637	0.0940***
	(1.644)	(6.510)	(1.636)	(6.774)
Income Fund	0.1142**		0.1130**	
	(2.115)		(2.079)	
Constant	-0.0401	-0.0530**	-0.0378	-0.0550**
	(-0.930)	(-2.068)	(-0.880)	(-2.141)
Within R^2		0.009		0.009
R^2	0.007	0.003	0.007	0.003
Clustered SE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
OEMF FE		YES		YES

Table 5. Effect of Existence/Frequency of Daily Media Mentions on OEMF Performance Based on FF-5 benchmark

This table reports the panel regression results for OEMF performance based on the existence/frequency of daily media mentions and fund performance based on 2,265,869 observations for 1306 distinct OEMFs. The dependent variable is the Fama-French five-factor-adjusted return (FF-5) of the OEMF or *FF-5 Alpha*. The measure of news existence is *AnyArt* which is a dummy variable which takes the value of 1 if there are any articles for the day mentioning the OEMF and 0 otherwise. The measure of news frequency is *ArtCnt* which is the log of the total number of news articles mentioning the OEMF plus one in each day. Results presented in columns (1) and (2) capture the effects of the existence of at least one news article for the fund during a day and those in columns (3) and (4) focus on the frequency of daily media mentions for the fund. Standard errors are clustered at the OEMF level. (L1) after the variable name shows that the variable is lagged by one trading day. All the variables are defined in Appendix A. All the regression specifications control for year-fixed effects. The results presented in columns (2) and (4) also control for OEMF fixed effects. The t-statistics are reported in the parentheses. ∗, ∗∗, and ∗∗∗ indicate statistical significance at the 5%, 1%, and 0.1% level, respectively.

Variables	(1) *FF-5 Alpha*	(2) *FF-5 Alpha*	(3) *FF-5 Alpha*	(4) *FF-5 Alpha*
AnyArt (L1)	-0.0016***	-0.0020***		
	(-2.923)	(-3.296)		
ArtCnt (L1)			-0.0015***	-0.0019***
			(-4.003)	(-4.329)
FndRet (L1)	0.0103***	0.0103***	0.0103***	0.0103***
	(17.531)	(17.479)	(17.530)	(17.478)
MonthRet (L1)	-0.0037***	-0.0039***	-0.0037***	-0.0039***
	(-3.424)	(-3.445)	(-3.424)	(-3.445)
TNF (L1)	0.0005**	0.0005**	0.0005**	0.0005**
	(2.218)	(2.262)	(2.217)	(2.261)
Age (L1)	0.0016***	-0.0149	0.0016***	-0.0149
	(5.813)	(-1.056)	(5.836)	(-1.057)
Size (L1)	-0.0040***	-0.0120***	-0.0040***	-0.0119***
	(-11.035)	(-11.845)	(-11.019)	(-11.825)
Rating (L1)	0.0046***	0.0034***	0.0046***	0.0034***
	(14.597)	(5.181)	(14.565)	(5.195)
Net MER	-0.0002	-0.0035*	-0.0001	-0.0035*
	(-0.118)	(-1.667)	(-0.108)	(-1.671)
FeeWaiver = 1	-0.0008	-0.0019**	-0.0008	-0.0019**
	(-1.455)	(-2.510)	(-1.393)	(-2.496)
Vol (L1)	-0.0060***	-0.0063***	-0.0060***	-0.0063***
	(-10.605)	(-10.621)	(-10.603)	(-10.619)
Funds in Family	0.0002***	0.0012***	0.0002***	0.0012***
	(3.834)	(6.392)	(3.978)	(6.456)
Growth Fund	-0.0056***	0.0181***	-0.0056***	0.0180***
	(-3.290)	(21.189)	(-3.273)	(21.157)
Income Fund	-0.0145***		-0.0145***	
	(-7.535)		(-7.514)	
Constant	0.0078***	-0.0261***	0.0077***	-0.0260***
	(2.937)	(-4.876)	(2.884)	(-4.876)
Within R^2		0.002		0.002
R^2	.0020	.0004	.0020	.0004
Clustered SE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
OEMF FE		YES		YES

Table 6. Effect of the Existence and Frequency of Daily Media Mentions on OEMF Performance

This table reports the panel 2SLS regression results for OEMF performance based on the existence/frequency of daily media mentions and fund performance. The dependent variable is the forward-demeaned OEMF Return in models (1) and (2) and the forward-demeaned FF-5 returns of the OEMF or Alpha in models (3) and (4). The measure of news existence is *AnyArt* which is a dummy variable which takes the value of 1 if there are any articles for the day mentioning the OEMF and 0 otherwise. The measure of news frequency is *ArtCnt* which is the log of the total number of news articles mentioning the OEMF plus one in each day. Results presented in columns (2) and (4) capture the effects of the existence of at least one news article for the fund during a day and those in columns (1) and (3) focus on the frequency of daily media mentions for the fund. Standard errors are clustered at the OEMF level. (L1) after the variable name shows that the variable is lagged by one trading day. All the variables are defined in Appendix A. All the regression specifications control for year-fixed effects. The results presented in columns (2) and (4) also control for OEMF fixed effects. The t-statistics are reported in the parentheses. ∗, ∗∗, and ∗∗∗ indicate statistical significance at the 5%, 1%, and 0.1% level, respectively.

	(1)	(2)	(3)	(4)
Variables	*fdExFndRet*	*fdExFndRet*	*fdalpha*	*fdalpha*
AnyArt (L1) = 1		-0.0118***		-0.0023***
		(-5.998)		(-3.734)
ArtCnt (L1)	-0.0092***		-0.0022***	
	(-6.596)		(-5.039)	
fdAUM	0.0000***	0.0000***	-0.0000	-0.0000
	(5.138)	(5.139)	(-0.861)	(-0.872)
FndRet (L1)	0.0027***	0.0027***	0.0104***	0.0104***
	(3.996)	(3.996)	(49.994)	(49.996)
MonthRet (L1)	-0.0796***	-0.0796***	-0.0038***	-0.0038***
	(-110.194)	(-110.173)	(-16.876)	(-16.853)
TNF (L1)	0.0010	0.0010	0.0005***	0.0005***
	(1.615)	(1.617)	(2.775)	(2.773)
Age (L1)	-0.0002	-0.0001	-0.0142***	-0.0142***
	(-0.025)	(-0.021)	(-7.486)	(-7.479)
Rating (L1)	-0.0038*	-0.0038**	-0.0024***	-0.0024***
	(-1.951)	(-1.985)	(-4.054)	(-4.077)
Net MER	0.0026	0.0026	-0.0006	-0.0006
	(0.619)	(0.626)	(-0.462)	(-0.454)
FeeWaiver = 1	0.0008	0.0008	-0.0002	-0.0002
	(0.374)	(0.353)	(-0.275)	(-0.291)
Vol (L1)	-0.1149***	-0.1149***	-0.0058***	-0.0058***
	(-136.785)	(-136.760)	(-22.221)	(-22.200)
Funds in Family	0.0015***	0.0015***	0.0008***	0.0008***
	(2.858)	(2.804)	(4.666)	(4.590)
Income Fund	-0.0074	-0.0065	0.0189	0.0191
	(-0.167)	(-0.147)	(1.376)	(1.387)
Constant	0.1067***	0.1065***	-0.0129	-0.0129
	(2.673)	(2.667)	(-1.037)	(-1.038)
Observations	2,266,400	2,266,400	2,265,869	2,265,869
Number of OEMFs	1,306	1,306	1,306	1,306
R^2	.010	.010	.000	.000
Clustered SE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
OEMF FE	YES	YES	YES	YES

Table 7. Effect of the Tone of Media Mentions on OEMF Sales and Redemptions

This table reports the panel regression results for OEMF flows based on the existence and frequency of media mentions in a day and controls. The dependent variable is the net percentage flow (*TNFP*) in the regression results reported in columns (1) and (2), percentage of sales (*SaleP*) in the regression results reported in columns (3) and (4), and percentage of redemptions (*RedemP*) in the regression results reported in columns (5) and (6). *PosCnt* (*NegCnt*) is one plus the log of total number of positive (negative) news articles mentioning an OEMF in a given day. Standard errors are clustered at the OEMF level. (L1) after the variable name shows that the variable is lagged by one trading day. All the variables are defined in Appendix A. All the regression specifications control for year-fixed effects and OEMF fixed effects. The t-statistics are reported in the parentheses. ∗, ∗∗, and ∗∗∗ indicate statistical significance at the 5%, 1%, and 0.1% level, respectively.

Variables	(1) *TNFP*	(1) *TNFP*	(3) *SaleP*	(3) *SaleP*	(5) *RedemP*	(5) *RedemP*
PosCnt (L1)	0.0183***		-0.0021		-0.0019	-0.0094
	(2.978)		(-1.529)		(-1.563)	(-1.595)
NegCnt (L1)	0.0085	-0.0305***	-0.0009	-0.0133*	-0.0008	
	(1.972)	(-5.094)	(-1.004)	(-1.899)	(-1.028)	
ArtCnt (L1)		0.0375***		0.0108*		0.0067
		(9.727)		(1.930)		(1.565)
TNFP (L1)	0.0220***	0.0220***	0.1254***	0.1254***	0.0003	0.0003
	(3.438)	(3.441)	(22.150)	(22.135)	(0.737)	(0.728)
FndRet (L1)	-0.0378***	-0.0378***	-0.0022**	-0.0022**	-0.0014	-0.0014
	(-16.705)	(-16.692)	(-2.054)	(-2.056)	(-1.611)	(-1.611)
MonthRet (L1)	0.0263***	0.0264***	-0.0013	-0.0013	-0.0019	-0.0019
	(3.069)	(3.070)	(-1.468)	(-1.465)	(-1.592)	(-1.596)
S&P 500	-0.0084***	-0.0083***	-0.0017*	-0.0017*	-0.0015	-0.0014
	(-8.735)	(-8.675)	(-1.855)	(-1.855)	(-1.549)	(-1.549)
AbsTNF (L1)	0.0044**	0.0044**	-0.0017***	-0.0017***	-0.0009	-0.0009
	(1.986)	(1.984)	(-2.709)	(-2.699)	(-1.531)	(-1.557)
Age (L1)	0.0090	0.0091	-0.4038	-0.4037	-0.3097	-0.3097
	(0.473)	(0.477)	(-0.980)	(-0.980)	(-0.989)	(-0.989)
Size (L1)	-0.1252***	-0.1254***	-0.0886**	-0.0887**	-0.0738*	-0.0739*
	(-7.566)	(-7.571)	(-2.295)	(-2.295)	(-1.771)	(-1.771)
Rating (L1)	-0.0024	-0.0023	0.0038	0.0039	0.0074	0.0074
	(-0.228)	(-0.221)	(1.372)	(1.373)	(1.494)	(1.494)
Net MER	0.0031	0.0053	-0.0113*	-0.0193*	-0.0102	-0.0173
	(0.255)	(0.252)	(-1.902)	(-1.902)	(-1.517)	(-1.517)
FeeWaiver = 1	0.0392***	0.0392***	-0.0136*	-0.0136*	-0.0147	-0.0147
	(3.475)	(3.481)	(-1.845)	(-1.845)	(-1.527)	(-1.527)
Vol (L1)	-0.0014	-0.0012	0.0001	0.0001	-0.0004	-0.0003
	(-0.309)	(-0.275)	(0.044)	(0.070)	(-0.333)	(-0.307)
Funds in Family	-0.0021	-0.0026	0.0020*	0.0018*	0.0018*	0.0016*
	(-0.825)	(-1.008)	(1.882)	(1.854)	(1.711)	(1.706)
Constant	0.0273	0.0228	-0.1547	-0.1326	-0.1194	-0.0996
	(1.034)	(0.652)	(-1.147)	(-1.004)	(-1.151)	(-1.001)
Within R^2	0.008	0.009	0.008	0.008	0.002	0.002
R^2	0.004	0.004	0.000	0.000	0.000	0.000
Clustered SE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
OEMF FE	YES	YES	YES	YES	YES	YES

Table 8. Effects of the Directional Tone of Media Mentions on OEMF Flows

This table reports the panel regression results for OEMF flows based on the directional tone (i.e., positive or negative) of media mentions for each OEMF for each day and controls. The dependent variable is the net percentage flows (*TNFP*). *P-NCnt* equals the number of positive minus negative news items covering an OEMF in a given day. *PCntDum* (*NCntDum*) is a dummy variable equal to one when more positive (negative) news covers the OEMF on a given day and is equal to 0 otherwise. The odd and even numbered regression specifications are estimated including MER and not including MER, respectively. All the regression specifications control for year-fixed effects and additionally for OEMF fixed effects in the even numbered columns. Standard errors are clustered at the OEMF level. (L1) after the variable name shows that the variable is lagged by one trading day. All the variables are defined in Appendix A. The t-statistics are reported in the parentheses. ∗, ∗∗, and ∗∗∗ indicate statistical significance at the 5%, 1%, and 0.1% level, respectively.

Variables	(1) *TNFP*	(2) *TNFP*	(3) *TNFP*	(4) *TNFP*
NCntDum=1	-0.0029	-0.0029		
	(-0.447)	(-0.442)		
PCntDum=1	0.0132**	0.0131**		
	(2.278)	(2.258)		
P-NCnt (L1)			0.0023**	0.0023**
			(2.278)	(2.223)
ArtCnt (L1)	0.0227***	0.0232***		
	(5.029)	(5.125)		
AnyArt (L1) = 1			0.0482***	0.0488***
			(12.365)	(12.471)
TNFP (L1)	0.0220***	0.0220***	0.0220***	0.0219***
	(3.422)	(3.440)	(3.421)	(3.438)
FndRet (L1)	-0.0378***	-0.0378***	-0.0378***	-0.0378***
	(-16.706)	(-16.702)	(-16.697)	(-16.693)
MonthRet (L1)	0.0264***	0.0264***	0.0264***	0.0264***
	(3.072)	(3.071)	(3.072)	(3.071)
S&P 500	-0.0084***	-0.0084***	-0.0083***	-0.0083***
	(-8.681)	(-8.686)	(-8.667)	(-8.672)
AbsTNF (L1)	0.0044**	0.0044**	0.0044**	0.0043**
	(1.992)	(1.979)	(1.982)	(1.969)
Age (L1)	-0.0164*	0.0092	-0.0163*	0.0093
	(-1.720)	(0.484)	(-1.716)	(0.490)
Size (L1)	-0.1209***	-0.1254***	-0.1211***	-0.1257***
	(-7.721)	(-7.574)	(-7.742)	(-7.593)
Rating (L1)	-0.0002	-0.0024	0.0001	-0.0021
	(-0.016)	(-0.228)	(0.008)	(-0.204)
Net MER	-0.0063	0.0055	-0.0064	0.0054
	(-0.278)	(0.260)	(-0.281)	(0.259)
FeeWaiver = 1	0.0383***	0.0391***	0.0384***	0.0392***
	(3.436)	(3.472)	(3.443)	(3.480)
Vol (L1)	-0.0013	-0.0013	-0.0013	-0.0013
	(-0.281)	(-0.290)	(-0.290)	(-0.299)
Funds in Family	-0.0003	-0.0025	-0.0004	-0.0026
	(-0.149)	(-0.965)	(-0.199)	(-1.010)
Constant	0.0368	0.0224	0.0351	0.0209
	(1.035)	(0.639)	(0.987)	(0.595)
Number of OEMFs	1,306	1,306	1,306	1,306
R^2	0.007	0.004	0.007	0.005
Year FE	YES	YES	YES	YES
OEMF FE		YES		YES

Table 9. Effect of the Daily Media Mentions and their Sentiment on OEMF Weekly Flows

This table reports the panel regression results for regression models (8) and (13) on OEMF weekly flows from the existence, frequency, and sentiment of daily media mentions and controls based on 2,265,094 observations for 1306 distinct OEMFs. The dependent variable (*TNFP_W*) is the average net percentage flows to the OEMF in the five-day period following the news date. Columns (1) and (2) capture the effects of the existence and frequency of daily media mentions while columns (3) and (4) focus on the sentiment of daily media mentions. *(L1)* after the variable name shows that the variable is lagged by one trading day. All the variables are defined in Appendix A. Standard errors are clustered at the OEMF level. All the regression specifications control for OEMF-fixed effects and year-fixed effects. The t-statistics are reported in the parentheses. ∗, ∗∗, and ∗∗∗ indicate statistical significance at the 5%, 1%, and 0.1% level, respectively.

Variables	(1) *CAF*	(2) *CAF*	(3) *CAF*	(4) *CAF*
AnyArt (L1)	0.0805***			0.0820***
	(4.963)			(5.131)
ArtCnt (L1)		0.0436***	0.0263	
		(2.762)	(1.285)	
NCntDum=1			0.0326	
			(1.296)	
PCntDum=1			0.0571***	
			(2.649)	
P-NCnt (L1)				0.0044
				(1.027)
MonthRet (L1)	0.1048***	0.1048***	0.1048***	0.1048***
	(2.976)	(2.975)	(2.975)	(2.975)
AbsTNF (L1)	0.0196**	0.0196**	0.0196**	0.0196**
	(2.216)	(2.213)	(2.214)	(2.216)
Age (L1)	0.0786	0.0783	0.0786	0.0786
	(0.656)	(0.654)	(0.656)	(0.656)
Size (L1)	-0.6646***	-0.6641***	-0.6642***	-0.6646***
	(-7.974)	(-7.968)	(-7.969)	(-7.974)
Rating (L1)	-0.0147	-0.0151	-0.0150	-0.0147
	(-0.283)	(-0.290)	(-0.290)	(-0.282)
Net MER	0.0240	0.0241	0.0241	0.0239
	(0.232)	(0.232)	(0.232)	(0.230)
FeeWaiver = 1	0.1968***	0.1966***	0.1966***	0.1968***
	(3.518)	(3.516)	(3.516)	(3.519)
Vol (L1)	0.0021	0.0022	0.0021	0.0021
	(0.111)	(0.115)	(0.110)	(0.110)
Funds in Family	-0.0133	-0.0132	-0.0131	-0.0133
	(-1.041)	(-1.028)	(-1.021)	(-1.040)
Income Fund	0.4686***	0.4750***	0.4731***	0.4678***
	(6.770)	(6.854)	(6.830)	(6.762)
Constant	-0.2970*	-0.3001*	-0.2992*	-0.2963*
	(-1.717)	(-1.734)	(-1.729)	(-1.713)
R^2	0.023	0.023	0.023	0.023
Clustered SE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
OEMF FE	YES	YES	YES	YES

Table 10. Effect of the Daily Media Mentions and their Sentiment on OEMF Weekly FF-5 benchmark-adjusted returns

This table reports the panel regression results for regression models (9) and (14) on OEMF average 5-day FF-5 benchmark-adjusted returns (*FF-5 ALPHA_W*) from the existence, frequency, and sentiment of daily media mentions and controls based on 2,265,094 observations for 1306 distinct OEMFs. The dependent variable is the average FF-5 benchmark adjusted returns of the OEMF in the five-day period following the news date. Columns (1) and (2) capture the effects of the existence and frequency of daily media mentions while columns (3) and (4) focus on the sentiment of daily media mentions. (L1) after the variable name shows that the variable is lagged by one trading day. All the variables are defined in Appendix A. Standard errors are clustered at the OEMF level. All the regression specifications control for OEMF-fixed effects and year-fixed effects. The t-statistics are reported in the parentheses. ∗, ∗∗, and ∗∗∗ indicate statistical significance at the 5%, 1%, and 0.1% level, respectively.

Variables	(1) *CAR*	(2) *CAR*	(3) *CAR*	(4) *CAR*
AnyArt (L1)		-0.0040***		
		(-2.720)		
ArtCnt (L1)	0.0001			0.0007
	(0.029)			(0.375)
NCntDum=1			-0.0049**	
			(-1.941)	
PCntDum=1			-0.0002	
			(-0.123)	
P-NCnt (L1)				0.0018***
				(3.249)
MonthRet (L1)	-0.0149***	-0.0149***	-0.0149***	-0.0149***
	(-3.158)	(-3.159)	(-3.159)	(-3.159)
AbsTNF (L1)	0.0007**	0.0008**	0.0008**	0.0007**
	(2.483)	(2.504)	(2.506)	(2.478)
Age (L1)	-0.0734	-0.0735	-0.0734	-0.0734
	(-1.056)	(-1.058)	(-1.057)	(-1.056)
Size (L1)	-0.0586***	-0.0586***	-0.0586***	-0.0586***
	(-11.789)	(-11.765)	(-11.767)	(-11.791)
Rating (L1)	0.0163***	0.0163***	0.0163***	0.0163***
	(4.918)	(4.919)	(4.920)	(4.925)
Net MER	-0.0179	-0.0179	-0.0179	-0.0179
	(-1.559)	(-1.564)	(-1.564)	(-1.564)
FeeWaiver = 1	-0.0085**	-0.0085**	-0.0084**	-0.0085**
	(-2.185)	(-2.177)	(-2.177)	(-2.182)
Vol (L1)	-0.0297***	-0.0297***	-0.0297***	-0.0297***
	(-11.764)	(-11.757)	(-11.755)	(-11.755)
Funds in Family	-0.0008	-0.0007	-0.0007	-0.0008
	(-1.044)	(-0.950)	(-0.945)	(-1.038)
Income Fund	0.1154***	0.1155***	0.1153***	0.1151***
	(28.145)	(28.219)	(28.121)	(28.062)
Constant	-0.0984***	-0.0987***	-0.0985***	-0.0981***
	(-3.702)	(-3.714)	(-3.707)	(-3.692)
R^2	0.004	0.004	0.004	0.004
Clustered SE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
OEMF FE	YES	YES	YES	YES

Table 11. Effect of the Existence and Frequency of Monthly Media Mentions on Long-Term OEMF Flows

This table reports the panel regression results for OEMF flows from the long-term measures of media mentions and controls based on 109,333 observations for 1306 distinct OEMFs. The dependent variable (*TNFP*) is the monthly net percentage flows to the OEMF. The measure of news existence is *AnyArt* which is a dummy variable which takes the value of 1 if there are any articles mentioning the OEMF during the month and 0 otherwise. The measures of news frequency are *ArtCnt* which is the log of the total number of news articles mentioning the OEMF plus one in each month and *ArtCnt_6m* which aggregates the values of *ArtCnt* in the six months prior. *News Months* is the number of months with at least one news article covering an OEMF in the six-month prior period. All other variables are defined in Appendix A. The results are estimated using fixed effects panel regressions and all the regression specifications control for year-fixed effects and OEMF fixed effects. *(L1)* after the variable name shows that the variable is lagged by one month. Standard errors are clustered at the OEMF level. The p-values are reported in the parentheses. ∗, ∗∗, and ∗∗∗ indicate statistical significance at the 5%, 1%, and 0.1% level, respectively.

Variables	(1) *TNFP*	(2) *TNFP*	(3) *TNFP*	(4) *TNFP*
AnyArt (L1)	0.1699***			
	(0.006)			
ArtCnt (L1)		0.0985***		
		(0.000)		
News Months			0.0411**	
			(0.043)	
ArtCnt_6m				0.0255***
				(0.002)
TNFP (L1)	0.5477***	0.5477***	0.5338***	0.5338***
	(0.000)	(0.000)	(0.000)	(0.000)
Return (L1)	1.6862***	1.6871***	1.9959***	1.9944***
	(0.000)	(0.000)	(0.000)	(0.000)
S&P 500	0.9517***	0.9456***	1.0049***	1.0001***
	(0.000)	(0.000)	(0.000)	(0.000)
absTNF (L1)	-0.2310**	-0.2302**	-0.2958***	-0.2964***
	(0.044)	(0.044)	(0.010)	(0.009)
Age (L1)	0.0944	0.0942	0.0626	0.0617
	(0.140)	(0.139)	(0.239)	(0.235)
Size (L1)	-1.0704***	-1.0726***	-1.0255***	-1.0297***
	(0.000)	(0.000)	(0.000)	(0.000)
Rating (L1)	-0.0621	-0.0637	-0.0610	-0.0632
	(0.523)	(0.512)	(0.544)	(0.529)
Net MER	-0.1136	-0.1077	-0.0393	-0.0317
	(0.635)	(0.653)	(0.863)	(0.890)
FeeWaiver = 1	0.2674***	0.2645***	0.2738***	0.2691***
	(0.008)	(0.008)	(0.006)	(0.007)
Vol (monthly)	-0.2945***	-0.2943***	-0.3506***	-0.3566***
	(0.000)	(0.000)	(0.000)	(0.000)
Funds in Family	0.0126	0.0092	0.0061	0.0025
	(0.609)	(0.710)	(0.806)	(0.921)
Income Fund	0.6271***	0.6179***	0.7286***	0.7064***
	(0.000)	(0.000)	(0.000)	(0.000)
Constant	4.7559***	4.8045***	4.5656***	4.6520***
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	109,333	109,333	103,221	103,221
R^2	0.344	0.345	0.324	0.324
N(OEMF)	1,306	1,306	1,292	1,292

Table 12. Effect of the Existence and Frequency of Monthly Media Mentions on Long-Term Performance

This table reports the panel regression results for OEMF FF-5 benchmark adjusted returns from the long-term measures of media mentions and controls. The dependent variable (*FF-5 Alpha*) is the monthly benchmark-adjusted returns of the OEMF. The measure of news existence is *AnyArt* which is a dummy variable which takes the value of 1 if there are any articles mentioning the OEMF during the month and 0 otherwise. The measures of news frequency are *ArtCnt* which is the log of the total number of news articles mentioning the OEMF plus one in each month and *ArtCnt_6m* which aggregates the values of ArtCnt in the prior six months. *News Months* is the number of months with at least one news article covering an OEMF in the prior six-month period. All other variables are defined in Appendix A. The results are estimated using fixed effects panel regressions and all the regression specifications control for year-fixed effects and OEMF fixed effects. (L1) after the variable name shows that the variable is lagged by one month. Standard errors are clustered at the OEMF level. The p-values are reported in the parentheses. ∗, ∗∗, and ∗∗∗ indicate statistical significance at the 5%, 1%, and 0.1% level, respectively.

Variables	(1) *FF-5 Alpha*	(2) *FF-5 Alpha*	(3) *FF-5 Alpha*	(4) *FF-5 Alpha*
AnyArt (L1)	-0.0023***			
	(0.000)			
ArtCnt (L1)		-0.0013***		
		(0.000)		
News Months			-0.0001	
			(0.630)	
ArtCnt_6m				-0.0000
				(0.938)
Return (L1)	-0.0148***	-0.0148***	-0.0108***	-0.0108***
	(0.000)	(0.000)	(0.000)	(0.000)
S&P 500	0.0168***	0.0169***	0.0203***	0.0203***
	(0.000)	(0.000)	(0.000)	(0.000)
absTNF (L1)	0.0030***	0.0030***	0.0024***	0.0024***
	(0.000)	(0.000)	(0.000)	(0.000)
Age (L1)	-0.0011	-0.0011	-0.0019	-0.0019
	(0.250)	(0.249)	(0.313)	(0.313)
Size (L1)	-0.0058***	-0.0057***	-0.0064***	-0.0065***
	(0.000)	(0.000)	(0.000)	(0.000)
Rating (L1)	0.0030***	0.0030***	0.0031***	0.0032***
	(0.000)	(0.000)	(0.000)	(0.000)
Net MER	-0.0036	-0.0037	-0.0043**	-0.0043**
	(0.110)	(0.104)	(0.033)	(0.032)
FeeWaiver = 1	-0.0019**	-0.0018**	-0.0019**	-0.0019**
	(0.018)	(0.021)	(0.017)	(0.017)
Vol (monthly)	-0.0012	-0.0012	-0.0022***	-0.0022***
	(0.106)	(0.105)	(0.004)	(0.004)
Funds in Family	-0.0001	-0.0000	-0.0001	-0.0001
	(0.555)	(0.753)	(0.531)	(0.514)
Income Fund	0.0236***	0.0237***	0.0226***	0.0226***
	(0.000)	(0.000)	(0.000)	(0.000)
Constant	0.0185*	0.0179	0.0309	0.0308
	(0.089)	(0.100)	(0.123)	(0.125)
Observations	109,333	109,333	103,221	103,221
R^2	0.017	0.017	0.016	0.016
Number of OEMFs	1,306	1,306	1,292	1,292
Clustered SE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
OEMF FE	YES	YES	YES	YES

Table 13. Effects of the Directional Tone of Media Mentions on Long-Term OEMF Flows

This table reports the panel regression results for OEMF monthly flows based on the directional tone (i.e. positive or negative) of media mentions for each OEMF and controls. The dependent variable is the monthly net percentage flows (*TNFP*). *P-NCnt* equals the number of positive minus negative news items covering an OEMF in each month and *P-NCnt_6m* aggregates this value over the six-month period. *PCntDum* (*NCntDum*) is a dummy variable equal to one if more positive (negative) news covers the OEMF in each month and is equal to 0 otherwise. *Pos Months* (*Neg Months*) is the number of months with more positive (negative) news covers the OEMF in the prior six-month period. All other variables are defined in Appendix A. All the regression specifications control for year-fixed effects and OEMF fixed effects. Standard errors are clustered at the OEMF level. (L1) after the variable name shows that the variable is lagged by one month. The p-values are reported in the parentheses. ∗, ∗∗, and ∗∗∗ indicate statistical significance at the 5%, 1%, and 0.1% level, respectively.

Variables	(1) *TNFP*	(2) *TNFP*	(3) *TNFP*	(4) *TNFP*	(5) *TNFP*
NCntDum=1	-0.1466*				
	(0.070)				
PCntDum=1	0.1114				
	(0.116)				
P-NCnt (L1)		0.0641			
		(0.189)			
P-NCnt_6m			0.0295		
			(0.204)		
Pos Months				0.0326	
				(0.156)	
Neg Months					-0.0097
					(0.697)
TNFP (L1)	0.5477***	0.5511***	0.5104***	0.5477***	0.5478***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
MonthRet (L1)	1.6917***	1.5797***	1.8677***	1.6924***	1.6944***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
S&P 500	0.9566***	0.9639***	1.1759***	0.9565***	0.9573***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
absTNF (L1)	-0.2316**	-0.0595	0.3259*	-0.2309**	-0.2312**
	(0.043)	(0.532)	(0.100)	(0.043)	(0.043)
Age (L1)	0.0948	0.0650	0.0395	0.0946	0.0950
	(0.139)	(0.171)	(0.103)	(0.138)	(0.139)
Size (L1)	-1.0695***	-1.1165***	-1.1067***	-1.0716***	-1.0684***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Net MER	-0.1113	-0.0762	-0.0549	-0.1138	-0.1085
	(0.643)	(0.720)	(0.841)	(0.634)	(0.650)
FeeWaiver = 1	0.2660***	0.2712**	0.2257	0.2650***	0.2645***
	(0.008)	(0.014)	(0.136)	(0.008)	(0.008)
Vol (monthly)	-0.2936***	-0.0975	-0.0306	-0.2926***	-0.2918***
	(0.000)	(0.127)	(0.673)	(0.000)	(0.000)
Funds in Family	0.0136	0.0065	-0.1135***	0.0128	0.0145
	(0.581)	(0.812)	(0.002)	(0.603)	(0.555)
Income Fund	0.6059***	0.9375***		0.5565***	0.6252***
	(0.000)	(0.000)		(0.000)	(0.000)
Observations	109,333	78,284	41,692	109,333	109,333
R2	0.344	0.346	0.303	0.344	0.344
N(OEMF)	1,306	1,286	1,072	1,306	1,306

Table 14. Effects of the Directional Tone of Media Mentions on Long-Term OEMF Performance

This table reports the panel regression results for OEMF monthly FF-5 benchmark adjusted returns based on the directional tone (i.e. positive or negative) of media mentions for each OEMF and controls. The dependent variable (*FF-5 Alpha*) is the monthly FF-5 benchmark adjusted returns of the OEMF. *P-NCnt* equals the number of positive minus negative news items covering an OEMF in each month and *P-NCnt_6m* aggregates this value over the six-month period. *PCntDum* (*NCntDum*) is a dummy variable equal to one if more positive (negative) news covers the OEMF in each month and is equal to 0 otherwise. *Pos Months* (*Neg Months*) is the number of months where more positive (negative) news covers the OEMF in the prior six-month period. All the other variables are defined in Appendix A. All the regression specifications control for year-fixed effects and OEMF fixed effects. Standard errors are clustered at the OEMF level. *(L1)* shows that the variable is lagged by one month. The p-values are reported in the parentheses. ∗, ∗∗, and ∗∗∗ indicate statistical significance at the 5%, 1%, and 0.1% level, respectively.

Variables	(1) *FF-5 Alpha*	(2) *FF-5 Alpha*	(3) *FF-5 Alpha*	(4) *FF-5 Alpha*	(5) *FF-5 Alpha*
NCntDum=1	-0.0008				
	(0.325)				
PCntDum=1	0.0019***				
	(0.010)				
P-NCnt (L1)		0.0016***			
		(0.002)			
P-NCnt_6m			0.0006**		
			(0.012)		
Pos Months				0.0008***	
				(0.000)	
Neg Months					-0.0007***
					(0.000)
ArtCnt (L1)	-0.0013***				
	(0.000)				
AnyArt (L1)		-0.0026***	-0.0037***		
		(0.001)	(0.001)		
MonthRet (L1)	-0.0147***	-0.0134***	-0.0113***	-0.0108***	-0.0108***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
S&P 500	0.0169***	0.0179***	0.0218***	0.0203***	0.0203***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
absTNF (L1)	0.0030***	0.0022***	0.0036**	0.0024***	0.0024***
	(0.000)	(0.000)	(0.025)	(0.000)	(0.000)
Age (L1)	-0.0011	-0.0011	-0.0014	-0.0019	-0.0019
	(0.250)	(0.369)	(0.341)	(0.314)	(0.315)
Size (L1)	-0.0057***	-0.0058***	-0.0072***	-0.0065***	-0.0065***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Rating (L1)	0.0031***	0.0021***	0.0021*	0.0032***	0.0032***
	(0.000)	(0.006)	(0.050)	(0.000)	(0.000)
Net MER	-0.0038	-0.0053***	-0.0015	-0.0044**	-0.0043**
	(0.101)	(0.001)	(0.430)	(0.029)	(0.036)
FeeWaiver = 1	-0.0018**	-0.0018*	-0.0009	-0.0019**	-0.0020**
	(0.021)	(0.057)	(0.524)	(0.018)	(0.015)
Vol (monthly)	-0.0012	-0.0008	-0.0055***	-0.0021***	-0.0021***
	(0.103)	(0.325)	(0.000)	(0.005)	(0.005)
Funds in Family	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001
	(0.707)	(0.504)	(0.790)	(0.497)	(0.467)
Constant	0.0190*	0.0067	0.0504***	0.0328	0.0329
	(0.080)	(0.609)	(0.002)	(0.103)	(0.101)
Observations	109,333	78,284	41,692	103,221	103,221
R^2	0.017	0.017	0.017	0.017	0.016

Table 15. Effect of the Existence and Frequency of Daily Cleansed Media Mentions on OEMF Flows

This table reports the panel regression results for regression model (8) on OEMF flows from the existence and frequency of daily cleansed media mentions (i.e. other than its holdings) and controls based on 2,266,400 observations for 1306 distinct OEMFs. The dependent variable (*TNFP*) is the net percentage flows to the OEMF. The measure of news existence is *AnyArt-ex* that is a dummy variable which takes the value of 1 if there are any articles mentioning the OEMF (and not its holdings) during the day and 0 otherwise. The measure of news frequency is *ArtCnt-ex* which is the log of the total number of news articles mentioning the OEMF (and not its holdings) plus one in each day. *NewsPct* is the number of news articles mentioning the OEMF divided by *AggCnt*. *(L1)* after the variable name shows that the variable is lagged by one trading day. All the variables are defined in Appendix A. Standard errors are clustered at the OEMF level. All the regression specifications control for year-fixed effects. The t-statistics are reported in the parentheses. ∗, ∗∗, and ∗∗∗ indicate statistical significance at the 5%, 1%, and 0.1% level, respectively.

Variables	(1) *TNFP*	(2) *TNFP*	(3) *TNFP*
AnyArt-ex (L1)	0.0378***		
	(8.964)		
ArtCnt-ex (L1)		0.0225***	
		(4.861)	
NewsPct (L1)			0.2873***
			(3.743)
AggCnt (L1)	-0.0000***	-0.0000***	
	(-3.472)	(-2.799)	
TNFP (L1)	0.0219***	0.0219***	0.0220***
	(3.441)	(3.437)	(3.439)
FndRet (L1)	-0.0379***	-0.0378***	-0.0380***
	(-16.734)	(-16.717)	(-16.748)
MonthRet (L1)	0.0263***	0.0263***	0.0263***
	(3.069)	(3.069)	(3.070)
S&P 500	-0.0084***	-0.0084***	-0.0084***
	(-8.749)	(-8.742)	(-8.780)
AbsTNF (L1)	0.0043**	0.0043**	0.0044**
	(1.969)	(1.976)	(1.986)
Age (L1)	0.0095	0.0093	0.0083
	(0.498)	(0.490)	(0.433)
Size (L1)	-0.1256***	-0.1254***	-0.1252***
	(-7.585)	(-7.571)	(-7.570)
Rating (L1)	-0.0020	-0.0022	-0.0022
	(-0.195)	(-0.209)	(-0.212)
Net MER	0.0054	0.0053	0.0052
	(0.257)	(0.254)	(0.246)
FeeWaiver = 1	0.0392***	0.0391***	0.0393***
	(3.479)	(3.471)	(3.488)
Vol (L1)	-0.0014	-0.0014	-0.0012
	(-0.311)	(-0.305)	(-0.269)
Funds in Family	-0.0025	-0.0025	-0.0022
	(-0.998)	(-0.981)	(-0.878)
Income Fund	0.0902***	0.0931***	0.0942***
	(6.509)	(6.712)	(6.789)
Constant	-0.0567	-0.0582*	-0.0625*
	(-1.640)	(-1.682)	(-1.807)
R^2	0.009	0.009	0.008
Clustered SE	YES	YES	YES
Year FE	YES	YES	YES
OEMF FE	YES	YES	YES

Table 16. Effect of Existence/Frequency of Daily Cleansed Media Mentions on OEMF Performance Based on FF-5 benchmark

This table reports the panel regression results for OEMF performance based on the existence/frequency of daily cleansed media mentions (i.e. other than its holdings) and fund performance based on 2,265,869 observations for 1306 distinct OEMFs. The dependent variable (*FF-5 Alpha*) is the Fama-French five-factor-adjusted return (FF-5) of the OEMF or *FF-5 Alpha*. The measure of news existence is *AnyArt-ex* which is a dummy variable which takes the value of 1 if there are any articles for the day mentioning the OEMF (and not its holdings) and 0 otherwise. The measure of news frequency is *ArtCnt-ex* which is the log of the total number of news articles mentioning the OEMF (and not its holdings) plus one in each day. *NewsPct* is the number of news articles mentioning the OEMF divided by *AggCnt*. Standard errors are clustered at the OEMF level. *(L1)* after the variable name shows that the variable is lagged by one trading day. All the variables are defined in Appendix A. All the regression specifications control for year-fixed effects. The t-statistics are reported in the parentheses. ∗, ∗∗, and ∗∗∗ indicate statistical significance at the 5%, 1%, and 0.1% level, respectively.

Variables	(1) *FF-5 Alpha*	(2) *FF-5 Alpha*	(3) *FF-5 Alpha*
AnyArt-ex (L1)	-0.0013**		
	(-2.005)		
ArtCnt-ex (L1)		-0.0016***	
		(-2.995)	
NewsPct (L1)			-0.0161
			(-1.322)
AggCnt (L1)	-0.0000***	-0.0000***	
	(-6.285)	(-5.921)	
FndRet (L1)	0.0102***	0.0102***	0.0104***
	(17.437)	(17.436)	(17.507)
MonthRet (L1)	-0.0038***	-0.0038***	-0.0039***
	(-3.446)	(-3.446)	(-3.444)
TNF (L1)	0.0005**	0.0005**	0.0005**
	(2.259)	(2.259)	(2.254)
Age (L1)	-0.0147	-0.0147	-0.0148
	(-1.055)	(-1.056)	(-1.053)
Size (L1)	-0.0119***	-0.0119***	-0.0120***
	(-11.848)	(-11.824)	(-11.872)
Rating (L1)	0.0034***	0.0034***	0.0034***
	(5.193)	(5.198)	(5.155)
Net MER	-0.0035*	-0.0035*	-0.0035*
	(-1.658)	(-1.659)	(-1.675)
FeeWaiver = 1	-0.0019**	-0.0019**	-0.0019**
	(-2.503)	(-2.488)	(-2.510)
Vol (L1)	-0.0063***	-0.0063***	-0.0063***
	(-10.678)	(-10.676)	(-10.666)
Funds in Family	0.0012***	0.0012***	0.0012***
	(6.370)	(6.445)	(6.362)
Income Fund	0.0181***	0.0180***	0.0184***
	(21.082)	(21.180)	(21.697)
Constant	-0.0252***	-0.0254***	-0.0266***
	(-4.749)	(-4.774)	(-4.991)
R^2	0.002	0.002	0.002
Clustered SE	YES	YES	YES
Year FE	YES	YES	YES
OEMF FE	YES	YES	YES

Table 17. Effects of the Directional Tone of Cleansed Media Mentions on OEMF Flows and Performances

This table reports the panel regression results for OEMF flows and performances based on the directional tone (i.e., positive or negative) of cleansed media mentions for each OEMF (i.e. not its holdings) for each day and controls. The dependent variables are the net percentage flows (*TNFP*) and *FF-5 Alphas*. *P-NCnt-ex* equals the number of positive minus negative cleansed news items covering an OEMF in a given day. *PCntDum-ex* (*NCntDum-ex*) is a dummy variable equal to one if more positive (negative) cleansed news covers the OEMF on a given day and is equal to 0 otherwise. All the regression specifications control for year and OEMF fixed effects. Standard errors are clustered at the OEMF level. *(L1)* after the variable name shows that the variable is lagged by one trading day. All the variables are defined in Appendix A. The t-statistics are reported in the parentheses. ∗, ∗∗, and ∗∗∗ indicate statistical significance at the 5%, 1%, and 0.1% level, respectively.

Variables	(1) *TNFP*	(2) *TNFP*	(3) *FF-5 Alpha*	(4) *FF-5 Alpha*
NCntDum-ex=1	0.0107		0.0018	
	(1.569)		(1.769)	
PCntDum-ex=1	0.0235***		0.0025**	
	(3.594)		(2.314)	
P-NCnt-ex (L1)		0.0022		-0.0001
		(1.457)		(-0.275)
ArtCnt (L1)		0.0382***		-0.0013**
		(9.121)		(-2.005)
AnyArt (L1)	0.0150**		-0.0025***	
	(2.463)		(-3.640)	
AggCnt (L1)	-0.0000***	-0.0000***	-0.0000***	-0.0000***
	(-2.685)	(-3.561)	(-5.829)	(-6.257)
TNFP (L1)	0.0219***	0.0219***	-0.0005**	-0.0005**
	(3.436)	(3.440)	(-2.409)	(-2.409)
FndRet (L1)	-0.0378***	-0.0379***	0.0103***	0.0103***
	(-16.724)	(-16.735)	(17.481)	(17.484)
MonthRet (L1)	0.0263***	0.0263***	-0.0037***	-0.0037***
	(3.069)	(3.069)	(-3.424)	(-3.425)
S&P 500	-0.0084***	-0.0084***	0.0012***	0.0012***
	(-8.743)	(-8.750)	(4.028)	(4.030)
AbsTNF (L1)	0.0043**	0.0043**	0.0001	0.0001
	(1.976)	(1.970)	(0.901)	(0.882)
Age (L1)	0.0094	0.0095	-0.0147	-0.0147
	(0.494)	(0.499)	(-1.056)	(-1.055)
Size (L1)	-0.1254***	-0.1255***	-0.0119***	-0.0119***
	(-7.572)	(-7.584)	(-11.821)	(-11.845)
Rating (L1)	-0.0023	-0.0022	0.0034***	0.0034***
	(-0.224)	(-0.209)	(5.162)	(5.153)
Net MER	0.0053	0.0054	-0.0035*	-0.0035*
	(0.255)	(0.255)	(-1.652)	(-1.653)
FeeWaiver = 1	0.0391***	0.0392***	-0.0019**	-0.0019**
	(3.472)	(3.480)	(-2.482)	(-2.500)
Vol (L1)	-0.0014	-0.0014	-0.0062***	-0.0062***
	(-0.311)	(-0.311)	(-10.602)	(-10.600)
Funds in Family	-0.0024	-0.0025	0.0013***	0.0012***
	(-0.947)	(-0.985)	(6.533)	(6.398)
Constant	0.0239	0.0234	-0.0096*	-0.0093*
	(0.682)	(0.667)	(-1.772)	(-1.727)
R^2	0.009	0.009	0.002	0.002
Clustered SE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Table 18. Effect on Fund Family Flows from the Existence of Media Mentions

This table reports the panel regression results for fund family flows from the existence of media mentions and controls for 740,756 daily observations for 397 distinct fund families. The dependent variable (*TNFP*) is the net percentage flows to the fund family. The measure of news existence is *AnyArt* which is a dummy variable equal to 1 if there are any articles mentioning the fund family and 0 otherwise. Results reported in columns (1), (2) and (3) include the interaction of *AnyArt* with the fund family's age, size, and return volatility, respectively. *(L1)* after the variable name indicates that the variable is lagged by one trading day. All the variables are defined in Appendix A. Standard errors are clustered at the fund family level. All the reported regression results control for family and year-fixed effects. The t-statistics are reported in the parentheses. ∗, ∗∗, and ∗∗∗ indicate statistical significance at the 5%, 1%, and 0.1% level, respectively.

Variables	(1) *TNFP*	(2) *TNFP*	(3) *TNFP*
AnyArt (L1)	0.0677***	0.0867***	0.0604***
	(3.647)	(2.955)	(4.315)
TNFP (L1)	0.0001	0.0001	0.0000
	(0.933)	(0.502)	(0.103)
FndRet (L1)	-0.0160***	-0.0161***	-0.0160***
	(-4.422)	(-4.436)	(-4.390)
MonthRet (L1)	-0.0080	-0.0080	-0.0079
	(-0.412)	(-0.413)	(-0.406)
S&P 500	-0.0072***	-0.0072***	-0.0072***
	(-3.634)	(-3.626)	(-3.663)
AbsTNF (L1)	0.0005	0.0007	0.0004
	(0.460)	(0.713)	(0.346)
Age (L1)	-0.0373	-0.0450	-0.0457
	(-0.643)	(-0.752)	(-0.752)
Size (L1)	-0.2082**	-0.1991**	-0.2066**
	(-2.159)	(-2.166)	(-2.157)
Rating (L1)	-0.0169	-0.0167	-0.0168
	(-0.607)	(-0.601)	(-0.601)
Vol (L1)	-0.0094	-0.0094	-0.0125
	(-0.926)	(-0.933)	(-1.286)
Funds in Family	0.0157	0.0175	0.0151
	(1.543)	(1.587)	(1.541)
*AnyArt * Age (L1)*	-0.0392*		
	(-1.888)		
*AnyArt * Size (L1)*		-0.0833**	
		(-1.978)	
*AnyArt * Vol (L1)*			0.0289***
			(3.894)
Constant	-0.0807	-0.0861	-0.0793
	(-1.433)	(-1.460)	(-1.420)
Within R^2	0.005	0.006	0.005
R^2	0.001	0.001	0.001
Clustered SE	YES	YES	YES
Year FE	YES	YES	YES
Fund family FE	YES	YES	YES

Table 19. Effect on Fund Family Flows from the Frequency of Media Mentions

This table reports the panel regression results for fund family flows from the frequency of media mentions and controls based on 740,756 observations for 397 distinct fund families. The dependent variable (*TNFP*) is the net percentage flows to the fund family. The measure of news frequency is *ArtCnt* which is the log of the total number of news articles mentioning the OEMF plus one in a given day. Results reported in columns (1), (2) and (3) include the interaction of *ArtCnt* with the fund family's age, size, and return volatility, respectively. (L1) after the variable name indicates that the variable is lagged by one trading day. All the variables are defined in Appendix A. Standard errors are clustered at the fund family level. All the models control for fund family and year-fixed effects. The t-statistics are reported in the parentheses. ∗, ∗∗, and ∗∗∗ indicate statistical significance at the 5%, 1%, and 0.1% level, respectively.

Variables	(1) *TNFP*	(2) *TNFP*	(3) *TNFP*
ArtCnt (L1)	0.0410***	0.0583***	0.0351***
	(5.112)	(3.887)	(6.354)
TNFP (L1)	0.0001	0.0000	0.0000
	(0.985)	(0.390)	(0.313)
FndRet (L1)	-0.0160***	-0.0161***	-0.0160***
	(-4.411)	(-4.427)	(-4.393)
MonthRet (L1)	-0.0080	-0.0080	-0.0078
	(-0.410)	(-0.411)	(-0.400)
S&P 500	-0.0072***	-0.0073***	-0.0073***
	(-3.637)	(-3.631)	(-3.675)
AbsTNF (L1)	0.0005	0.0007	0.0004
	(0.425)	(0.705)	(0.321)
Age (L1)	-0.0394	-0.0454	-0.0458
	(-0.665)	(-0.754)	(-0.753)
Size (L1)	-0.2076**	-0.2017**	-0.2062**
	(-2.161)	(-2.148)	(-2.156)
Rating (L1)	-0.0170	-0.0169	-0.0169
	(-0.611)	(-0.607)	(-0.606)
Vol (L1)	-0.0094	-0.0095	-0.0120
	(-0.927)	(-0.936)	(-1.224)
Funds in Family	0.0157	0.0173	0.0151
	(1.548)	(1.611)	(1.527)
*ArtCnt * Age (L1)*	-0.0255**		
	(-2.476)		
*ArtCnt * Size (L1)*		-0.0517**	
		(-2.559)	
*ArtCnt * Vol (L1)*			0.0212***
			(4.268)
Constant	-0.0792	-0.0846	-0.0777
	(-1.416)	(-1.460)	(-1.396)
Within R^2	0.005	0.005	0.005
R^2	0.001	0.001	0.001
Clustered SE	YES	YES	YES
Year FE	YES	YES	YES
Fund Family FE	YES	YES	YES

Table 20. Spillover Effects of Media Mentions on OEMF Flows and Performances

This table reports the panel regression results for the effects on an OEMF's flows and performances from media mentions about other funds managed by an OEMF's management company. The dependent variables are the net percentage flows (*TNFP*) and *FF-5 Alphas*. Mgr*AnyArt* is a dummy variable which takes the value of 1 if there are any articles for the day that mention other funds managed by an OEMF's management company and 0 otherwise. *MgrArtCnt* is the log of the total number of news articles mentioning other funds managed by an OEMF's management company plus one in each day. All the regression specifications control for year and OEMF fixed effects. Standard errors are clustered at the OEMF level. *(L1)* after the variable name shows that the variable is lagged by one trading day. All the variables are defined in Appendix A. The t-statistics are reported in the parentheses. ∗, ∗∗, and ∗∗∗ indicate statistical significance at the 5%, 1%, and 0.1% level, respectively.

Variables	(1) *TNFP*	(2) *TNFP*	(3) *FF-5 Alpha*	(4) *FF-5 Alpha*
MgrAnyArt (L1)	0.0243**		-0.0006	
	(2.310)		(-0.381)	
MgrArtCnt (L1)		0.0164**		-0.0002
		(2.516)		(-0.200)
TNFP (L1)	0.0180***	0.0180***		
	(6.990)	(6.990)		
TNF (L1)			0.0003	0.0003
			(1.531)	(1.531)
FndRet (L1)	-0.0298***	-0.0298***	0.0099***	0.0099***
	(-8.753)	(-8.752)	(12.222)	(12.222)
MonthRet (L1)	0.0359***	0.0359***	-0.0055***	-0.0055***
	(8.855)	(8.858)	(-10.578)	(-10.578)
S&P 500	-0.0071***	-0.0071***		
	(-5.454)	(-5.451)		
AbsTNF (L1)	0.0019	0.0019		
	(1.324)	(1.324)		
Age (L1)	0.0128	0.0128	-0.0028	-0.0028
	(0.560)	(0.561)	(-0.641)	(-0.641)
Size (L1)	-0.1261***	-0.1262***	-0.0124***	-0.0124***
	(-4.341)	(-4.343)	(-7.737)	(-7.736)
Rating (L1)	-0.0123	-0.0123	0.0026**	0.0026**
	(-0.720)	(-0.721)	(2.482)	(2.481)
Net MER	0.0331**	0.0331**	-0.0037	-0.0037
	(2.261)	(2.265)	(-1.341)	(-1.340)
FeeWaiver = 1	0.0321**	0.0321**	-0.0012	-0.0012
	(1.973)	(1.972)	(-1.352)	(-1.346)
Vol (L1)	-0.0015	-0.0015	-0.0076***	-0.0076***
	(-0.333)	(-0.329)	(-16.083)	(-16.083)
Funds in Family	-0.0130***	-0.0130***	0.0014***	0.0014***
	(-3.351)	(-3.352)	(5.129)	(5.128)
Constant	0.0966**	0.0968**	-0.0080*	-0.0080*
	(2.020)	(2.023)	(-1.777)	(-1.779)
Observations	891,634	891,634	891,502	891,502
R^2	0.007	0.007	0.002	0.002
Number of OEMFS	529	529	529	529
Clustered SE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
OEMF FE	YES	YES	YES	YES

Appendix A: Variable Definitions

Variable	Definition
AbsTNF	The total value of all sales and redemptions of OEMF in a given day.
Age	The OEMF's age based on its oldest share class.
AggCnt	The total number of news articles covering any US mutual fund in each trading day.
AgGrth	A dummy variable which equals "1" if an OEMF's prospectus objective is "Aggressive Growth" and 0 otherwise.
AnyArt	A dummy variable which equals "1" if there are any articles mentioning the OEMF in a given day (month) and "0" otherwise.
AnyArt-ex	A dummy variable which equals "1" if there are any articles mentioning the OEMF (and not its holdings) in a given day (month) and "0" otherwise.
ArtCnt	The log of the total number of news articles mentioning the OEMF plus one in a given day.
ArtCnt-ex	The log of the total number of news articles mentioning the OEMF (and not its holdings) plus one in a given day.
ArtCnt_6m	The aggregate value of ArtCnt in a given six-month period.
AUM	The total assets under management of an OEMF in a given day.
Count	The total number of news articles mentioning the OEMF plus one in a given day.
DistFee	The distribution fees of the OEMF which are part of the MER.
FdAUM	The forward-demeaned assets under management of the OEMF calculated using Pastor and Stambaugh (2015) approach.
FeeWaiver	A dummy variable which takes the value of 1 if gross MER does not equal Net MER and 0 otherwise.
FndRet	The percentage daily increase in the NAV of the OEMF in a given day compared to the previous observation day.
Funds in Family	The total number of funds operating in the same fund family.
Growth	A dummy variable which equals "1" if an OEMF's prospectus objective is "Growth" and 0 otherwise.
Income	A dummy variable which equals "1" if an OEMF's prospectus objective is "Income" and 0 otherwise.
MgrAnyArt	A dummy variable which equals "1" if there are any articles mentioning other funds managed by an OEMF's management company in a given day and "0" otherwise.
MgrArtCnt	The log of the total number of news articles mentioning other funds managed by an OEMF's management company plus one in a given day.
MonthRet	The percentage increase in the NAV of the OEMF compared to the previous month.
NegCnt	The log of the total number of news articles mentioning the OEMF plus one in a given day.
Neg Months	The number of months where more negative news covers the OEMF in the prior six-month period.
Net MER	The management expense ratio of the OEMF.
News Months	The number of months with at least one news article covering an OEMF in the prior six-month period.
NewsPct	The number of news articles mentioning the OEMF divided by *AggCnt*.
NCntDum	A dummy variable equal to one if there is more negative news covering the OEMF in a given day and is equal to 0 otherwise.
P-NCnt	Number of positive minus negative (negative minus positive) news items covering an OEMF in a given day.
P-NCnt_6m	Number of positive minus negative news items covering an OEMF in a given six-month period.
PCntDum	A dummy variable equal to one if there is more positive news covering the OEMF in a given day and is equal to 0 otherwise.

PosCnt	The log of the total number of positive news articles mentioning the OEMF plus one in a given day.
Pos Months	The number of months where more positive news covers the OEMF in the prior six-month period.
Rating	The weighted average of Morningstar 5-star Ratings of the share classes of an OEMF.
RedemP	The percentage of OEMF sales in a given day divided by the AUM of the previous observation day.
SaleP	The percentage of OEMF redemptions in a given day divided by the AUM of the previous observation day.
S&P 500	The daily return on the Standard and Poor's 500 Index.
Size	The log of total assets under management of an OEMF on a given day.
TNF	The total net dollar flows to/from an OEMF on a given day.
TNFP	The net percentage flow of an OEMF on a given day which is calculated by dividing the TNF by the AUM of the previous observation day.
Vol	The time-variant monthly volatility computed using daily returns of an OEMF for the past 30 trading days.

Appendix B:

Panel A shows the results of the t-test on the difference in means of *TNFP* for observation with or without any positive news articles. Panel B shows the results of the t-test on the difference in means of *TNFP* for observation with or without any negative news articles. Panel C shows the results of the t-test of the difference of means of TNFP for observations with net positive news articles and those with net negative news articles.

Group	Observations	Mean	Std. Err.	Std. Dev.
Panel A: Positive Articles				
(0) PosCnt (L1) = 0	2,362,994	0.0153	0.0002	0.3615
(1) PosCnt (L1) > 0	193,845	0.0229	0.0010	0.4603
Combined	2,556,839	0.0159	0.0002	0.3700
Difference = mean(0) - mean(1)		-0.0075	0.0008	
H0: Difference = 0	t = - 8.612		Reject	
H0: Difference < 0	Pr (T < t) = 0.0000		Accept	
H0: Difference > 0	Pr (T > t) = 1.0000		Reject	
H0: Difference ≠ 0	Pr (|T| > |t|) = 0.0000		Accept	
Panel B: Negative Articles				
(0) NegCnt (L1) = 0	2,312,042	0.0155	0.0002	0.3590
(1) NegCnt (L1) > 0	244,797	0.0193	0.0009	0.4561
Combined	2,556,839	0.0159	0.0002	0.3700
Difference = mean(0) - mean(1)		-0.0037	0.0007	
H0: Difference = 0	t = - 4.792		Reject	
H0: Difference < 0	Pr (T < t) = 0.0000		Accept	
H0: Difference > 0	Pr (T > t) = 1.0000		Reject	
H0: Difference ≠ 0	Pr (|T| > |t|) = 0.0000		Accept	
Panel C: Positive vs. Negative Articles				
(0) N-PCntDum (L1) > 0	200,088	0.0090	0.0027	1.2204
(1) P-NCntDum (L1) > 0	125,203	0.0291	0.0035	1.2607
Combined	325,291	0.0167	0.0021	1.2361
Difference = mean(0) - mean(1)		-0.0201	0 .0044	
H0: Difference = 0	t = - 4.526		Reject	
H0: Difference < 0	Pr (T < t) = 0.0000		Accept	
H0: Difference > 0	Pr (T > t) = 1.0000		Reject	
H0: Difference ≠ 0	Pr (|T| > |t|) = 0.0000		Accept	